APPENDIX K

VENTANA

TRAFFIC IMPACT ANALYSIS

January 25, 2021

Prepared by

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TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

VENTANA

TRAFFIC IMPACT ANALYSIS

January 25, 2021

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I. INTRODUCTION

This report contains the traffic impact analysis for the Ventana project. The project site is located north of Avenue 50 between Jefferson Street and Madison Street in the City of Indio. The project site is proposed to be developed with 103 single-family detached residential dwelling units. If the proposed project site was developed with the maximum density, under the proposed General Plan Amendment, it could be developed with 136 single-family detached residential dwelling units.

This traffic impact analysis methodology, findings, recommendations, and supporting data are included in this document. The study objectives include (1) documentation of existing traffic conditions in the vicinity of the site; (2) evaluation of traffic conditions for the year at full occupancy (2022) of the proposed project; (3) evaluation of traffic conditions for year 2040; (4) evaluation of vehicle miles of travel; and (5) determination of on-site and off-site improvements and system management actions needed to achieve City of Indio level of service requirements.

The first section is “Findings”, and subsequent sections expand upon the findings. In this way, information on any particular aspect of the study can be easily located by the reader.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided within Appendix A.

A. Study Area

Figure 1 illustrates the traffic analysis study area. The study area includes the following intersections:

Jefferson Street (NS) at:
- Avenue 48 (EW) – #1
- Avenue 49 (EW) – #2
- Avenue 50 (EW) – #3

Verano Drive (NS) at:
- Avenue 50 (EW) – #4

Madison street (NS) at:
- Avenue 49 (EW) – #5
- Avenue 50 (EW) – #6

Hjorth Street (NS) at:
- Avenue 50 (EW) – #7

Monroe Street (NS) at:
Avenue 50 (EW) – #8

B. Development Description

The project site is proposed to be developed with 103 single-family detached residential dwelling units. If the proposed project site was developed with the maximum density allowed by the proposed General Plan Amendment, it could be developed with 136 single-family detached residential dwelling units. The projected opening year and full operations are assumed to occur in 2022.

C. Principal Findings

a. City of Indio standard for acceptable Level of Service: D

b. The project opening year and project buildout (full occupancy) have been assumed to be year 2022.

c. Existing Level of Service: For Existing traffic conditions, the study area roadway segments are currently operating at Level of Service A (see Table 2).

The study area intersections are currently operating at Level of Service C or better during the peak hours for Existing traffic conditions (see Table 3).

d. Existing Plus Project Level of Service With Proposed Development: For Existing Plus Project – Proposed Project traffic conditions, the study area roadway segments are projected to operate at Level of Service A, without improvements (see Table 5).

Existing Plus Project Level of Service With Proposed: For Existing Plus Project – Potential Maximum Density traffic conditions, the study area roadway segments are projected to operate at Level of Service B or better, without improvements (see Table 6).

For Existing Plus Project – Proposed Project traffic conditions, the study area intersections are projected to operate at Levels of Service C or better during the peak hours, without and with improvements (see Table 7).

For Existing Plus Project – Potential Maximum Density traffic conditions, the study area intersections are projected to operate at Levels of Service C or better during the peak hours, without and with improvements (see Table 8).

e. Opening Year (2022) Level of Service Without Proposed Development: For Opening Year (2022) Without Project traffic conditions, the study area roadway segments are projected to operate at Level of Service B or better, without improvements (see Table 9).

For Opening Year (2022) Without Project traffic conditions, the study area intersections are projected to operate at Levels of Service D or better during the peak hours, without improvements (see Table 10).

f. Opening Year (2022) Level of Service With Proposed Development: For Opening Year (2022) With Project – Proposed Project traffic conditions, the study area roadway segments are projected to operate at Levels of Service B or better, without improvements (see Table 11).

Opening Year (2022) Level of Service With Proposed Development: For Opening Year (2022) With Project – Potential Maximum Density traffic conditions, the study area roadway segments are projected to operate at Levels of Service B or better, without improvements (see Table 12).

For Opening Year (2022) With Project – Proposed Project traffic conditions, the study area intersections are projected to operate at Levels of Service D or better during the peak hours, without and with improvements (see Table 13).

For Opening Year (2022) With Project – Potential Maximum Density traffic conditions, the study area intersections are projected to operate at Levels of Service D or better during the peak hours, without and with improvements (see Table 14).

g. Year 2040 Level of Service Without Proposed Development: For Year 2040 Without Project traffic conditions, the study area roadway segments are projected to operate at Level of Service D or better, without improvements (see Table 15).

For Year 2040 Without Project traffic conditions, the study area intersections are projected to operate at Levels of Service D or better during the peak hours, with improvements (see Table 16).

h. Year 2040 Level of Service With Proposed Development: For Year 2040 With Project – Proposed Project traffic conditions, the study area roadway segments are projected to operate at Levels of Service D or better, without improvements (see Table 17).

Year 2040 Level of Service With Proposed Development: For Year 2040 With Project – Potential Maximum Density traffic conditions, the study area roadway segments are projected to operate at Levels of Service D or better, without improvements (see Table 18).

For Year 2040 With Project – Proposed Project traffic conditions, the study area intersections are projected to operate at Levels of Service D or better during the peak hours, with improvements (see Table 19).

For Year 2040 With Project – Potential Maximum Density traffic conditions, the study area intersections are projected to operate at Levels of Service D or better during the peak hours, with improvements (see Table 20).

i. A traffic signal is projected to be warranted at the following study area intersection for Year 2040 Without Project traffic conditions (see Appendix D):

Hjorth Street (NS) at:
Avenue 50 (EW) - #7

A traffic signal is projected to be warranted at the following study area intersection for Year 2040 With Project traffic conditions (see Appendix D):

Verano Drive (NS) at:
Avenue 50 (EW) – #4

j. The proposed project – proposed project is presumed to cause a less-than-significant impact to the local vehicle miles of travel.

The proposed project - potential maximum density is presumed to cause a less-than-significant impact to the local vehicle miles of travel.

D. Conclusions

At buildout and full occupancy, the proposed development is projected to generate approximately 972 daily vehicle trips, 76 of which will occur during the morning peak hour and 102 of which will occur during the evening peak hour.

At buildout and full occupancy, the potential maximum density allowed by the General Plan Amendment could generate approximately 1,284 daily vehicle trips, 101 of which will occur during the morning peak hour and 135 of which will occur during the evening peak hour.

The project site is proposed to provide access to Avenue 50.

E. Recommendations

On-Site

Site-specific circulation and access recommendations are depicted on Figure 21.

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at the project accesses should be reviewed with respect to standard California Department of Transportation/City of Indio sight distance standards at the time of preparation of final grading, landscaping, and street improvement plans.

The intersection of Verano Drive (NS) at Avenue 50 (EW) - #4 is projected to warrant a traffic signal for Year 2040 With Project traffic conditions. The traffic signal is not required for Opening Year (2022) With Project traffic conditions. The signal should be constructed by the project once it is warranted.

Off-Site

The following study area intersection is projected to be significantly impacted by the project for Year 2040 With Project - Proposed Project (see Table 21).

Verona Drive (NS) at:
Avenue 50 (EW) - #4

The following study area intersection is projected to be significantly impacted by the project for Year 2040 With Project - Potential Maximum Density (see Table 22).

Verona Drive (NS) at:
Avenue 50 (EW) - #4

The intersection of Hjorth Street (NS) at Avenue 50 (EW) - #7 is not significantly impacted by the project. The level of service failure and need for a traffic signal exist without and with the project. The project will be contributing towards these intersection improvements through the payment of Development Impact Fees (DIF).

As is the case for any roadway design, the City of Indio should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

II. PROPOSED DEVELOPMENT

A. Location

The project site is located north of Avenue 50 between Jefferson Street and Madison Street in the City of Indio. The project site is proposed to be developed with 103 single-family detached residential dwelling units. Figure 1 illustrates the traffic analysis study area.

B. Land Use Intensity

The project site is proposed to be developed with 103 single-family detached residential dwelling units.

The project also includes a General Plan Amendment that would allow up to 3 units per acre, or a maximum of 136 units on the site.

C. Site Plan

Figure 2 illustrates the project site plan.

The following describes the proposed land use from a traffic-engineering viewpoint:

Single Family Detached Dwellings: The primary market for these units will be families with children. As a result, peak traffic volumes will occur during home-to-work and work-to-home trips. Child-related trips such as home-to-school or home-to-Little League are also a significant factor in the daily trip generation, but they have a smaller influence on peak hour volumes.

Figure 1
Project Location Map

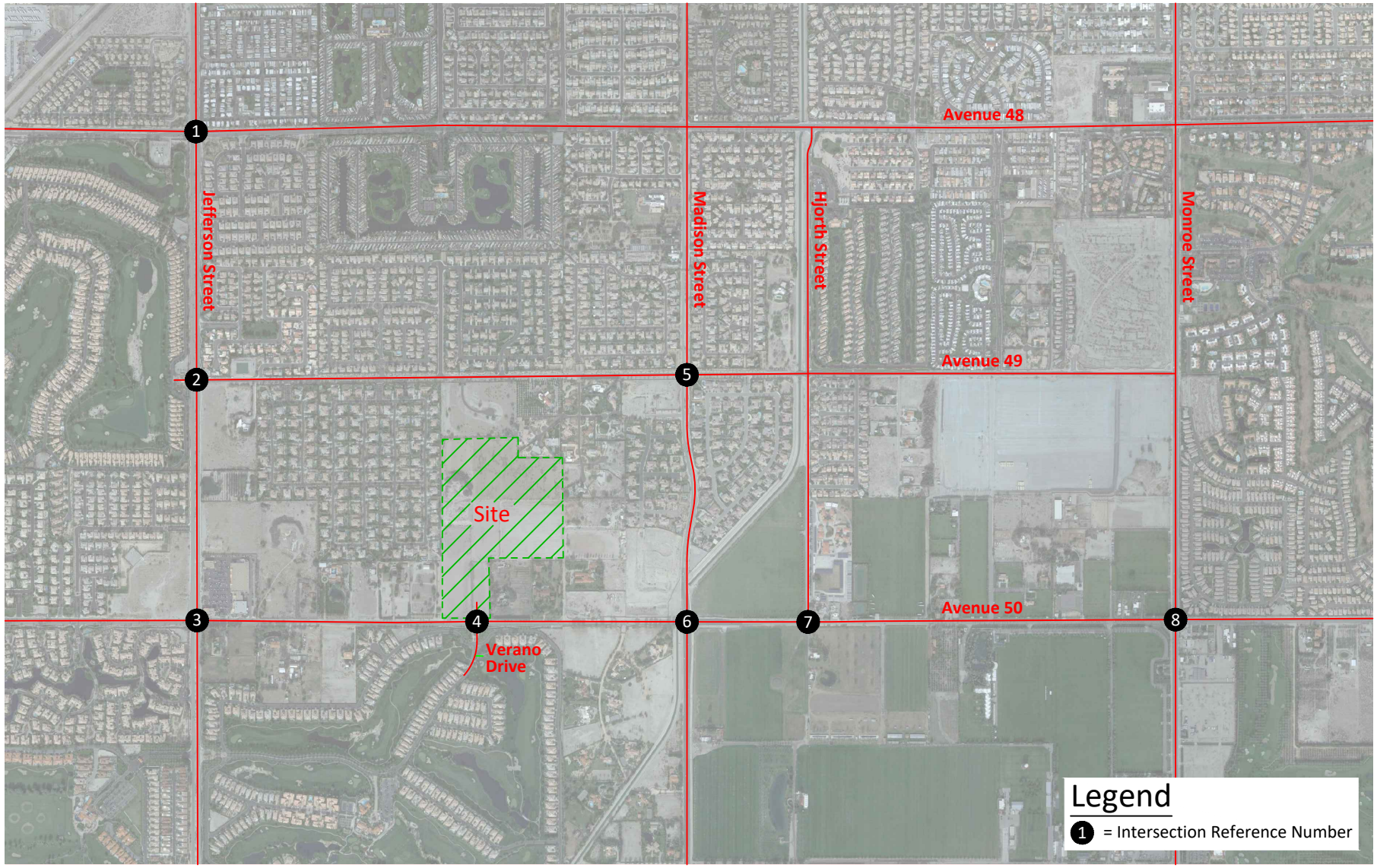

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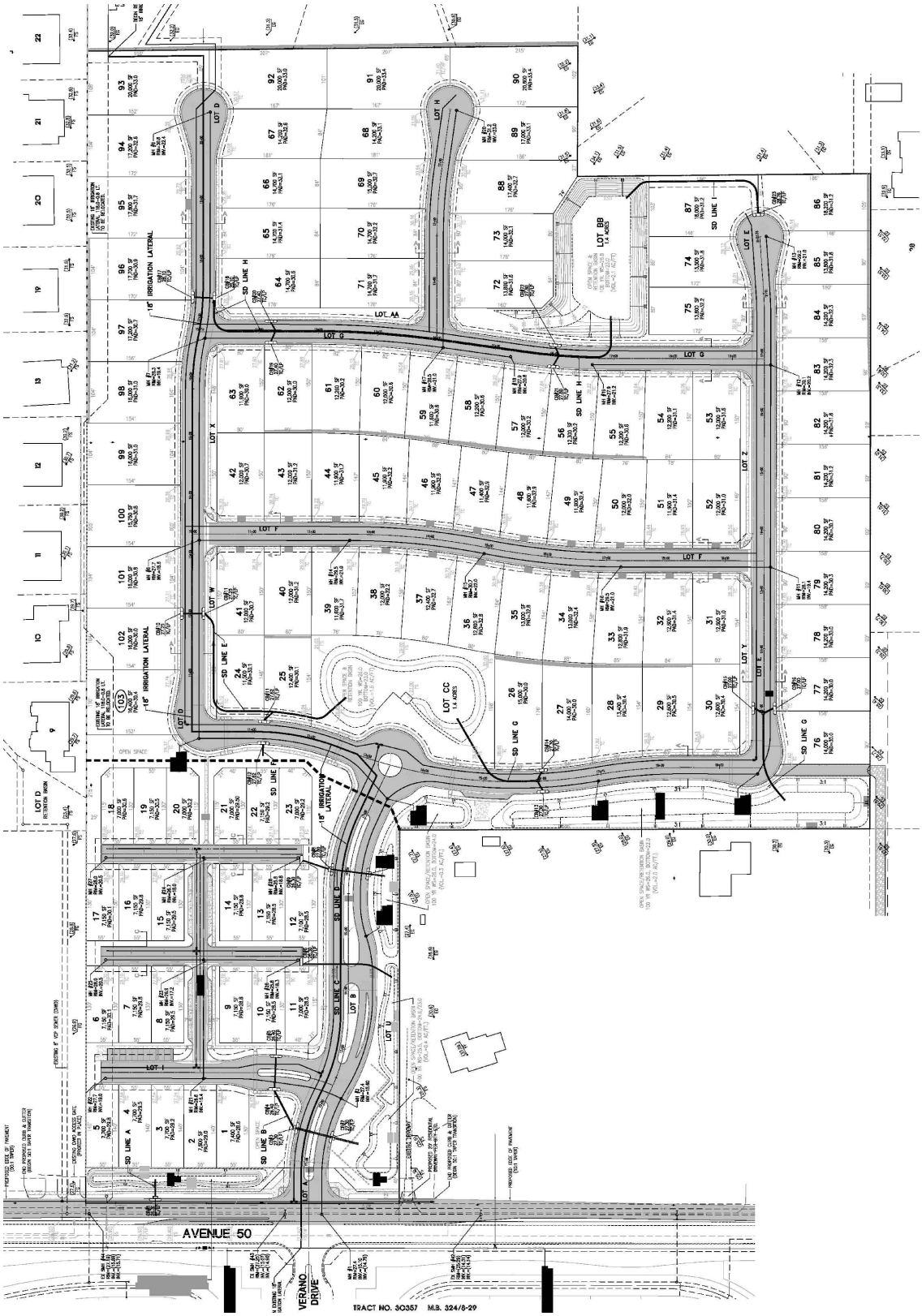
Figure 2
Site Plan



III. AREA CONDITIONS

A. Study Area

The study area includes the following intersections:

Jefferson Street (NS) at:
- Avenue 48 (EW) – #1
- Avenue 49 (EW) – #2
- Avenue 50 (EW) – #3

Verano Drive (NS) at:
- Avenue 50 (EW) – #4

Madison street (NS) at:
- Avenue 49 (EW) – #5
- Avenue 50 (EW) – #6

Hjorth Street (NS) at:
- Avenue 50 (EW) – #7

Monroe Street (NS) at:
- Avenue 50 (EW) – #8

The selection of these intersections was based upon our analysis of the potentially impacted roadway network and consultations with the City of Indio Traffic Engineer.

B. Study Area Land Use

1. Existing Land Uses

The project site is currently not developed.

2. Approved Future Development

Areawide growth is added to existing volumes in the vicinity of the site for Opening Year (2022) traffic conditions. A super conservative annual growth rate of 4.8% was provided by the City of Indio Traffic Engineer.

Areawide growth is added to existing volumes in the vicinity of the site for Year 2040 traffic conditions. A conservative annual growth rate of 2.0% is assumed.

C. Site Accessibility

1. Area Roadway System

Figure 3 identifies the Existing roadway conditions for study area roadways. The Existing number of through lanes for roadways and the intersection controls are identified.

Figure 4 exhibits the current City of Indio General Plan Circulation Element. Existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 4. This figure shows the classification and extent of arterial highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. Figure 5 illustrates the City of Indio General Plan roadway cross-sections.

Figure 6 depicts the City of Indio Bus and Rail System Map.

Figure 7 City of Indio General Plan Bike Routes.

Figure 8 depicts the existing pedestrian facilities.

According to the City of Indio General Plan, the intersection Level of Service standard will be Level of Service D, where reasonable and feasible. Where a peak hour intersection Level of Service D is not reasonable or feasible, then Level of Service E shall be the standard. The following factors shall be considered when determining whether Level of Service D is reasonable and feasible:

- Excessive right-of-way acquisition to attain Level of Service D
- Unreasonable costs to attain Level of Service D
- Impacts to other environmental resources to achieve Level of Service D, such as biological resources or cultural resources such as historic properties.
- Conflicts with other general plan policies, such as:
  - Provisions for alternative transportation such as public transit, pedestrian facilities and/or bicycle routes
  - Provisions for neighborhood preservation

2. Existing Traffic Volumes

Existing traffic volumes are based upon manual weekday morning and evening peak hour intersection turning movement counts obtained by Kunzman Associates in April 2019 and March 2020. It is important to note that these traffic counts were conducted prior to the pandemic and restrictions imposed on the general public. It is assumed that these

traffic volumes are valid for use in this analysis. Turning movement volume worksheets are provided in Appendix B.

3. Existing Average Daily Traffic Volumes

Figure 9 depicts the Existing average daily traffic volumes. The Existing average daily traffic volumes were obtained by factoring peak hour intersection turning movement counts obtained by Kunzman Associates by a determined "K" factor for the study area using the following formula for each intersection leg:

PM Peak Hour (Approach + Exit Volume) X 12.5 = Leg Volume.

4. Existing Volume to Capacity Ratios

Roadway capacity is generally defined as the number of vehicles that can be reasonably expected to pass over a given section of road in a given time period. Congestion, high accident rates, the quality of traffic flow (Level of Service), and environmental acceptability all come into play in defining a particular roadway's effective capacity. It is possible to identify maximum desirable volumes for typical roadway types based on the number of roadway travel lanes. These daily volumes reflect estimates of the amount of daily traffic that will result in peak hour traffic volumes equal to the maximum desirable capacity of each roadway type.

By dividing Existing average daily traffic volumes by the daily roadway capacities listed in Table 1, Existing volume to capacity ratios have been calculated and are shown on Table 2. As shown in Table 2, the roadway segments in the vicinity of the site currently operate at Level of Service A.

5. Existing Intersection Delay

The technique used to assess the capacity needs of an unsignalized intersection is known as the Intersection Delay Method per the 2010 Highway Capacity Manual. To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection.

The Levels of Service for the existing traffic conditions have been calculated and are shown in Table 3. Existing Levels of Service are based upon manual weekday morning and evening peak hour intersection turning movement counts obtained by Kunzman Associates in March 2020. It is important to note that these traffic counts were conducted prior to the pandemic and restrictions imposed on the general public. It is assumed that these traffic volumes are valid for use in this

analysis. Turning movement volume worksheets are provided in Appendix B.

There are two peak hours in a weekday. The morning peak hour is between 7:00 AM and 9:00 AM, and the evening peak hour is between 4:00 PM and 6:00 PM. The actual peak hour within the two-hour interval is the four consecutive 15-minute periods with the highest total volume when all movements are added together. Thus, the evening peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15-minute periods have the highest combined volume.

The study area intersections currently operate at Level of Service C or better during the peak hours for Existing traffic conditions (see Table 3). Existing delay worksheets are provided in Appendix C.

6. Transit Service

The study area is not currently served by the SunLine Transit Agency.

Table 1

City of Indio Roadway Capacities

Classification	Maximum Volume
8 Lanes Divided	71,800
6 Lanes Divided	53,900
4 Lanes Divided	35,900
4 Lanes Undivided	25,900
2 Lanes Divided	17,950
2 Lanes Undivided	13,000
1 Lanes Undivided	6,500

Table 2

Existing Roadway Segment Volume to Capacity Ratios

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	21,300	0.40	A
	Between Aveunue 48 and Avenue 49	6D	53,900	28,500	0.53	A
	Between Avenue 49 and Avenue 50	6D	53,900	26,600	0.49	A
Jerrerson Street	South of Avenue 50	6D	53,900	17,600	0.33	A
Verano Drive	South of Avenue 50	2D	17,950	800	0.04	A
	North of Avenue 49	4D	35,900	8,200	0.23	A
	Between Avenue 49 and Avenue 50	4D	35,900	7,800	0.22	A
Madison Street	South of Avenue 50	4D	35,900	7,400	0.21	A
Hjorth Street	North of Avenue 50	2U	13,000	500	0.04	A
	North of Avenue 50	4D	35,900	11,000	0.31	A
Monroe Street	South of Avenue 50	4D	35,900	8,900	0.25	A
	West of Jefferson Street	4D	35,900	15,800	0.44	A
Avenue 48	East of Jefferson Street	5D	44,900	16,800	0.37	A
	West of Jefferson Street	2D	17,950	900	0.05	A
	East of Jefferson Street	2D	17,950	3,900	0.22	A
	West of Madison Street	2U	13,000	3,000	0.23	A
Avenue 49	East of Madison Street	2U	13,000	2,900	0.22	A
	West of Jefferson Street - A	4D	35,900	8,200	0.23	A
	West of Jefferson Street - B	3D	26,925	8,200	0.30	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	10,800	0.40	A
	Between Jefferson Street and Verano Drive - B	3U	19,500	10,800	0.55	A
	Between Jefferson Street and Verano Drive - C	3D	26,925	10,800	0.40	A
	Between Verano Drive and Madison Street - A	2D	17,950	10,300	0.57	A
	Between Verano Drive and Madison Street - B	4D	35,900	10,300	0.29	A
	Between Madison Street and Hjorth Street - A	4D	35,900	8,800	0.25	A
	Between Madison Street and Hjorth Street - B	2D	17,950	8,800	0.49	A
	Between Hjorth Street and Monroe Street	2D	17,950	9,000	0.50	A
Avenue 50	East of Monroe Street	3D	26,925	11,600	0.43	A

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 3

Existing Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	21.7-C	26.0-C
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	17.1-B	13.4-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	24.1-C	21.2-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	16.5-C	17.2-C
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	11.0-B	10.5-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	23.4-C	22.4-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	21.1-C	16.3-C
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	20.5-C	18.4-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes
L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Vers 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Servic are shown for intersections with traffic signal or all way stop control. For intersections with cross s stop control, the delay and Level of Service for the worst individual movement (or movements sha a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Figure 3
Existing Through Travel Lanes and Intersection Controls

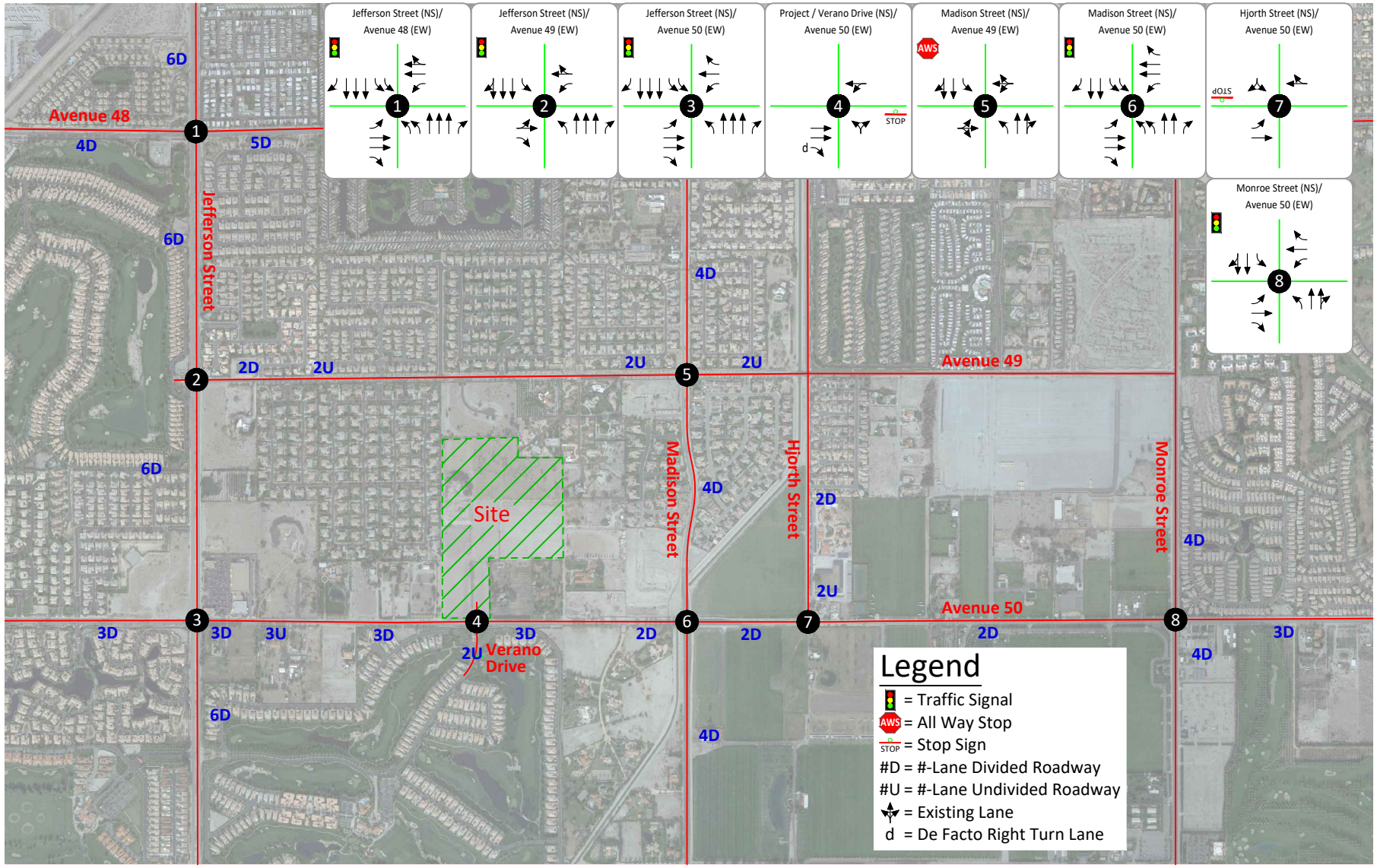


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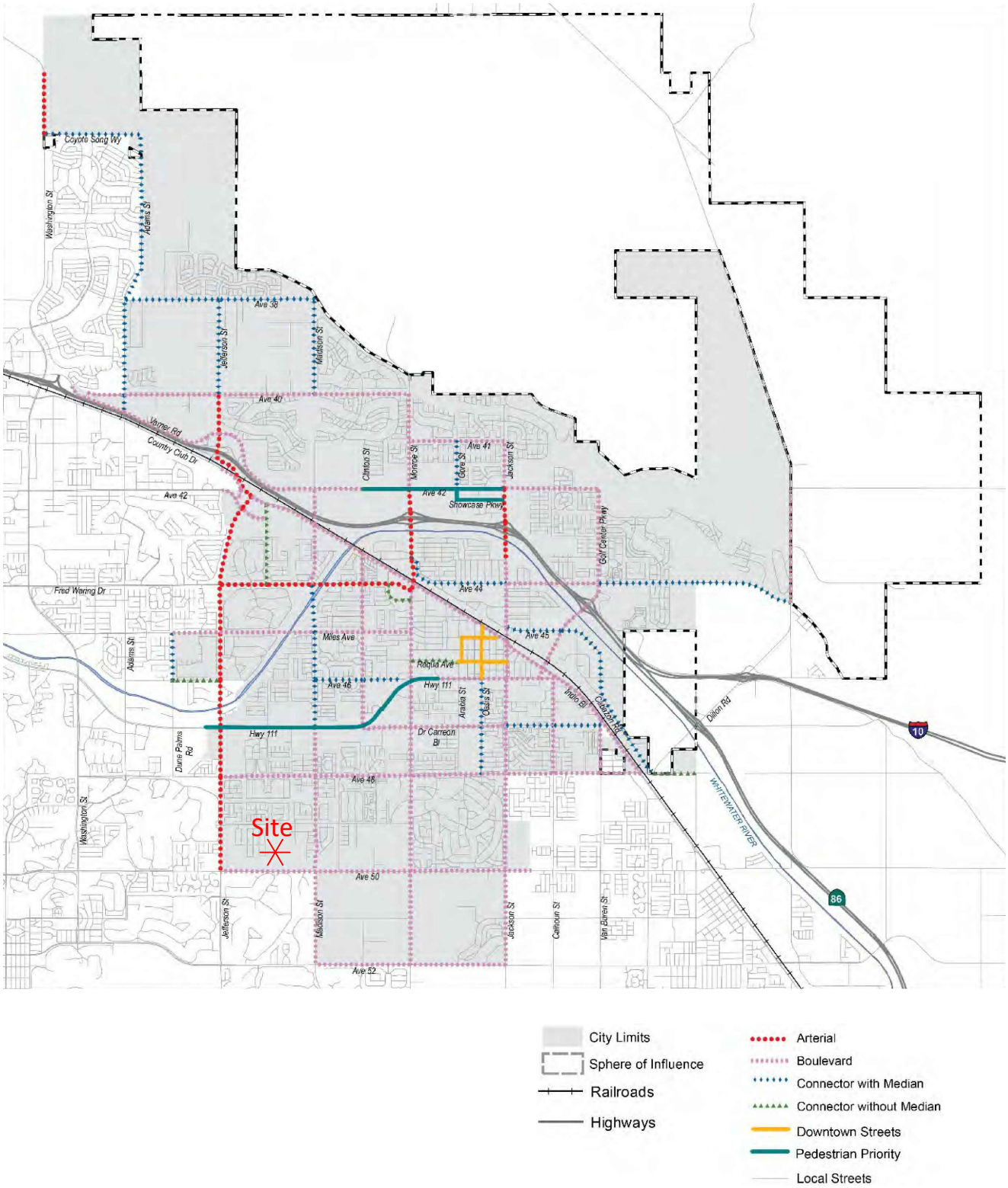
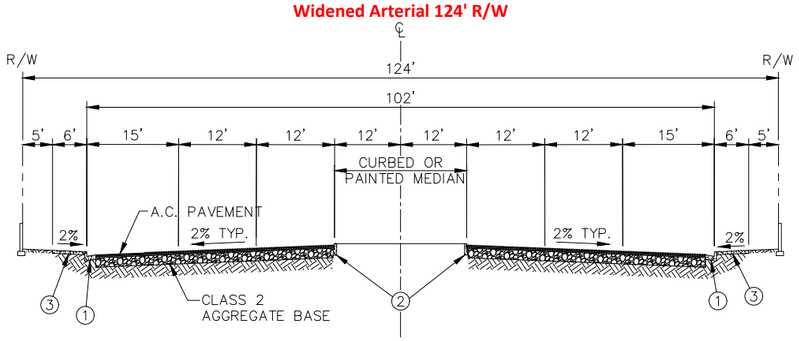
Figure 4
City of Indio General Plan Circulation Element



Source: City of Indio

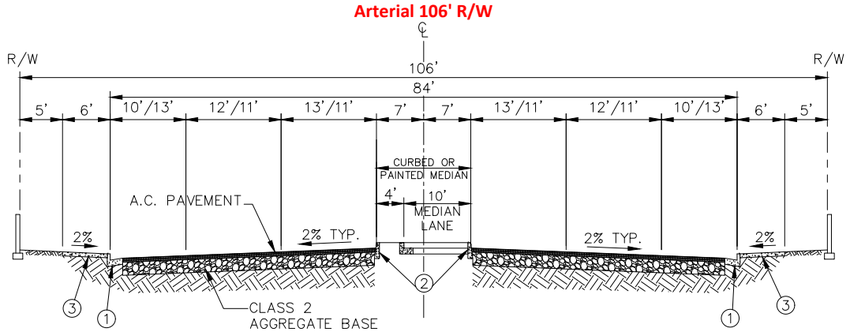
Figure 5
City of Indio General Plan Roadway Cross-Sections

Widened Arterial 124' R/W



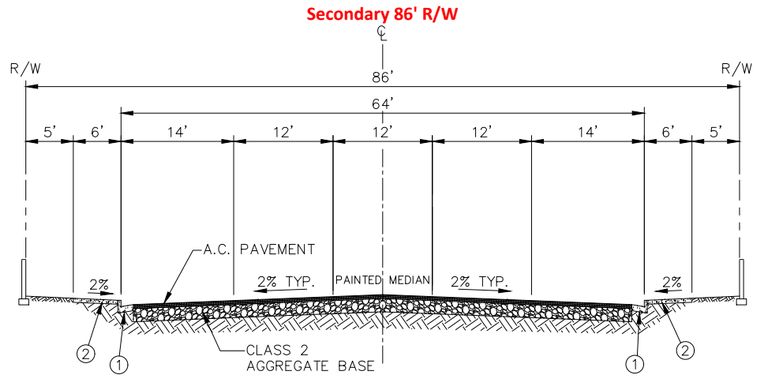
6D NO SHOULDERS

Arterial 106' R/W



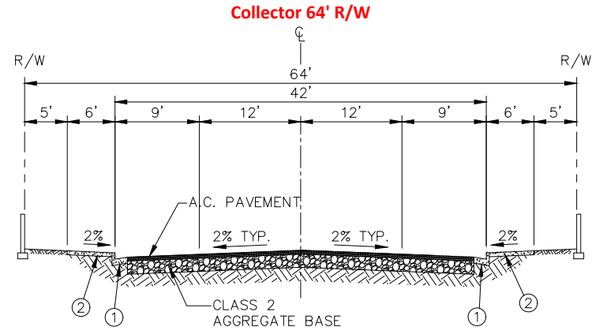
4D WITH SHOULDERS/6D NO SHOULDERS

Secondary 86' R/W



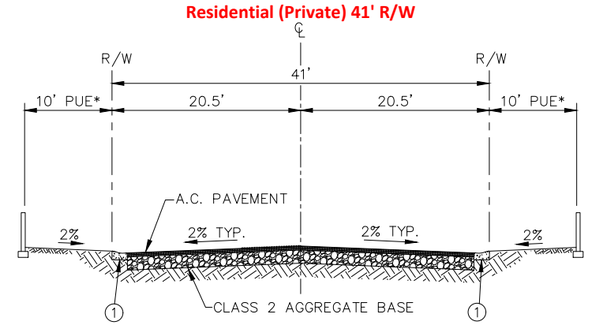
4D NO SHOULDERS

Collector 64' R/W

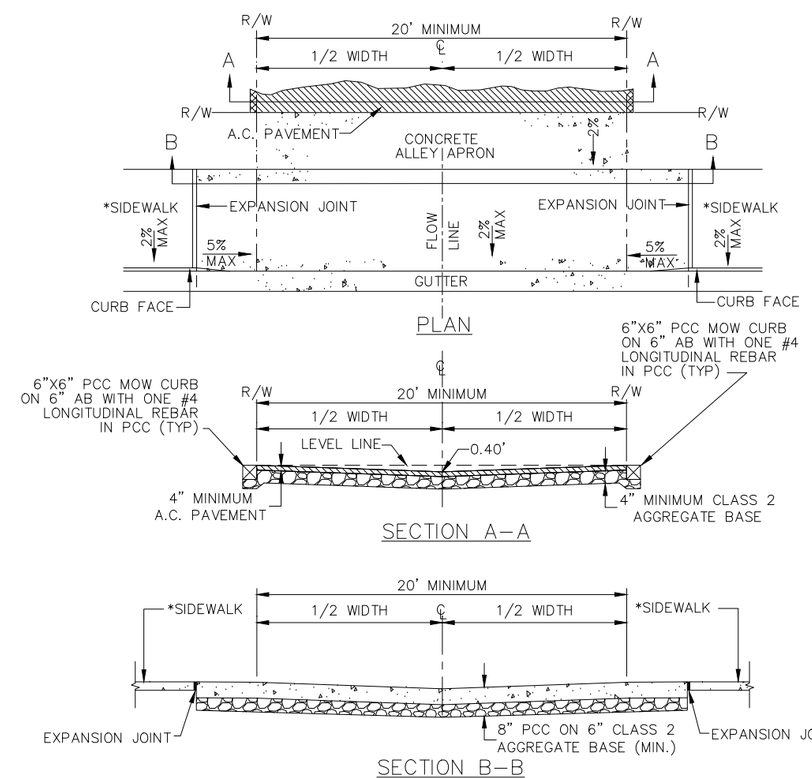


2U WITH SHOULDERS OR
2D (10' LT, 16' OUTSIDE)

Residential (Private) 41' R/W

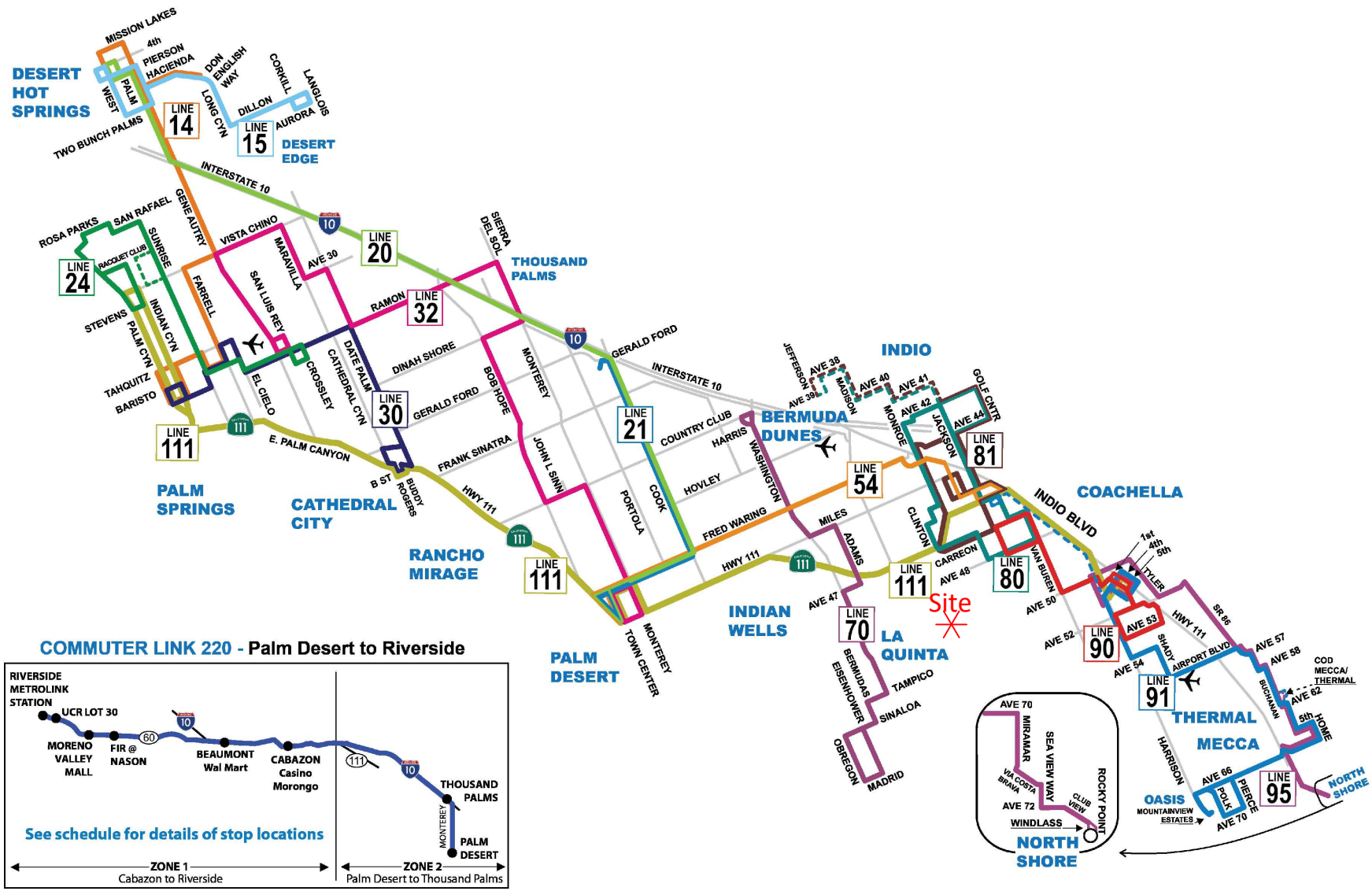


Alley With Apron



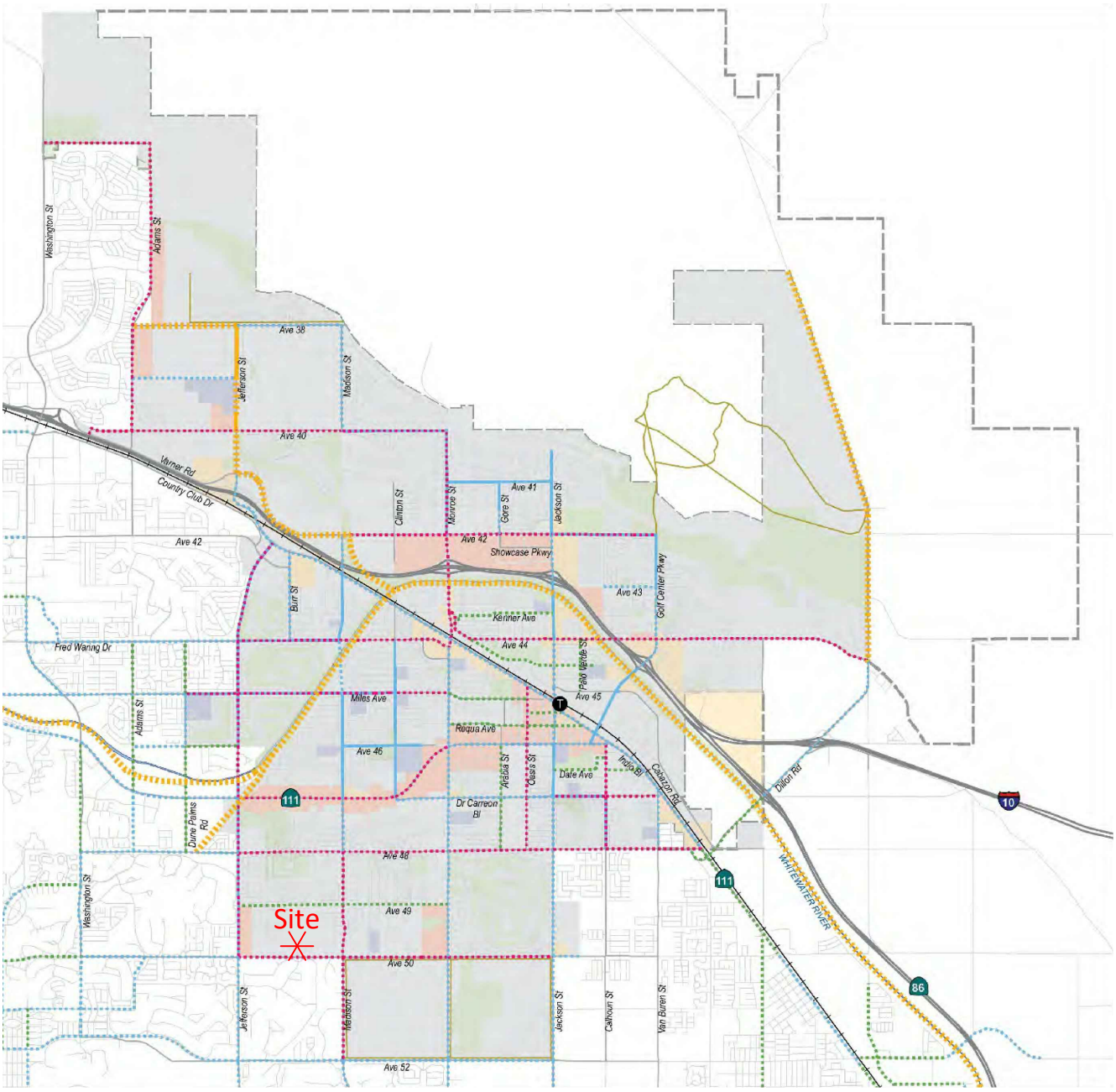
Source: City of Indio

Figure 6
City of Indio Bus and Rail System Map



Source: SunLine Transit Agency

Figure 7
City of Indio General Plan Bike Routes



City Limits
Sphere of Influence
Roads
Railroads
Highways
Class 1 - Bike Path
Class 2 - Bike Lane
Class 3 - Bike Route
Class 4 - Cycle Track
Proposed Bicycle Facility
Trails
Existing School
Mixed Use
Commercial
Recreation, Parks and Open Space
Planned Transit Center

Source: City of Indio

Figure 8
Existing Pedestrian Facilities

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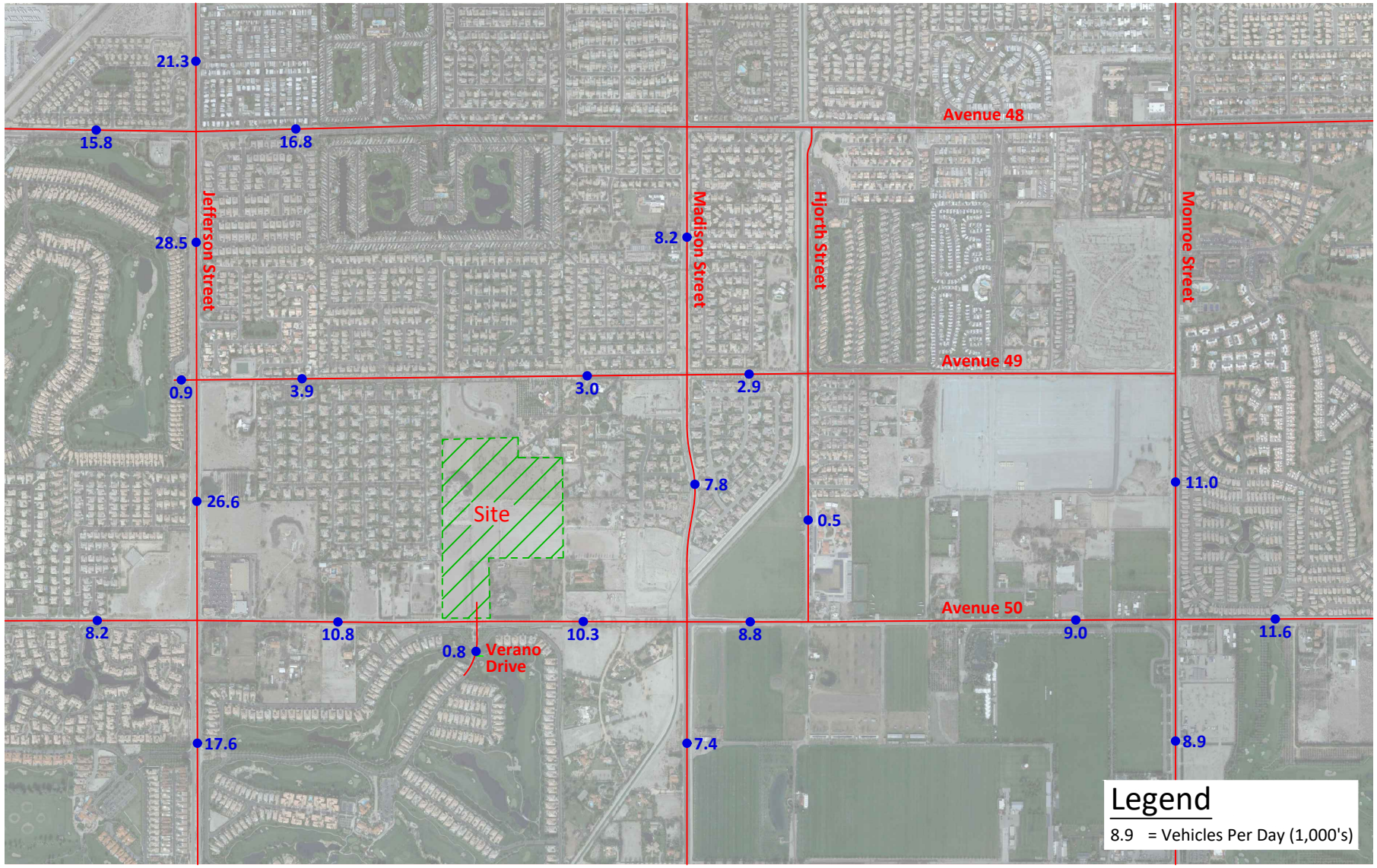
N

JN 10039a

Figure 9
Existing Average Daily Traffic Volumes



KUNZMAN ASSOCIATES

OVER 40 YEARS OF EXCELLENT SERVICE

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JN 10039a

IV. PROJECT TRAFFIC

The project site is located north of Avenue 50 between Jefferson Street and Madison Street in the City of Indio. The project site is proposed to provide access to Avenue 50.

A. Site Traffic

1. Trip Generation

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land use. By multiplying the trip generation rates by the land use quantity, the traffic volumes are determined. Table 4 exhibits the trip generation rates, project peak hour volumes, and project daily traffic volumes. The trip generation rates are from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

At buildout and full occupancy, the proposed development is projected to generate approximately 972 daily vehicle trips, 76 of which will occur during the morning peak hour and 102 of which will occur during the evening peak hour.

At buildout and full occupancy, the potential maximum density of the project site could generate approximately 1,284 daily vehicle trips, 101 of which will occur during the morning peak hour and 135 of which will occur during the evening peak hour.

The trip reducing potential of public transit has not been considered in this report.

2. Trip Distribution

Figure 10 contains the directional distributions of the project trips for the proposed land use.

To determine the trip distributions for the proposed project, peak hour intersection turning movement counts of the existing directional

distribution of traffic volumes for existing areas in the vicinity of the site, and other additional information on future development and traffic impacts in the area were reviewed.

3. Trip Assignment

Based on the identified trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 11 for the Proposed Project and Figure 12 for the Potential Maximum Density. Morning and evening peak hour intersection turning movement volumes expected from the project are shown in Appendix C.

4. Modal Split

The trip reducing potential of public transit has not been considered in this report.

Table 4

Project Trip Generation[1]

Proposed Project									
			Peak Hour						
			Morning			Evening			
Land Use	Quantity	Units[2]	Inbound	Outbound	Total	Inbound	Outbound	Total	Daily
Trip Generation Rates									
Single-Family Detached Housing	1	DU	0.18	0.56	0.74	0.62	0.37	0.99	9.44
Trips Generated									
Single-Family Detached Housing	103	DU	19	58	76	64	38	102	972

Potential Maximum Density									
			Peak Hour						
			Morning			Evening			
Land Use	Quantity	Units[2]	Inbound	Outbound	Total	Inbound	Outbound	Total	Daily
Trip Generation Rates									
Single-Family Detached Housing	1	DU	0.18	0.56	0.74	0.62	0.37	0.99	9.44
Trips Generated									
Single-Family Detached Housing	136	DU	25	76	101	84	50	135	1,284

[1] Source: Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017, Land Use Category 21

[2] DU = Dwelling Units

Figure 10
Project Trip Distribution

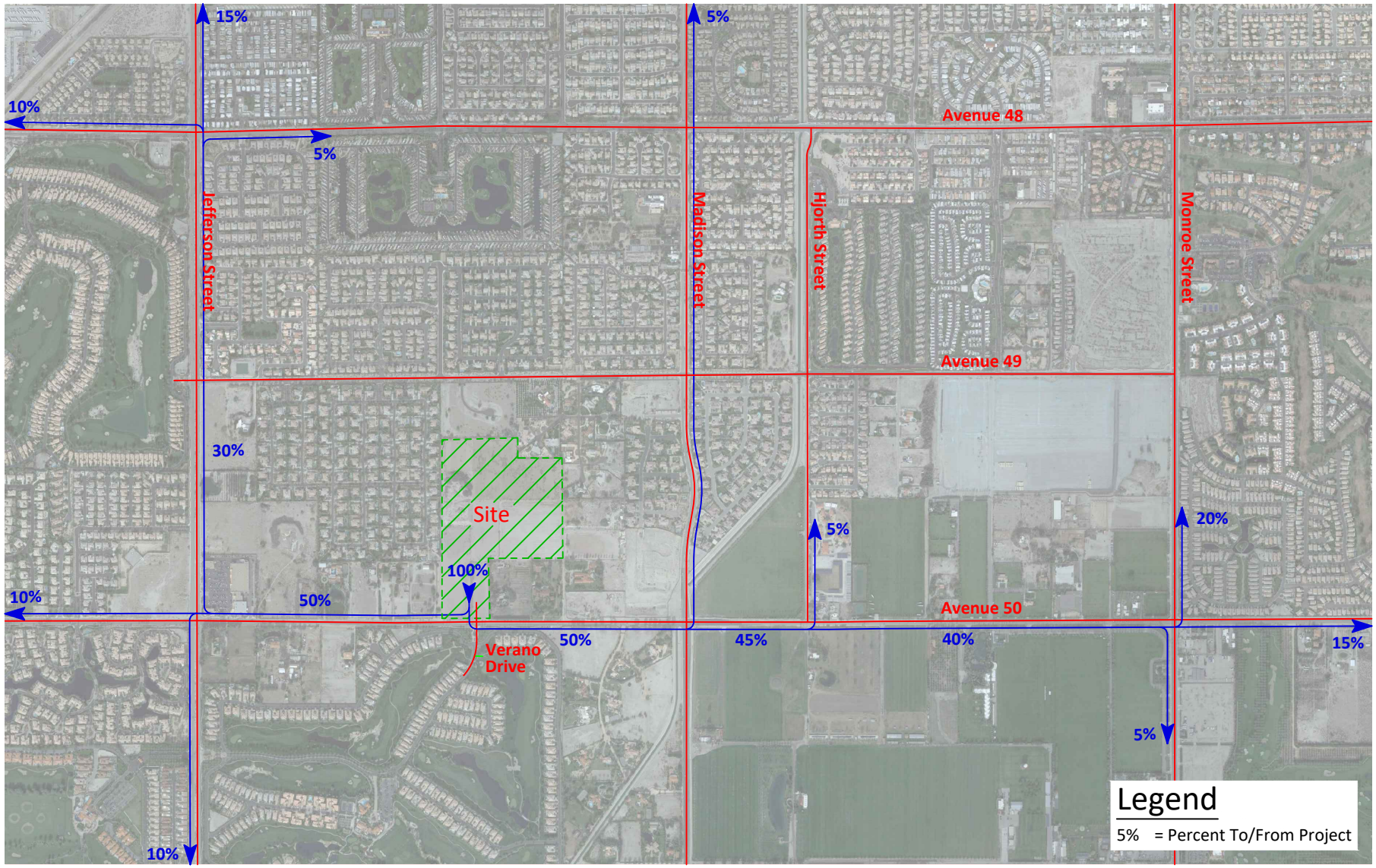

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Figure 11
Project Average Daily Traffic Volumes - Proposed Project

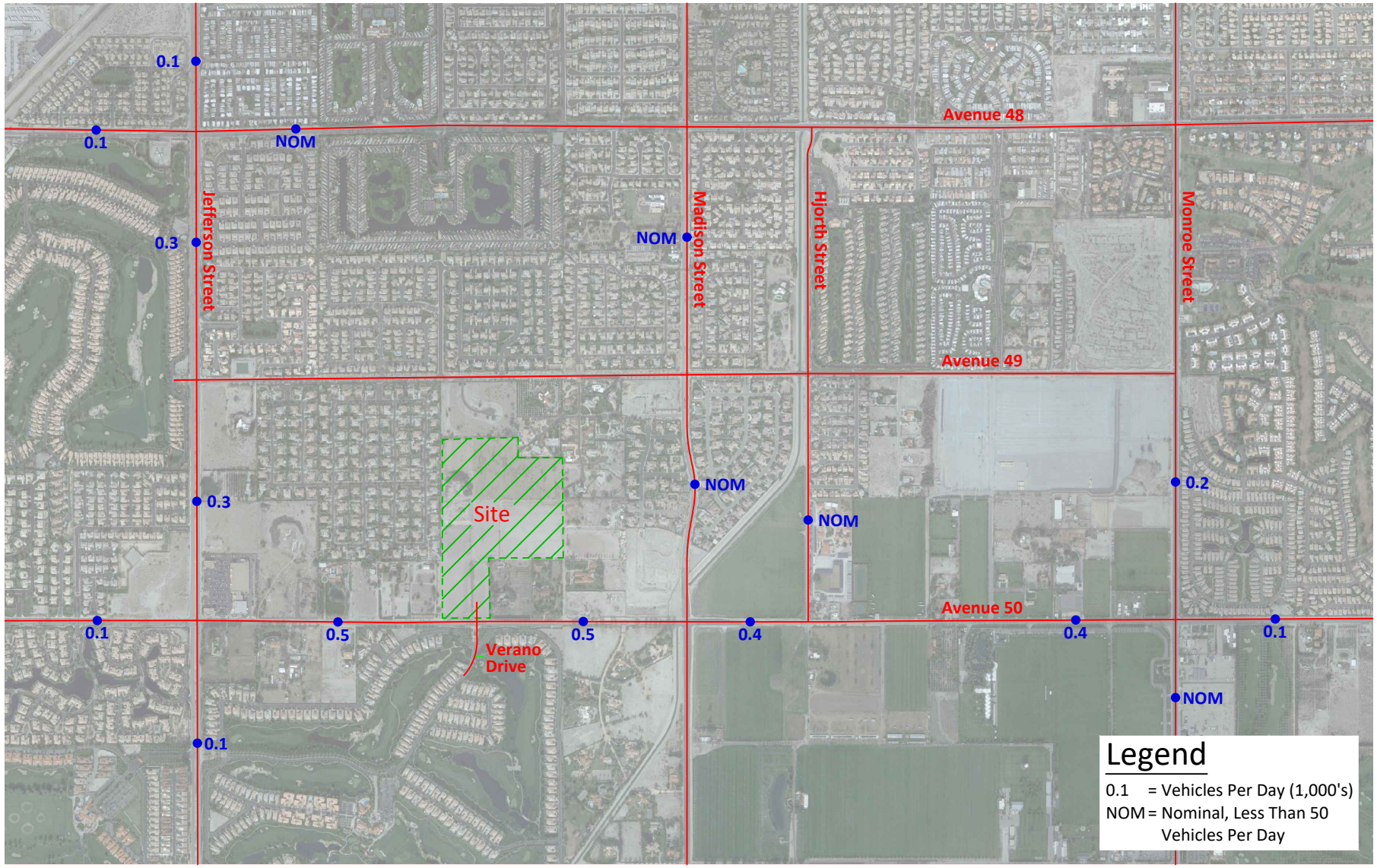

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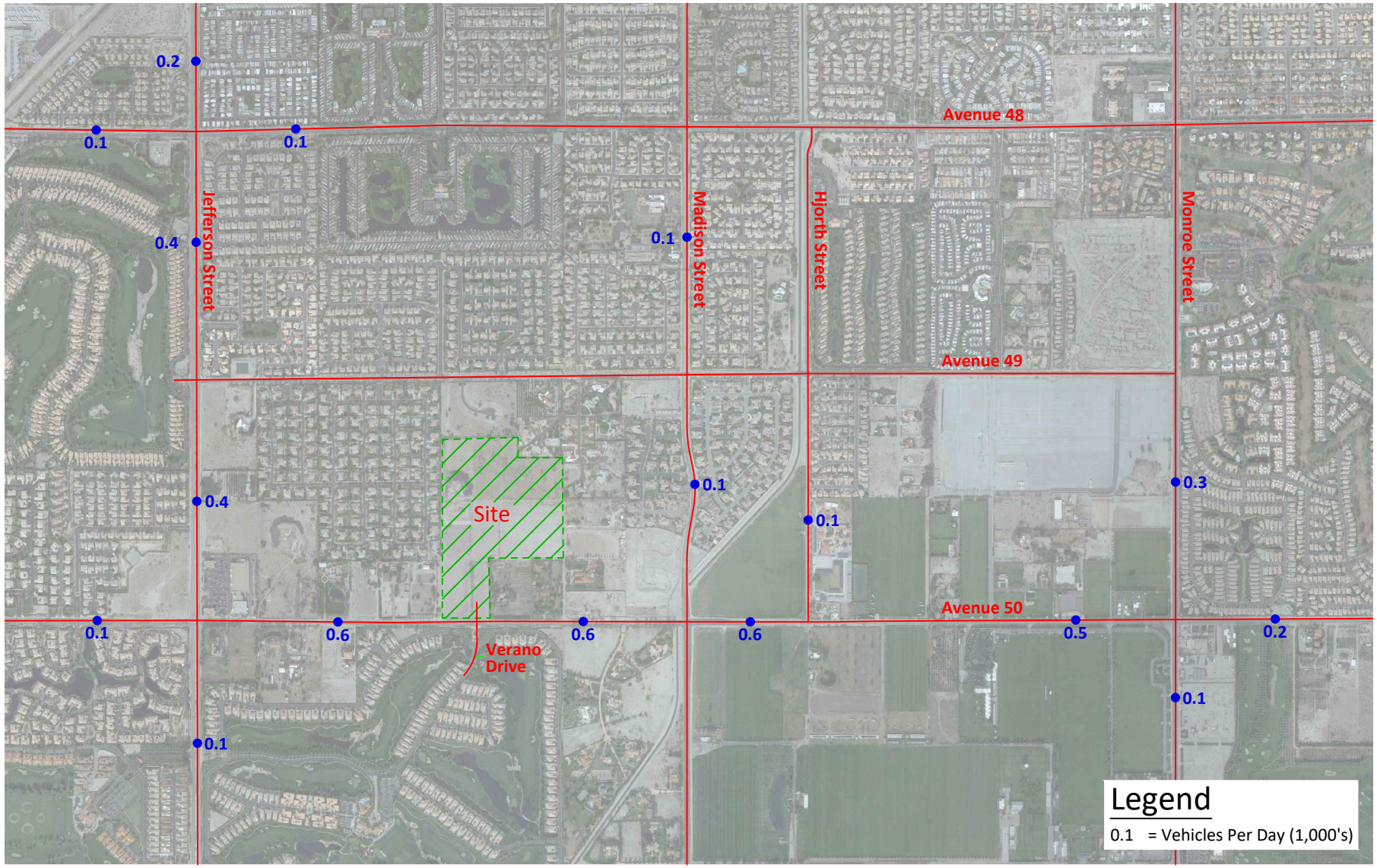
Figure 12
Project Average Daily Traffic Volumes - Potential Maximum Density



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JN 10039a

V. TRAFFIC ANALYSIS

A. Method of Projection

To assess Opening Year (2022) and Year 2040 traffic conditions, project trips are combined with areawide growth. The project opening year and project buildout are assumed to occur in 2022.

1. Existing Traffic Volumes

Existing traffic volumes were obtained from manual weekday morning and evening peak hour intersection turning movement counts obtained by Kunzman Associates in April 2019 and March 2020. It is important to note that these traffic counts were conducted prior to the pandemic and restrictions imposed on the general public. It is assumed that these traffic volumes are valid for use in this analysis. Turning movement volume worksheets are provided in Appendix B.

2. Through Traffic

To account for areawide growth on roadways, Opening Year (2022) and Year 2040 traffic volumes have been calculated based on a 4.8 percent annual growth rate of existing traffic volumes over a two (2) year and twenty (20) year period. The growth rate has been obtained from the City of Indio Traffic Engineer. Areawide growth has been added to daily and peak hour traffic volumes on surrounding roadways in addition to trips generated by the project.

B. Existing Plus Project

1. Average Daily Traffic Volumes

Figure 13 shows the average daily traffic volumes that can be expected for Existing Plus Project – Proposed Project traffic conditions.

Figure 14 shows the average daily traffic volumes that can be expected for Existing Plus Project – Maximum Potential Density traffic conditions.

2. Volume to Capacity Ratios

By dividing Existing Plus Project average daily traffic volumes by the daily roadway capacities listed in Table 1, volume to capacity ratios have been calculated and are shown in Tables 5 and 6.

As shown in Table 5, the roadway segments in the vicinity of the site are projected to operate at Level of Service A for Existing Plus Project – Proposed Project traffic conditions, without improvements.

As shown in Table 6, the roadway segments in the vicinity of the site are projected to operate at Level of Service B or better for Existing Plus Project – Maximum Potential Density traffic conditions, without improvements.

3. Intersection Delay

The Existing Plus Project delay and Level of Service for the study area roadway network are shown in Tables 7 and 8.

Table 7 shows delay values based on the geometrics at the study area intersections, without improvements. Existing Plus Project – Proposed project morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Existing Plus Project – Proposed Project delay worksheets are provided in Appendix C.

For Existing Plus Project – Proposed Project traffic conditions, the study area intersections are projected to operate at Level of Service C or better during the peak hours, without and with improvements (see Table 7).

Table 8 shows delay values based on the geometrics at the study area intersections, without improvements. Existing Plus Project – Maximum Potential Density morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Existing Plus Project – Maximum Potential Density delay worksheets are provided in Appendix C.

For Existing Plus Project – Maximum Potential Density traffic conditions, the study area intersections are projected to operate at Level of Service C or better during the peak hours, without and with improvements (see Table 8).

C. Opening Year (2022) Without Project

1. Average Daily Traffic Volumes

Figure 15 shows the average daily traffic volumes that can be expected for Opening Year (2022) Without Project traffic conditions.

2. Volume to Capacity Ratios

By dividing Opening Year (2022) Without Project average daily traffic volumes by the daily roadway capacities listed in Table 1, volume to capacity ratios have been calculated and are shown in Table 9. As shown in Table 9, the roadway segments in the vicinity of the site are projected to operate at Level of Service B or better for Opening Year (2022) Without Project traffic conditions, without improvements.

3. Intersection Delay

The Opening Year (2022) Without Project delay and Level of Service for the study area roadway network without the proposed project are shown in Table 10. Table 10 shows delay values based on the geometrics at the study area intersections, without improvements. Opening Year (2022) Without Project morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Opening Year (2022) Without Project delay worksheets are provided in Appendix C.

For Opening Year (2022) Without Project traffic conditions, the study area intersections are projected to operate at Level of Service D or better during the peak hours, without improvements (see Table 10).

D. Opening Year (2022) With Project

1. Average Daily Traffic Volumes

Figure 16 shows the average daily traffic volumes that can be expected for Opening Year (2022) With Project (proposed project) traffic conditions.

Figure 17 shows the average daily traffic volumes that can be expected for Opening Year (2022) With Project (potential maximum density) traffic conditions.

2. Volume to Capacity Ratios

By dividing Opening Year (2022) With Project average daily traffic volumes by the daily roadway capacities listed in Table 1, volume to capacity ratios have been calculated and are shown in Tables 11 and 12.

As shown in Table 11, the roadway segments in the vicinity of the site are projected to operate at Level of Service B or better for Opening Year (2022) With Project – Proposed Project traffic conditions, without improvements.

As shown in Table 12, the roadway segments in the vicinity of the site are projected to operate at Level of Service B or better for Opening Year (2022) With Project – Maximum Potential Density traffic conditions, without improvements.

3. Intersection Delay

The Opening Year (2022) delay and Level of Service for the study area roadway network with the proposed project are shown in Tables 13 and 14.

Table 13 shows delay values based on the geometrics at the study area intersections, without improvements. Opening Year (2022) With Project – Proposed Project morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Opening Year (2022) With Project – Proposed Project delay worksheets are provided in Appendix C.

For Opening Year (2022) With Project – Proposed Project traffic conditions, the study area intersections are projected to operate at Level of Service D or better during the peak hours, without and with improvements (see Table 13).

Table 14 shows delay values based on the geometrics at the study area intersections, without improvements. Opening Year (2022) With Project – Maximum Potential Density morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Opening Year (2022) With Project – Maximum Potential Density delay worksheets are provided in Appendix C.

For Opening Year (2022) With Project – Maximum Potential Density traffic conditions, the study area intersections are projected to operate at Level of Service D or better during the peak hours, without and with improvements (see Table 14).

E. Year 2040 Without Project

1. Average Daily Traffic Volumes

Figure 18 shows the average daily traffic volumes that can be expected for Year 2040 Without Project traffic conditions.

2. Volume to Capacity Ratios

By dividing Year 2040 Without Project average daily traffic volumes by the daily roadway capacities listed in Table 1, volume to capacity ratios

have been calculated and are shown in Table 15. As shown in Table 15, the roadway segments in the vicinity of the site are projected to operate at Level of Service D or better for Year 2040 Without Project traffic conditions, without improvements.

3. Intersection Delay

The Year 2040 Without Project delay and Level of Service for the study area roadway network without the proposed project are shown in Table 16. Table 16 shows delay values based on the geometrics at the study area intersections, without improvements. Year 2040 Without Project morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Year 2040 Without Project delay worksheets are provided in Appendix C.

For Year 2040 Without Project traffic conditions, the study area intersections are projected to operate at Level of Service D or better during the peak hours, with improvements (see Table 16).

F. Year 2040 With Project

1. Average Daily Traffic Volumes

Figure 19 shows the average daily traffic volumes that can be expected for Year 2040 With Project – Proposed Project traffic conditions.

Figure 20 shows the average daily traffic volumes that can be expected for Year 2040 With Project – Maximum Potential Density traffic conditions.

2. Volume to Capacity Ratios

By dividing Year 2040 With Project average daily traffic volumes by the daily roadway capacities listed in Table 1, volume to capacity ratios have been calculated and are shown in Tables 17 and 18.

As shown in Table 17, the roadway segments in the vicinity of the site are projected to operate at Level of Service D or better for Year 2040 With Project – Proposed Project traffic conditions, without improvements.

As shown in Table 18, the roadway segments in the vicinity of the site are projected to operate at Level of Service D or better for Year 2040 With Project – Maximum Potential Density traffic conditions, with improvements.

4. Intersection Delay

The Year 2040 delay and Level of Service for the study area roadway network with the proposed project are shown in Tables 19 and 20.

Table 19 shows delay values based on the geometrics at the study area intersections, without improvements. Year 2040 With Project – Proposed Project morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Year 2040 With Project – Proposed Project delay worksheets are provided in Appendix C.

For Year 2040 With Project – Proposed Project traffic conditions, the study area intersections are projected to operate at Level of Service D or better during the peak hours, with improvements (see Table 19).

Table 20 shows delay values based on the geometrics at the study area intersections, without improvements. Year 2040 With Project – Maximum Potential Density morning and evening peak hour intersection turning movement volumes are shown in Appendix C. Year 2040 With Project – Maximum Potential Density delay worksheets are provided in Appendix C.

For Year 2040 With Project – Maximum Potential Density traffic conditions, the study area intersections are projected to operate at Level of Service D or better during the peak hours, with improvements (see Table 20).

G. Traffic Signal Warrant Analysis

A traffic signal is projected to be warranted at the following study area intersection for Year 2040 Without Project traffic conditions (see Appendix D):

Hjorth Street (NS) at:
Avenue 50 (EW) - #7

A traffic signal is projected to be warranted at the following study area intersection for Year 2040 With Project traffic conditions (see Appendix D):

Verano Drive (NS) at:
Avenue 50 (EW) – #4

Table 5

Existing Plus Project Roadway Segment Volume to Capacity Ratios
Proposed Project

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	21,400	0.40	A
	Between Aveunue 48 and Avenue 49	6D	53,900	28,800	0.53	A
	Between Avenue 49 and Avenue 50	6D	53,900	26,900	0.50	A
Jerrerson Street	South of Avenue 50	6D	53,900	17,700	0.33	A
Verano Drive	South of Avenue 50	2D	17,950	800	0.04	A
	North of Avenue 49	4D	35,900	8,200	0.23	A
	Between Avenue 49 and Avenue 50	4D	35,900	7,800	0.22	A
Madison Street	South of Avenue 50	4D	35,900	7,400	0.21	A
Hjorth Street	North of Avenue 50	2U	13,000	500	0.04	A
	North of Avenue 50	4D	35,900	11,200	0.31	A
Monroe Street	South of Avenue 50	4D	35,900	8,900	0.25	A
	West of Jefferson Street	4D	35,900	15,900	0.44	A
Avenue 48	East of Jefferson Street	5D	44,900	16,800	0.37	A
	West of Jefferson Street	2D	17,950	900	0.05	A
	East of Jefferson Street	2D	17,950	3,900	0.22	A
	West of Madison Street	2U	13,000	3,000	0.23	A
Avenue 49	East of Madison Street	2U	13,000	2,900	0.22	A
	West of Jefferson Street - A	4D	35,900	8,300	0.23	A
	West of Jefferson Street - B	3D	26,925	8,300	0.31	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	11,300	0.42	A
	Between Jefferson Street and Verano Drive - B	3U	19,500	11,300	0.58	A
	Between Jefferson Street and Verano Drive - C	3D	26,925	11,300	0.42	A
	Between Verano Drive and Madison Street - A	2D	17,950	10,800	0.60	A
	Between Verano Drive and Madison Street - B	4D	35,900	10,800	0.30	A
	Between Madison Street and Hjorth Street - A	4D	35,900	9,200	0.26	A
	Between Madison Street and Hjorth Street - B	2D	17,950	9,200	0.51	A
	Between Hjorth Street and Monroe Street	2D	17,950	9,400	0.52	A
Avenue 50	East of Monroe Street	3D	26,925	11,700	0.43	A

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 6

Existing Plus Project Roadway Segment Volume to Capacity Ratios
Potential Maximum Density

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	21,500	0.40	A
	Between Aveunue 48 and Avenue 49	6D	53,900	28,900	0.54	A
	Between Avenue 49 and Avenue 50	6D	53,900	27,000	0.50	A
Jerrerson Street	South of Avenue 50	6D	53,900	17,700	0.33	A
Verano Drive	South of Avenue 50	2D	17,950	800	0.04	A
	North of Avenue 49	4D	35,900	8,300	0.23	A
	Between Avenue 49 and Avenue 50	4D	35,900	7,900	0.22	A
Madison Street	South of Avenue 50	4D	35,900	7,400	0.21	A
Hjorth Street	North of Avenue 50	2U	13,000	600	0.05	A
	North of Avenue 50	4D	35,900	11,300	0.31	A
Monroe Street	South of Avenue 50	4D	35,900	9,000	0.25	A
	West of Jefferson Street	4D	35,900	15,900	0.44	A
Avenue 48	East of Jefferson Street	5D	44,900	16,900	0.38	A
	West of Jefferson Street	2D	17,950	900	0.05	A
	East of Jefferson Street	2D	17,950	3,900	0.22	A
	West of Madison Street	2U	13,000	3,000	0.23	A
Avenue 49	East of Madison Street	2U	13,000	2,900	0.22	A
	West of Jefferson Street - A	4D	35,900	8,300	0.23	A
	West of Jefferson Street - B	3D	26,925	8,300	0.31	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	11,400	0.42	A
	Between Jefferson Street and Verano Drive - B	3U	19,500	11,400	0.58	A
	Between Jefferson Street and Verano Drive - C	3D	26,925	11,400	0.42	A
	Between Verano Drive and Madison Street - A	2D	17,950	10,900	0.61	B
	Between Verano Drive and Madison Street - B	4D	35,900	10,900	0.30	A
	Between Madison Street and Hjorth Street - A	4D	35,900	9,400	0.26	A
	Between Madison Street and Hjorth Street - B	2D	17,950	9,400	0.52	A
	Between Hjorth Street and Monroe Street	2D	17,950	9,500	0.53	A
Avenue 50	East of Monroe Street	3D	26,925	11,800	0.44	A

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 7

Existing Plus Project Intersection Delay and Level of Service
Proposed Project

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	21.7-C	26.0-C
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	17.2-B	13.4-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	24.3-C	21.5-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4															
- Without Improvements	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	21.1-C	23.2-C
- With Improvements	CSS	0	<1>	0	0	<1>	0	**1**	1.5	**0.5**	**1**	**1.5**	0.5	18.3-C	18.4-C
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	11.0-B	10.5-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	23.4-C	22.7-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	22.6-C	17.1-C
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	20.7-C	18.4-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Version 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Table 8

Existing Plus Project Intersection Delay and Level of Service
Potential Maximum Density

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	21.7-C	26.0-C
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	17.2-B	13.4-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	24.4-C	21.6-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4															
- Without Improvements	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	22.2-C	24.9-C
- With Improvements	CSS	0	<1>	0	0	<1>	0	**1**	1.5	**0.5**	**1**	**1.5**	0.5	19.0-C	19.4-C
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	11.0-B	10.5-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	23.5-C	22.8-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	23.1-C	17.4-C
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	20.8-C	18.3-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Version 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Table 9

Opening Year (2022) Without Project Roadway Segment Volume to Capacity Ratios

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	23,400	0.43	A
	Between Aveunue 48 and Avenue 49	6D	53,900	31,300	0.58	A
	Between Avenue 49 and Avenue 50	6D	53,900	29,200	0.54	A
Jerrerson Street	South of Avenue 50	6D	53,900	19,300	0.36	A
Verano Drive	South of Avenue 50	2D	17,950	900	0.05	A
	North of Avenue 49	4D	35,900	9,000	0.25	A
	Between Avenue 49 and Avenue 50	4D	35,900	8,600	0.24	A
Madison Street	South of Avenue 50	4D	35,900	8,100	0.23	A
Hjorth Street	North of Avenue 50	2U	13,000	500	0.04	A
	North of Avenue 50	4D	35,900	12,100	0.34	A
Monroe Street	South of Avenue 50	4D	35,900	9,800	0.27	A
	West of Jefferson Street	4D	35,900	17,300	0.48	A
Avenue 48	East of Jefferson Street	5D	44,900	18,400	0.41	A
	West of Jefferson Street	2D	17,950	1,000	0.06	A
	East of Jefferson Street	2D	17,950	4,300	0.24	A
	West of Madison Street	2U	13,000	3,300	0.25	A
Avenue 49	East of Madison Street	2U	13,000	3,200	0.25	A
	West of Jefferson Street - A	4D	35,900	900	0.03	A
	West of Jefferson Street - B	3D	26,925	900	0.03	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	11,900	0.44	A
	Between Jefferson Street and Verano Drive - B	3U	19,500	11,900	0.61	B
	Between Jefferson Street and Verano Drive - C	3D	26,925	11,900	0.44	A
	Between Verano Drive and Madison Street - A	2D	17,950	11,300	0.63	B
	Between Verano Drive and Madison Street - B	4D	35,900	11,300	0.31	A
	Between Madison Street and Hjorth Street - A	4D	35,900	9,700	0.27	A
	Between Madison Street and Hjorth Street - B	2D	17,950	9,700	0.54	A
	Between Hjorth Street and Monroe Street	2D	17,950	9,900	0.55	A
Avenue 50	East of Monroe Street	3D	26,925	12,700	0.47	A

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 10

Opening Year (2022) Without Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	22.3-C	29.0-C
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	18.5-B	14.5-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	25.5-C	22.0-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	18.1-C	19.0-C
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	11.7-B	11.1-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	23.5-C	22.7-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	25.2-D	17.8-C
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	20.6-C	18.6-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes
L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Vers 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Servi are shown for intersections with traffic signal or all way stop control. For intersections with cross s stop control, the delay and Level of Service for the worst individual movement (or movements sha a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Table 11

Opening Year (2022) With Project Roadway Segment Volume to Capacity Ratios
Proposed Project

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	23,500	0.44	A
	Between Aveunue 48 and Avenue 49	6D	53,900	31,600	0.59	A
	Between Avenue 49 and Avenue 50	6D	53,900	29,500	0.55	A
Jerrerson Street	South of Avenue 50	6D	53,900	19,400	0.36	A
Verano Drive	South of Avenue 50	2D	17,950	900	0.05	A
	North of Avenue 49	4D	35,900	9,000	0.25	A
	Between Avenue 49 and Avenue 50	4D	35,900	8,600	0.24	A
Madison Street	South of Avenue 50	4D	35,900	8,100	0.23	A
Hjorth Street	North of Avenue 50	2U	13,000	500	0.04	A
	North of Avenue 50	4D	35,900	12,300	0.34	A
Monroe Street	South of Avenue 50	4D	35,900	9,800	0.27	A
	West of Jefferson Street	4D	35,900	17,400	0.48	A
Avenue 48	East of Jefferson Street	5D	44,900	18,400	0.41	A
	West of Jefferson Street	2D	17,950	1,000	0.06	A
	East of Jefferson Street	2D	17,950	4,300	0.24	A
	West of Madison Street	2U	13,000	3,300	0.25	A
Avenue 49	East of Madison Street	2U	13,000	3,200	0.25	A
	West of Jefferson Street - A	4D	35,900	9,100	0.25	A
	West of Jefferson Street - B	3D	26,925	9,100	0.34	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	12,400	0.46	A
	Between Jefferson Street and Verano Drive - B	3U	19,500	12,400	0.64	B
	Between Jefferson Street and Verano Drive - C	3D	26,925	12,400	0.46	A
	Between Verano Drive and Madison Street - A	2D	17,950	11,800	0.66	B
	Between Verano Drive and Madison Street - B	4D	35,900	11,800	0.33	A
	Between Madison Street and Hjorth Street - A	4D	35,900	10,100	0.28	A
	Between Madison Street and Hjorth Street - B	2D	17,950	10,100	0.56	A
	Between Hjorth Street and Monroe Street	2D	17,950	10,300	0.57	A
Avenue 50	East of Monroe Street	3D	26,925	12,800	0.48	A

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 12

Opening Year (2022) With Project Roadway Segment Volume to Capacity Ratios
Potential Maximum Density

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	23,600	0.44	A
	Between Aveunue 48 and Avenue 49	6D	53,900	31,700	0.59	A
	Between Avenue 49 and Avenue 50	6D	53,900	29,600	0.55	A
Jerrerson Street	South of Avenue 50	6D	53,900	19,400	0.36	A
Verano Drive	South of Avenue 50	2D	17,950	900	0.05	A
	North of Avenue 49	4D	35,900	9,100	0.25	A
	Between Avenue 49 and Avenue 50	4D	35,900	8,700	0.24	A
Madison Street	South of Avenue 50	4D	35,900	8,100	0.23	A
Hjorth Street	North of Avenue 50	2U	13,000	600	0.05	A
	North of Avenue 50	4D	35,900	12,400	0.35	A
Monroe Street	South of Avenue 50	4D	35,900	9,900	0.28	A
	West of Jefferson Street	4D	35,900	17,400	0.48	A
Avenue 48	East of Jefferson Street	5D	44,900	18,500	0.41	A
	West of Jefferson Street	2D	17,950	1,000	0.06	A
	East of Jefferson Street	2D	17,950	4,300	0.24	A
	West of Madison Street	2U	13,000	3,300	0.25	A
Avenue 49	East of Madison Street	2U	13,000	3,200	0.25	A
	West of Jefferson Street - A	4D	35,900	9,100	0.25	A
	West of Jefferson Street - B	3D	26,925	9,100	0.34	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	12,500	0.46	A
	Between Jefferson Street and Verano Drive - B	3U	19,500	12,500	0.64	B
	Between Jefferson Street and Verano Drive - C	3D	26,925	12,500	0.46	A
	Between Verano Drive and Madison Street - A	2D	17,950	11,900	0.66	B
	Between Verano Drive and Madison Street - B	4D	35,900	11,900	0.33	A
	Between Madison Street and Hjorth Street - A	4D	35,900	10,300	0.29	A
	Between Madison Street and Hjorth Street - B	2D	17,950	10,300	0.57	A
	Between Hjorth Street and Monroe Street	2D	17,950	10,400	0.58	A
Avenue 50	East of Monroe Street	3D	26,925	12,900	0.48	A

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 13

Opening Year (2022) With Project Intersection Delay and Level of Service
Proposed Project

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	22.4-C	29.1-C
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	18.5-B	14.5-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	25.8-C	22.3-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4															
- Without Improvements	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	23.8-C	26.4-D
- With Improvements	CSS	0	<1>	0	0	<1>	0	**1**	1.5	**0.5**	**1**	**1.5**	0.5	20.1-C	20.2-C
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	11.8-B	11.1-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	23.5-C	23.0-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	27.3-D	18.8-C
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	20.9-C	18.6-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a rig turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Versior 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross stre stop control, the delay and Level of Service for the worst individual movement (or movements sharir a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Table 14

Opening Year (2022) With Project Intersection Delay and Level of Service
Potential Maximum Density

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	22.4-C	29.1-C
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	18.5-B	14.6-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	25.9-C	22.5-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4															
- Without Improvements	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	25.3-D	28.5-D
- With Improvements	CSS	0	<1>	0	0	<1>	0	**1**	1.5	**0.5**	**1**	**1.5**	0.5	21.1-C	21.3-C
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	11.8-B	11.1-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	23.6-C	23.0-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	28.1-D	19.1-C
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	21.0-C	18.6-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Version 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Table 15

Year 2040 Without Project Roadway Segment Volume to Capacity Ratios

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	31,700	0.59	A
	Between Aveunue 48 and Avenue 49	6D	53,900	42,400	0.79	C
	Between Avenue 49 and Avenue 50	6D	53,900	39,500	0.73	C
Jerrerson Street	South of Avenue 50	6D	53,900	26,200	0.49	A
Verano Drive	South of Avenue 50	2D	17,950	1,200	0.07	A
	North of Avenue 49	4D	35,900	12,200	0.34	A
	Between Avenue 49 and Avenue 50	4D	35,900	11,600	0.32	A
Madison Street	South of Avenue 50	4D	35,900	11,000	0.31	A
Hjorth Street	North of Avenue 50	2U	13,000	700	0.05	A
	North of Avenue 50	4D	35,900	16,300	0.45	A
Monroe Street	South of Avenue 50	4D	35,900	13,200	0.37	A
	West of Jefferson Street	4D	35,900	23,500	0.65	B
Avenue 48	East of Jefferson Street	5D	44,900	25,000	0.56	A
	West of Jefferson Street	2D	17,950	1,300	0.07	A
	East of Jefferson Street	2D	17,950	5,800	0.32	A
	West of Madison Street	2U	13,000	4,500	0.35	A
Avenue 49	East of Madison Street	2U	13,000	4,300	0.33	A
	West of Jefferson Street - A	4D	35,900	12,200	0.34	A
	West of Jefferson Street - B	3D	26,925	12,200	0.45	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	16,000	0.59	A
	Between Jefferson Street and Verano Drive - B	3U	19,500	16,000	0.82	D
	Between Jefferson Street and Verano Drive - C	3D	26,925	16,000	0.59	A
	Between Verano Drive and Madison Street - A	2D	17,950	15,300	0.85	D
	Between Verano Drive and Madison Street - B	4D	35,900	15,300	0.43	A
	Between Madison Street and Hjorth Street - A	4D	35,900	13,100	0.36	A
	Between Madison Street and Hjorth Street - B	2D	17,950	13,100	0.73	C
	Between Hjorth Street and Monroe Street	2D	17,950	13,400	0.75	C
Avenue 50	East of Monroe Street	3D	26,925	17,200	0.64	B

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 16

Year 2040 Without Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	22.3-C	53.8-D
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	27.0-C	19.6-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	43.0-D	27.2-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	26.9-D	29.4-D
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	16.5-C	14.5-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	24.3-C	23.1-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7															
- Without Improvements	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	87.9-F	26.6-D
- With Improvements	**TS**	0	0	0	0	<1>	0	1	1	0	0	<1>	0	9.7-A	3.3-A
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	25.6-C	20.6-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a r turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Versi 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Servic are shown for intersections with traffic signal or all way stop control. For intersections with cross st stop control, the delay and Level of Service for the worst individual movement (or movements shar a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Table 17

Year 2040 With Project Roadway Segment Volume to Capacity Ratios
Proposed Project

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	31,800	0.59	A
	Between Aveunue 48 and Avenue 49	6D	53,900	42,700	0.79	C
	Between Avenue 49 and Avenue 50	6D	53,900	39,800	0.74	C
Jerrerson Street	South of Avenue 50	6D	53,900	26,300	0.49	A
Verano Drive	South of Avenue 50	2D	17,950	1,200	0.07	A
	North of Avenue 49	4D	35,900	12,200	0.34	A
	Between Avenue 49 and Avenue 50	4D	35,900	11,600	0.32	A
Madison Street	South of Avenue 50	4D	35,900	11,000	0.31	A
Hjorth Street	North of Avenue 50	2U	13,000	700	0.05	A
	North of Avenue 50	4D	35,900	16,500	0.46	A
Monroe Street	South of Avenue 50	4D	35,900	13,200	0.37	A
	West of Jefferson Street	4D	35,900	23,600	0.66	B
Avenue 48	East of Jefferson Street	5D	44,900	25,000	0.56	A
	West of Jefferson Street	2D	17,950	1,300	0.07	A
	East of Jefferson Street	2D	17,950	5,800	0.32	A
	West of Madison Street	2U	13,000	4,500	0.35	A
Avenue 49	East of Madison Street	2U	13,000	4,300	0.33	A
	West of Jefferson Street - A	4D	35,900	12,300	0.34	A
	West of Jefferson Street - B	3D	26,925	12,300	0.46	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	16,500	0.61	B
	Between Jefferson Street and Verano Drive - B	3U	19,500	16,500	0.85	D
	Between Jefferson Street and Verano Drive - C	3D	26,925	16,500	0.61	B
	Between Verano Drive and Madison Street - A	2D	17,950	15,800	0.88	D
	Between Verano Drive and Madison Street - B	4D	35,900	15,800	0.44	A
	Between Madison Street and Hjorth Street - A	4D	35,900	13,500	0.38	A
	Between Madison Street and Hjorth Street - B	2D	17,950	13,500	0.75	C
	Between Hjorth Street and Monroe Street	2D	17,950	13,800	0.77	C
Avenue 50	East of Monroe Street	3D	26,925	17,300	0.64	B

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 18

Year 2040 With Project Roadway Segment Volume to Capacity Ratios
Potential Maximum Density

Roadway	Segment	Number of Lanes	Maximum Capacity (LOS E)	Average Daily Traffic Volume	Volume to Capacity Ratio	Level of Service[1]
	North of Avenue 49	6D	53,900	31,900	0.59	A
	Between Aveunue 48 and Avenue 49	6D	53,900	42,800	0.79	C
	Between Avenue 49 and Avenue 50	6D	53,900	39,900	0.74	C
Jerrerson Street	South of Avenue 50	6D	53,900	26,300	0.49	A
Verano Drive	South of Avenue 50	2D	17,950	1,200	0.07	A
	North of Avenue 49	4D	35,900	12,300	0.34	A
	Between Avenue 49 and Avenue 50	4D	35,900	11,700	0.33	A
Madison Street	South of Avenue 50	4D	35,900	11,000	0.31	A
Hjorth Street	North of Avenue 50	2U	13,000	800	0.06	A
	North of Avenue 50	4D	35,900	16,600	0.46	A
Monroe Street	South of Avenue 50	4D	35,900	13,300	0.37	A
	West of Jefferson Street	4D	35,900	23,600	0.66	B
Avenue 48	East of Jefferson Street	5D	44,900	25,100	0.56	A
	West of Jefferson Street	2D	17,950	1,300	0.07	A
	East of Jefferson Street	2D	17,950	5,800	0.32	A
	West of Madison Street	2U	13,000	4,500	0.35	A
Avenue 49	East of Madison Street	2U	13,000	4,300	0.33	A
	West of Jefferson Street - A	4D	35,900	12,300	0.34	A
	West of Jefferson Street - B	3D	26,925	12,300	0.46	A
	Between Jefferson Street and Verano Drive - A	3D	26,925	16,600	0.62	B
	Between Jefferson Street and Verano Drive - B	3U	19,500	16,600	0.85	D
	Between Jefferson Street and Verano Drive - C	3D	26,925	16,600	0.62	B
	Between Verano Drive and Madison Street - A	3U	19,500	15,900	0.82	D
	Between Verano Drive and Madison Street - B	4D	35,900	15,900	0.44	A
	Between Madison Street and Hjorth Street - A	4D	35,900	13,700	0.38	A
	Between Madison Street and Hjorth Street - B	2D	17,950	13,700	0.76	C
	Between Hjorth Street and Monroe Street	2D	17,950	13,900	0.77	C
Avenue 50	East of Monroe Street	3D	26,925	17,400	0.65	B

[1] LOS = Level of Service, which is based on maximum capacity (LOS E).
Level of Service A = Volume to Capacity Ratio of 0.000 - 0.600
Level of Service B = Volume to Capacity Ratio of 0.600 - 0.700
Level of Service C = Volume to Capacity Ratio of 0.701 - 0.800
Level of Service D = Volume to Capacity Ratio of 0.801 - 0.900
Level of Service E = Volume to Capacity Ratio of 0.901 - 1.000
Level of Service F = Volume to Capacity Ratio of 1.00 and up

Table 19

Year 2040 With Project Intersection Delay and Level of Service
Proposed Project

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	27.4-C	54.3-D
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	27.2-C	19.7-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	43.4-D	27.4-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4															
- Without Improvements	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	40.6-E	46.6-E
- With Improvements	**TS**	0	<1>	0	0	<1>	0	**1**	1.5	**0.5**	**1**	**1.5**	0.5	8.5-A	4.0-A
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	16.5-C	14.5-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	24.2-C	23.2-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7															
- Without Improvements	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	99.9-F	28.6-D
- With Improvements	**TS**	0	0	0	0	<1>	0	1	1	0	0	<1>	0	9.7-A	3.5-A
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	25.3-C	20.4-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Version 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Table 20

Year 2040 With Project Intersection Delay and Level of Service
Potential Maximum Density

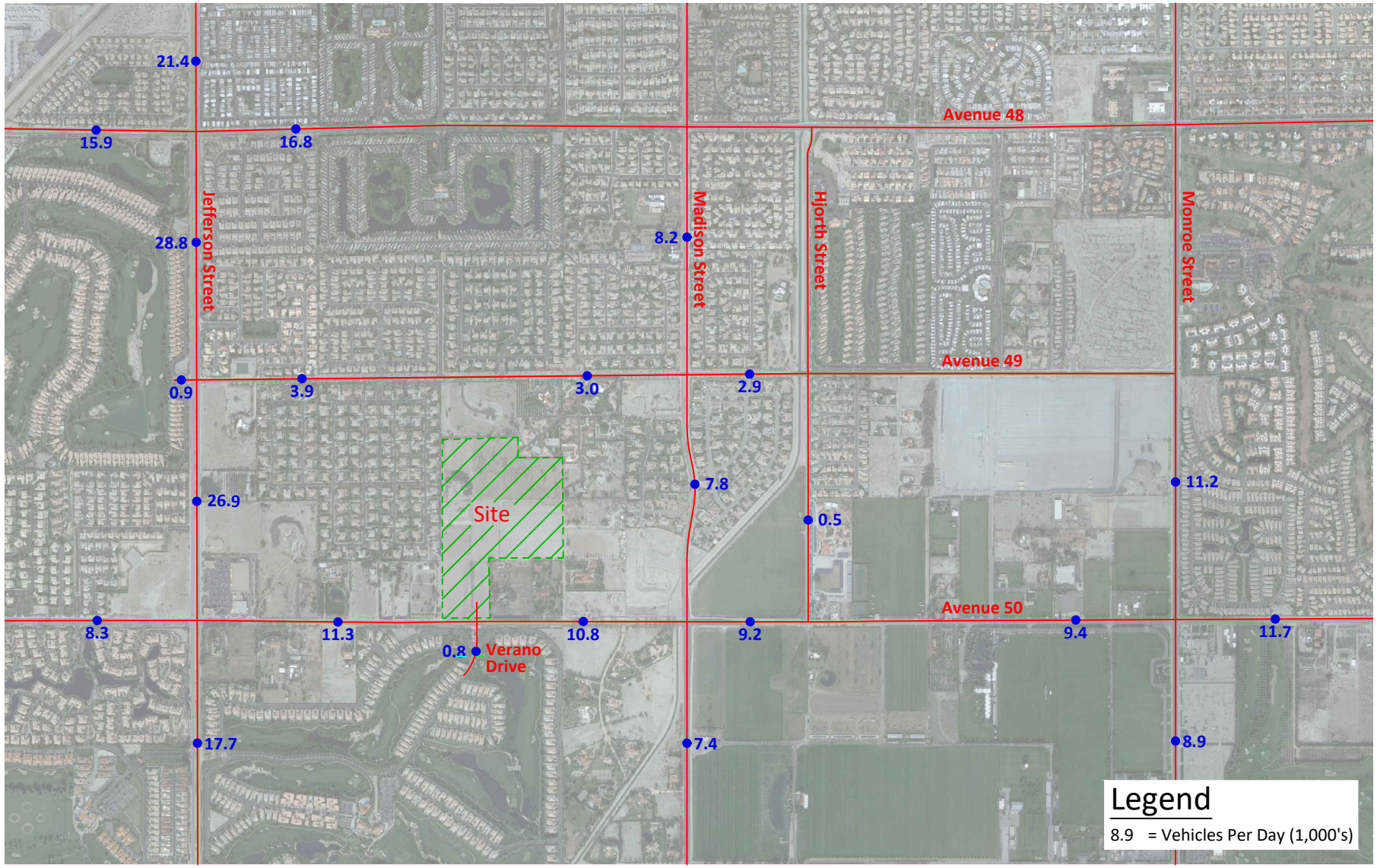
Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Jefferson Street (NS) at:															
Avenue 48 (EW) - #1	TS	2	3	1	2	3	1	1	2	1	1	1.5	0.5	27.5-C	54.5-D
Avenue 49 (EW) - #2	TS	1	3	1	1	2.5	0.5	0.5	0.5	1	1	0.5	0.5	27.2-C	19.7-B
Avenue 50 (EW) - #3	TS	1	3	1	2	3	1	1	2	1	1	1	1	43.7-D	27.5-C
Verano Drive (NS) at:															
Avenue 50 (EW) - #4															
- Without Improvements	CSS	0	<1>	0	0	0	0	0	2	d	0	<1>	0	45.4-E	51.9-F
- With Improvements	**TS**	0	<1>	0	0	<1>	0	**1**	1.5	**0.5**	**1**	**1.5**	0.5	4.0-A	3.4-A
Madison Street (NS) at:															
Avenue 49 (EW) - #5	AWS	1	1.5	0.5	1	1.5	0.5	0	<1>	0	0	<1>	0	16.5-C	14.5-B
Avenue 50 (EW) - #6	TS	2	2	1	2	2	1	1	2	1	1	2	1	24.3-C	23.2-C
Hjorth Street (NS) at:															
Avenue 50 (EW) - #7															
- Without Improvements	CSS	0	0	0	0	<1>	0	1	1	0	0	<1>	0	99.9-F	29.2-D
- With Improvements	**TS**	0	0	0	0	<1>	0	1	1	0	0	<1>	0	9.7-A	3.6-A
Monroe Street (NS) at:															
Avenue 50 (EW) - #8	TS	1	1.5	0.5	1	1.5	0.5	1	1	1	1	1	1	25.3-C	20.5-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Lane; **1** = Improvement

[2] Delay and Level of Service has been calculated using the following analysis software: Vistro, Version 6.00-02. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] AWS = All Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

Figure 13
Existing Plus Project Average Daily Traffic Volumes - Proposed Project



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OVER 40 YEARS OF EXCELLENT SERVICE

N

JN 10039a

Figure 14
Existing Plus Project Average Daily Traffic Volumes - Potential Maximum Density

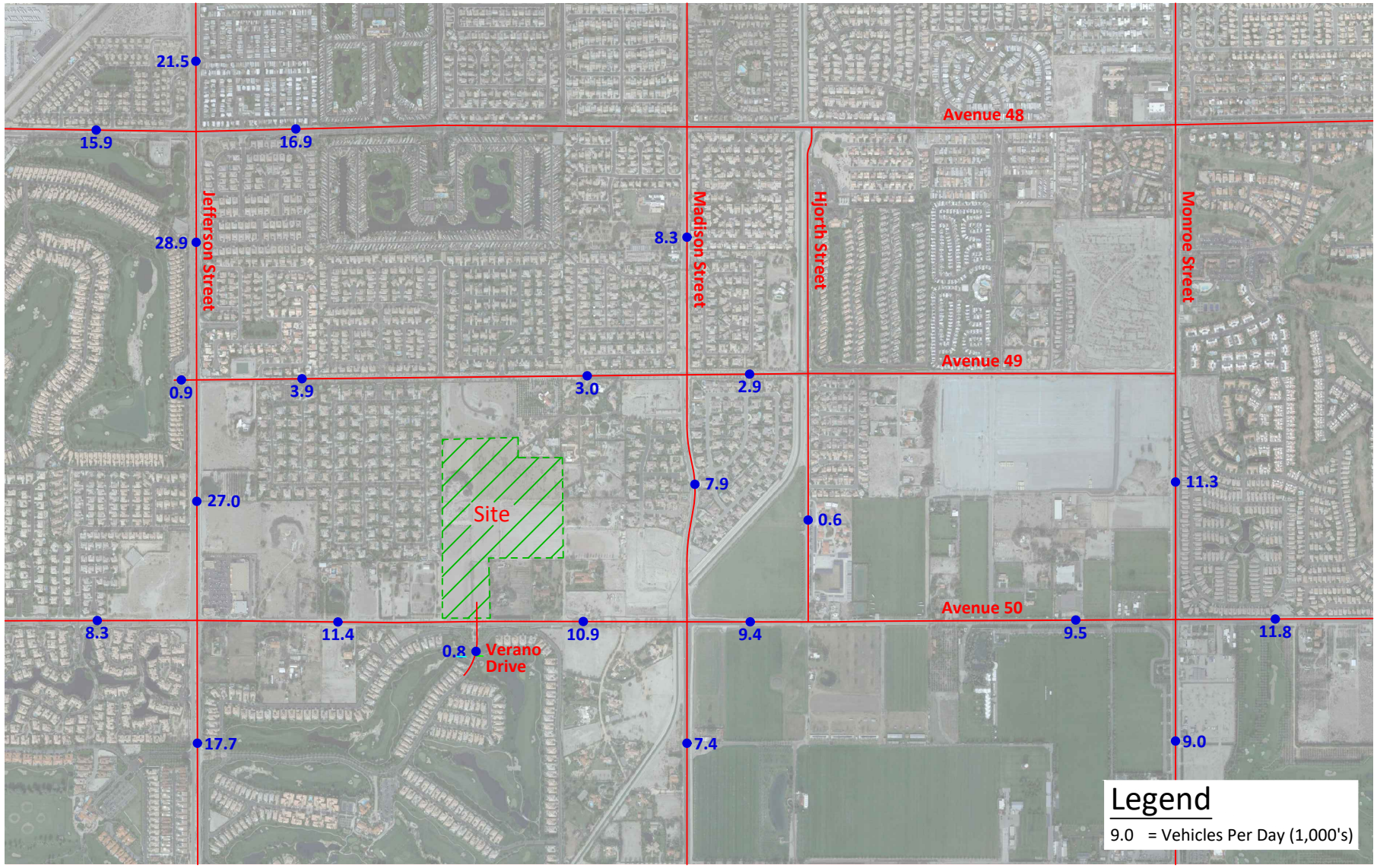

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Figure 15
Opening Year (2022) Without Project Average Daily Traffic Volumes

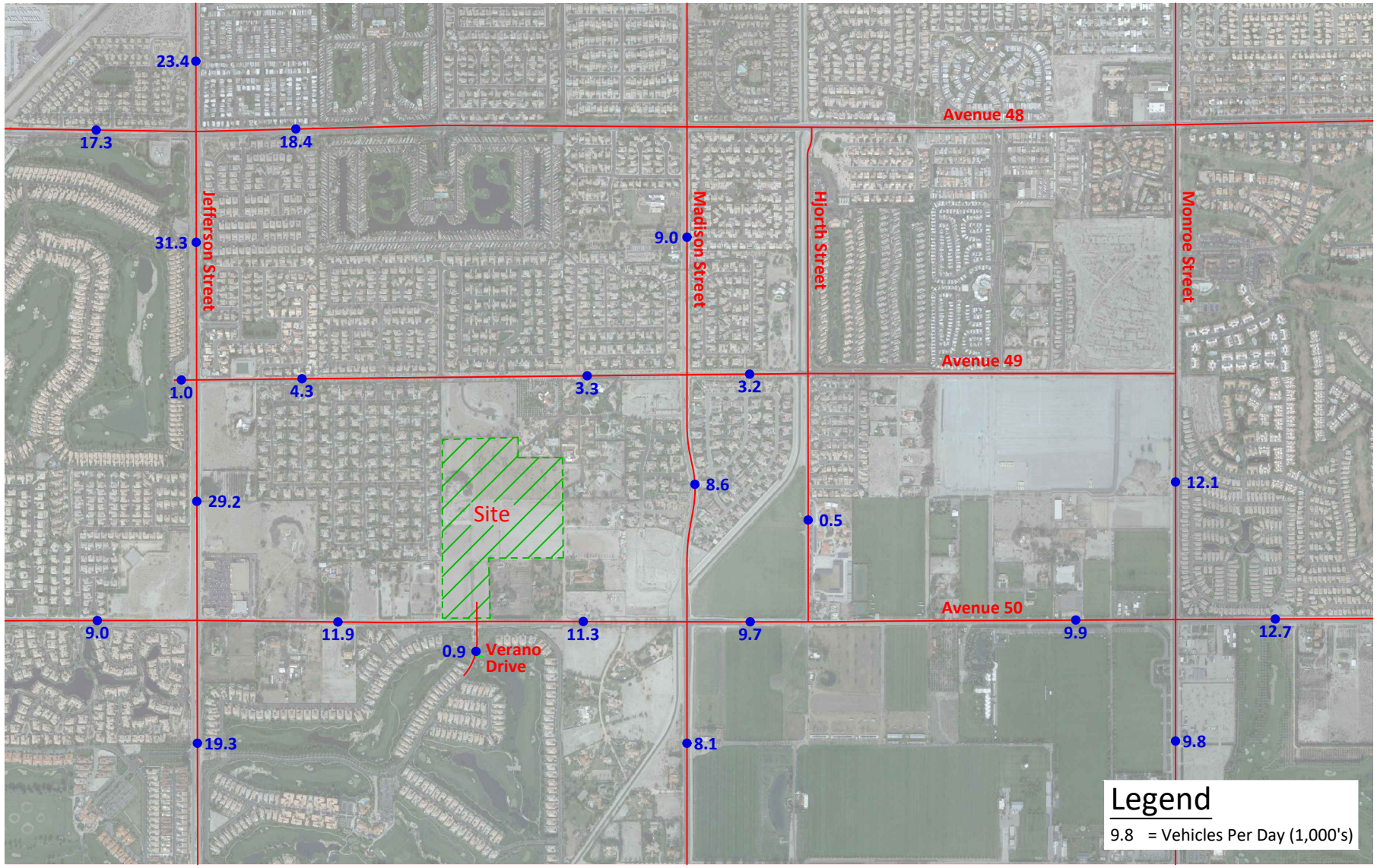

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Figure 16
Opening Year (2022) With Project Average Daily Traffic Volumes - Proposed Project

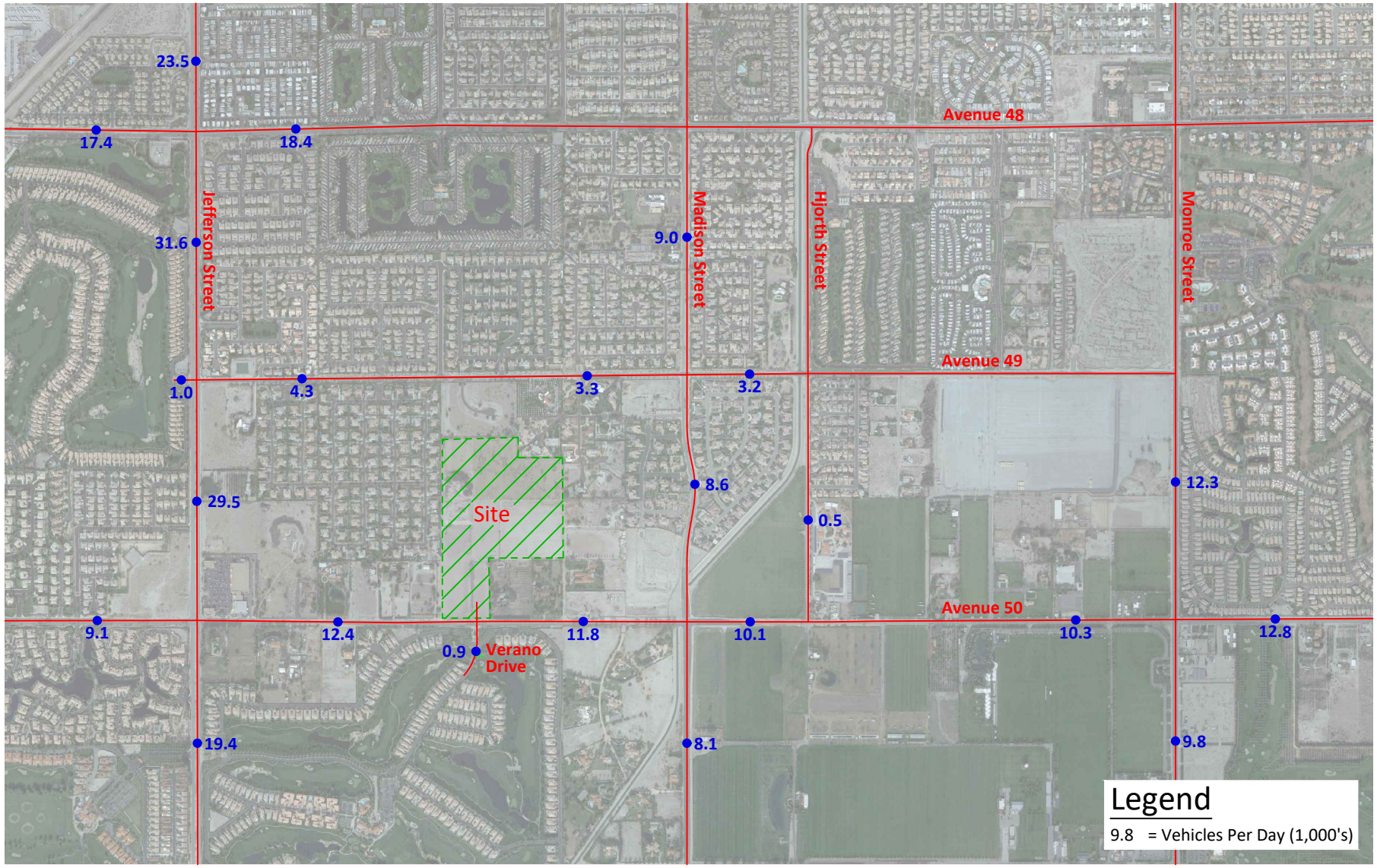

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Figure 17
Opening Year (2022) With Project Average Daily Traffic Volumes - Potential Maximum Density

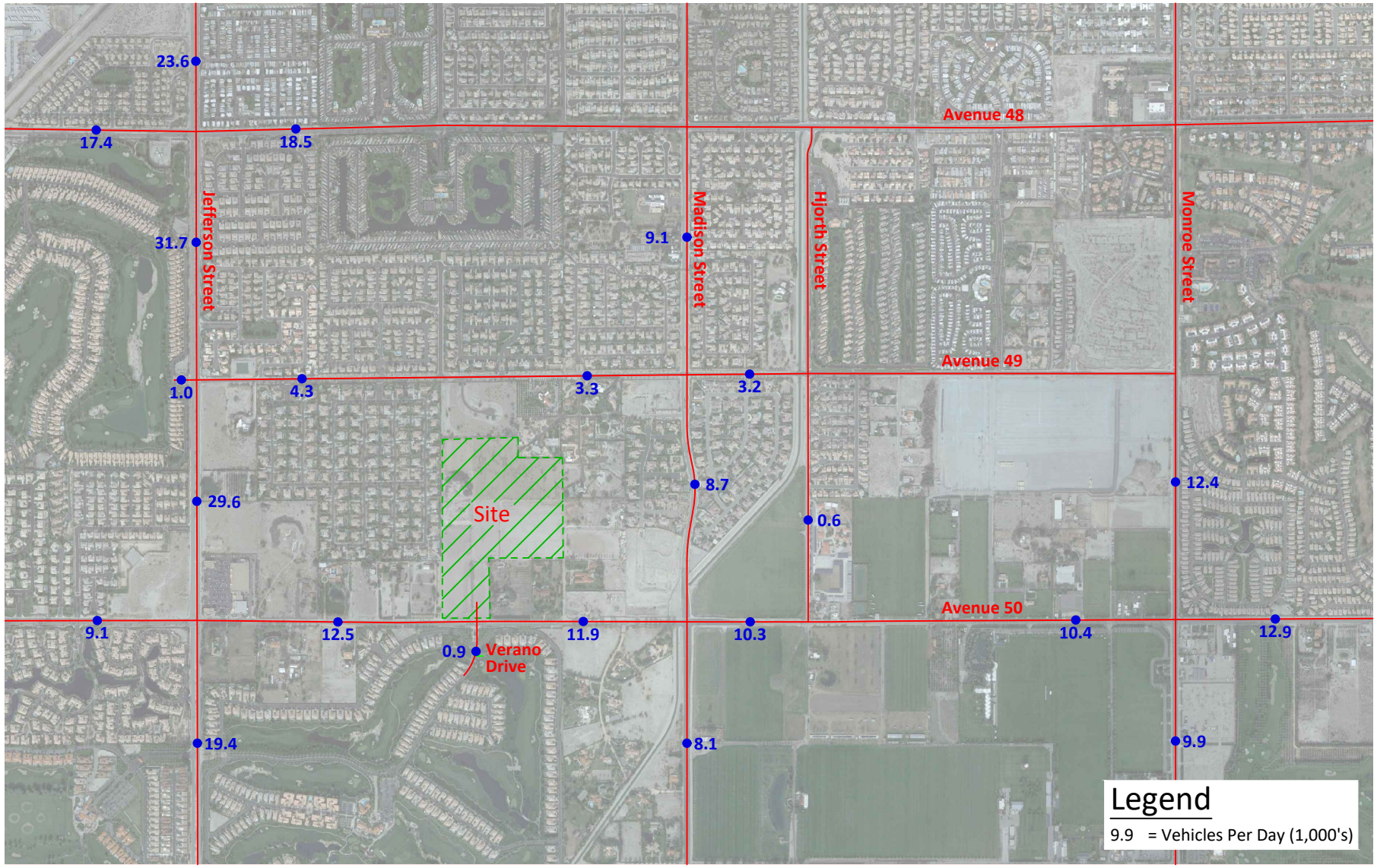

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Figure 18
Year 2040 Without Project Average Daily Traffic Volumes

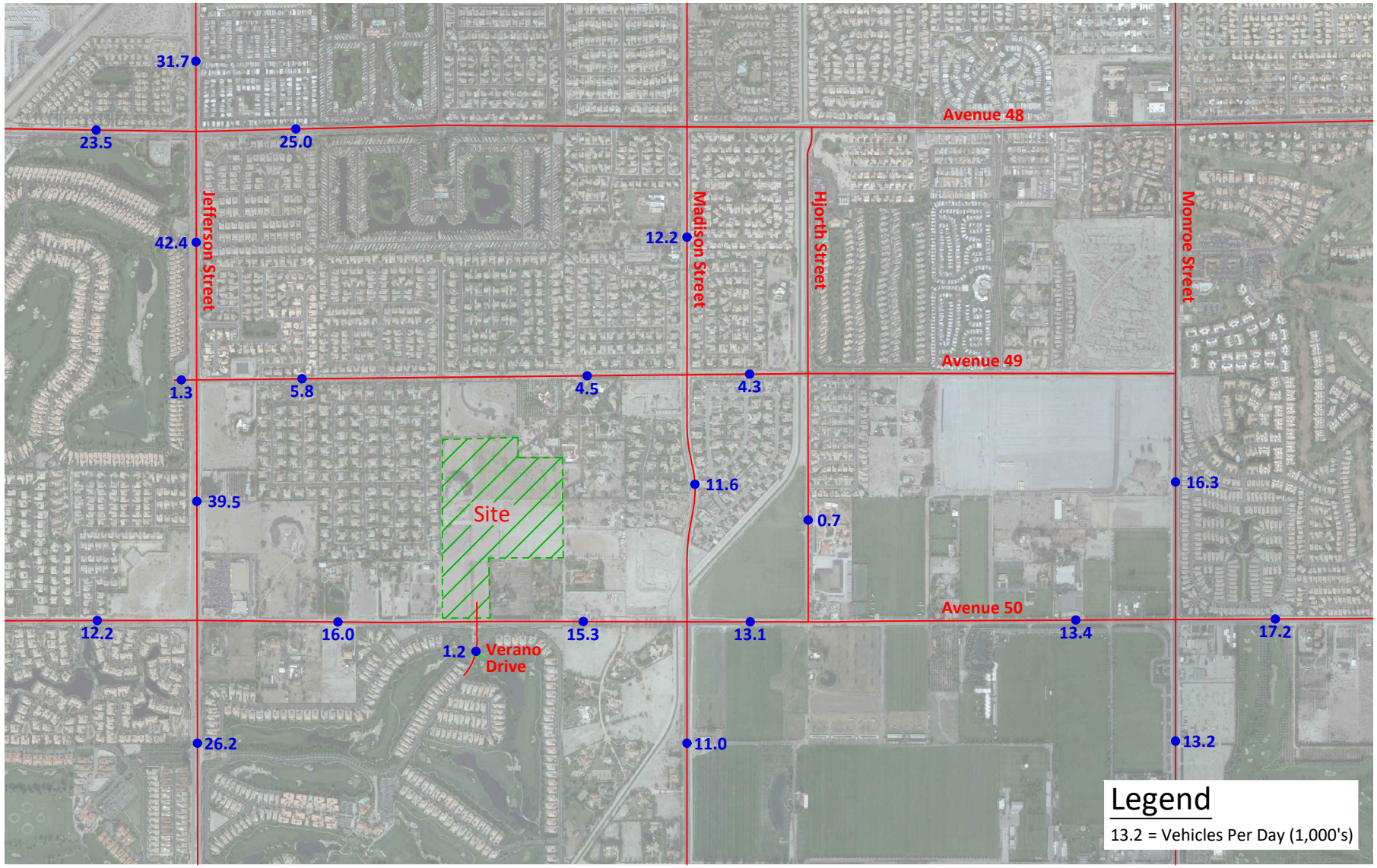

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Figure 19
Year 2040 With Project Average Daily Traffic Volumes - Proposed Project

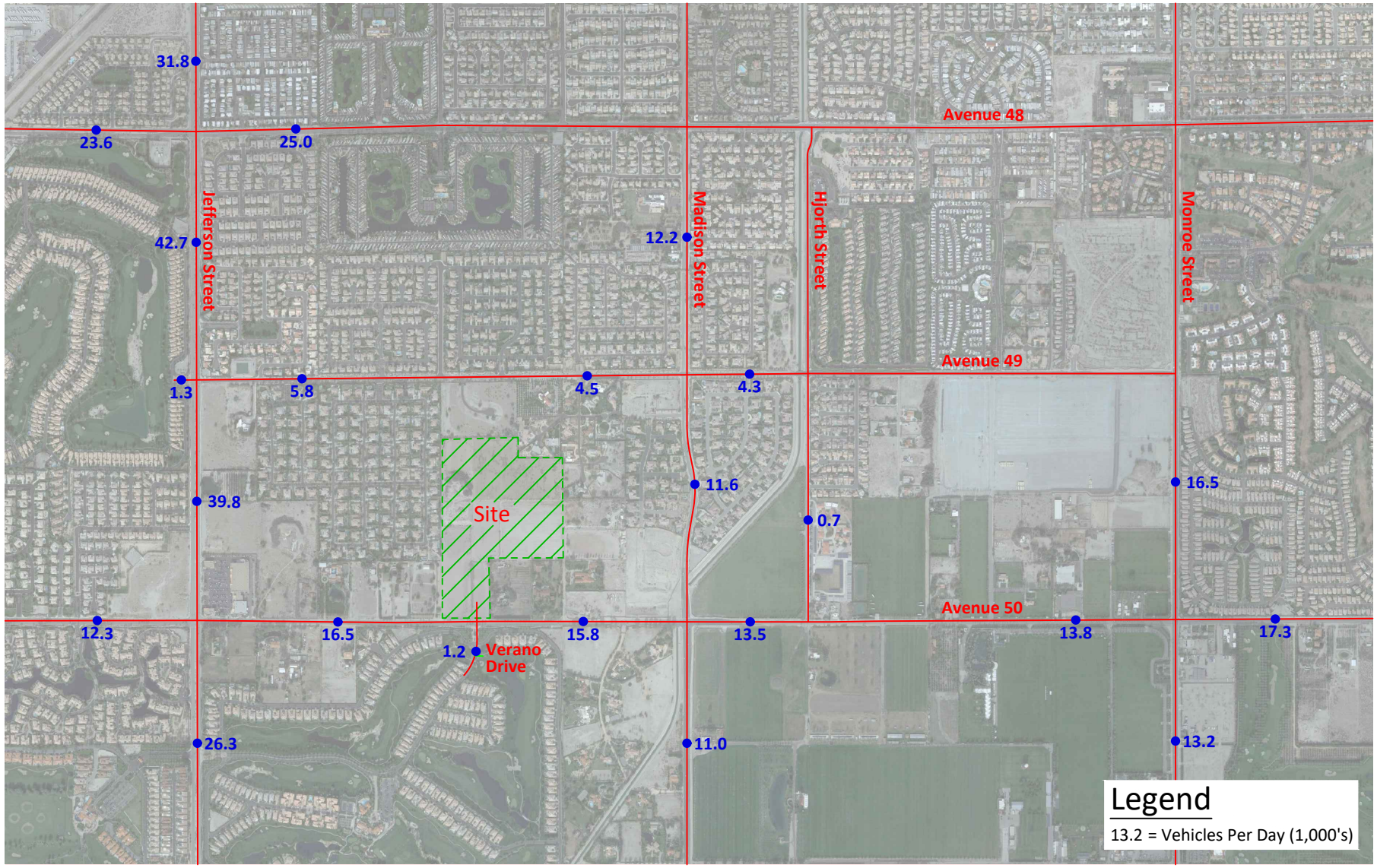

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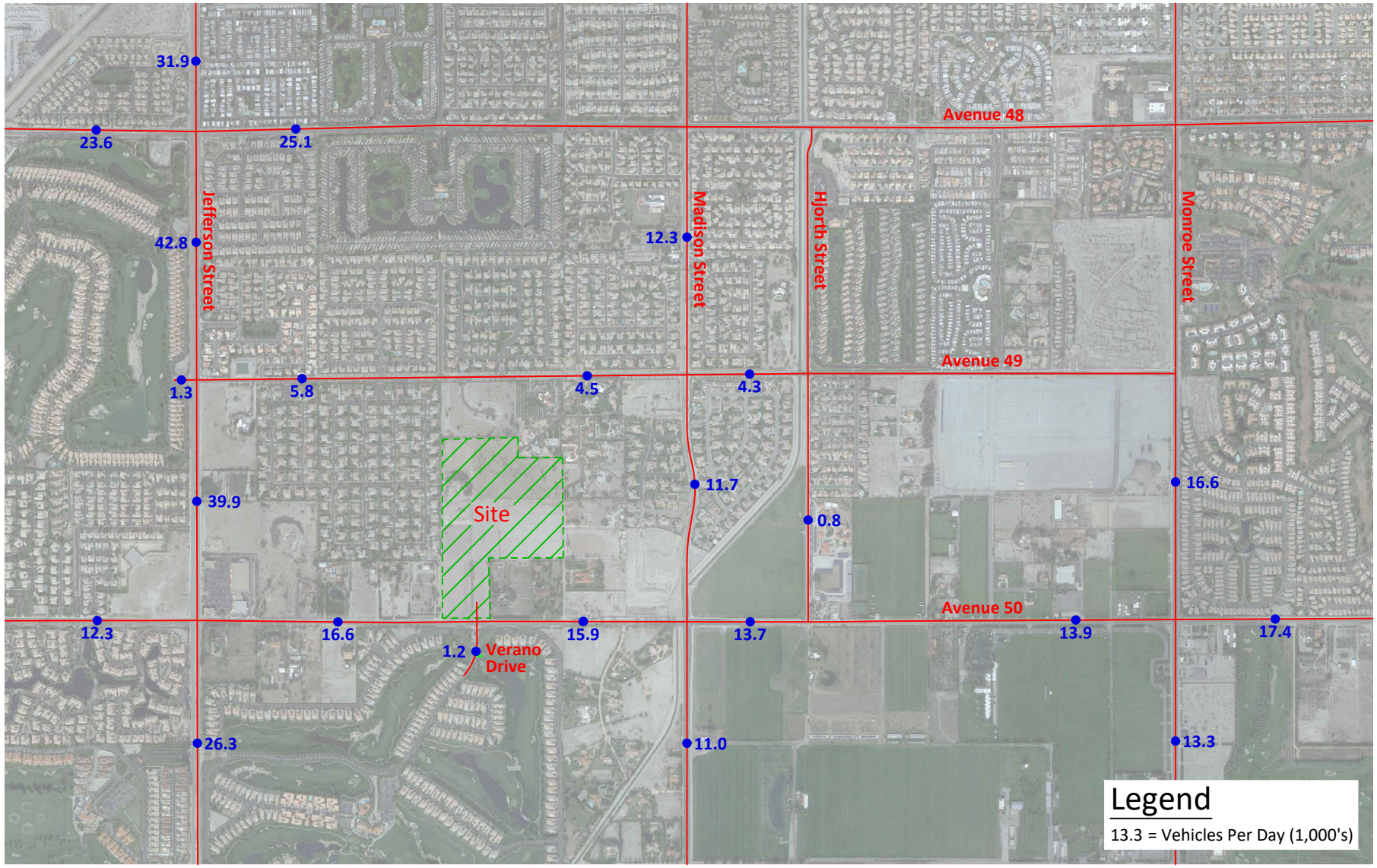
Figure 20
Year 2040 With Project Average Daily Traffic Volumes - Potential Maximum Density



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OVER 40 YEARS OF EXCELLENT SERVICE

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VI. VEHICLE MILES OF TRAVEL

A. Screening Criteria

The City of Indio has not adopted a vehicle miles traveled (VMT) policy. The City, however, occurs in the County of Riverside, which has an adopted VMT policy (as revised December 20, 2020). In order to analyze the project consistent with the requirements of SB 743 and local conditions, the proposed project was analyzed under the provisions of the County's policy. That policy includes a comprehensive analysis process that begins with a screening procedure for various types of projects. In the case of single-family homes, the policy's screening criteria has established a threshold of 110 dwelling units and Project GHG emissions less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e) as determined by a methodology acceptable to the Transportation Department (Figure 3 - Screening Criteria for Development Projects). Any project which proposes fewer than 110 units of single-family homes or that generates less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e), is presumed to have a less than significant impact on vehicle miles traveled.

In order for a project to increase the local vehicle miles of travel, it has to either generate or attract new trips that are greater than the average vehicle miles of travel for the average trip generator or attracter in the area.

In order for a trip generator to increase the local vehicle miles of travel, it must require that the vehicle trips emanating from it are greater in length than the average vehicle miles of travel for the average trip generator in the area. An example of a development that would increase the average local vehicle miles of travel is large housing developments miles outside of town.

In order for an attracter to increase the local vehicle miles of travel, it must draw trips in from outside the local area that are greater in length than the average vehicle miles of travel for the average trip attractor in the area. An example of a developments that would increase the average local vehicle miles of travel is a regional shopping.

B. Proposed Project

The proposed project is proposed to be developed with 103 single-family detached residential dwelling units.

This project site is considered a generator. The only way this project site could increase the local vehicle miles of travel, is if it was large and located miles outside of town. The project is relatively small and the project site is located in the middle of the residential area for the local area.

Any project which proposes fewer than 110 units of single-family homes or that generates less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e), is presumed to have a less than significant impact on vehicle miles traveled.

The proposed project is less than 110 units of single-family homes. The proposed project is projected to generate less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e). It is presumed to cause a less-than-significant impact to the local vehicle miles of travel.

No further analysis is required.

C. Potential Maximum Density

If the proposed project site was developed with the maximum density, it could be developed with 136 single-family detached residential dwelling units.

This project site is considered a generator. The only way this project site could increase the local vehicle miles of travel, is if it was large and located miles outside of town. The project is relatively small and the project site is located in the middle of the residential area for the local area.

Any project which proposes fewer than 110 units of single-family homes or that generates less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e), is presumed to have a less than significant impact on vehicle miles traveled.

The proposed project is projected to generate less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e). It is presumed to cause a less-than-significant impact to the local vehicle miles of travel.

No further analysis is required.

VII. RECOMMENDATIONS

A. Site Access

The project site is proposed to provide access to Avenue 50.

As is the case for any roadway design, the City of Indio should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

B. Roadway Improvements

1. On-Site

Site-specific circulation and access recommendations are depicted on Figure 21.

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at the project accesses should be reviewed with respect to standard California Department of Transportation/City of Indio sight distance standards at the time of preparation of final grading, landscaping, and street improvement plans.

The intersection of Verano Drive (NS) at Avenue 50 (EW) - #4 is projected to warrant a traffic signal for Year 2040 With Project traffic conditions. The traffic signal is not required for Opening Year (2022) With Project traffic conditions. The signal should be constructed by the project once it is warranted.

2. Off-Site

The following study area intersection is projected to be significantly impacted by the project for Year 2040 With Project - Proposed Project (see Table 21).

Verona Drive (NS) at:
Avenue 50 (EW) - #4

The following study area intersection is projected to be significantly impacted by the project for Year 2040 With Project - Potential Maximum Density (see Table 22).

Verona Drive (NS) at:
Avenue 50 (EW) - #4

The intersection of Hjorth Street (NS) at Avenue 50 (EW) - #7 is not significantly impacted by the project. The level of service failure and need for a traffic signal exist without and with the project. The project will be contributing towards these intersection improvements through the payment of Development Impact Fees (DIF).

As is the case for any roadway design, the City of Indio should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Table 21

Project Intersection Traffic Contribution
Proposed Project

Intersection	Peak Hour Level of Service								Significant Impact[1]			
	Opening Year (2022)				Year 2040							
	Without Project		With Project		Without Project		With Project		Opening Year (2022)		Year 2040	
	Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening
Jefferson Street (NS) at:												
Avenue 48 (EW) - #1	C	C	C	C	C	D	C	D	No	No	No	No
Avenue 49 (EW) - #2	B	B	B	B	C	B	C	B	No	No	No	No
Avenue 50 (EW) - #3	C	C	C	C	D	C	D	C	No	No	No	No
Verano Drive (NS) at:												
Avenue 50 (EW) - #4												
- Without Improvements	C	C	C	D	D	D	E	E	No	No	Yes	Yes
- With Improvements			C	C			A	A	No	No	No	No
Madison Street (NS) at:												
Avenue 49 (EW) - #5	B	B	B	B	C	B	C	B	No	No	No	No
Avenue 50 (EW) - #6	C	C	C	C	C	C	C	C	No	No	No	No
Hjorth Street (NS) at:												
Avenue 50 (EW) - #7												
- Without Improvements	D	C	D	C	F	D	F	D	No	No	No	No
- With Improvements					A	A	A	A	No	No	No	No
Monroe Street (NS) at:												
Avenue 50 (EW) - #8	C	B	C	B	C	C	C	C	No	No	No	No

[1] A significant impact for an intersection is defined as going from Level of Service D or better without project traffic to Level of Service E or F with the addition of project trips.

Table 22

Project Intersection Traffic Contribution
Potential Maximum Density

	Peak Hour Level of Service								Significant Impact[1]			
	Opening Year (2022)				Year 2040							
	Without Project		With Project		Without Project		With Project		Opening Year (2022)		Year 2040	
Intersection	Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening
Jefferson Street (NS) at:												
Avenue 48 (EW) - #1	C	C	C	C	C	D	C	D	No	No	No	No
Avenue 49 (EW) - #2	B	B	B	B	C	B	C	B	No	No	No	No
Avenue 50 (EW) - #3	C	C	C	C	D	C	D	C	No	No	No	No
Verano Drive (NS) at:												
Avenue 50 (EW) - #4												
- Without Improvements	C	C	D	D	D	D	E	F	No	No	Yes	Yes
- With Improvements			C	C			A	A	No	No	No	No
Madison Street (NS) at:												
Avenue 49 (EW) - #5	B	B	B	B	C	B	C	B	No	No	No	No
Avenue 50 (EW) - #6	C	C	C	C	C	C	C	C	No	No	No	No
Hjorth Street (NS) at:												
Avenue 50 (EW) - #7												
- Without Improvements	D	C	D	C	F	D	F	D	No	No	No	No
- With Improvements					A	A	A	A	No	No	No	No
Monroe Street (NS) at:												
Avenue 50 (EW) - #8	C	B	C	B	C	C	C	C	No	No	No	No

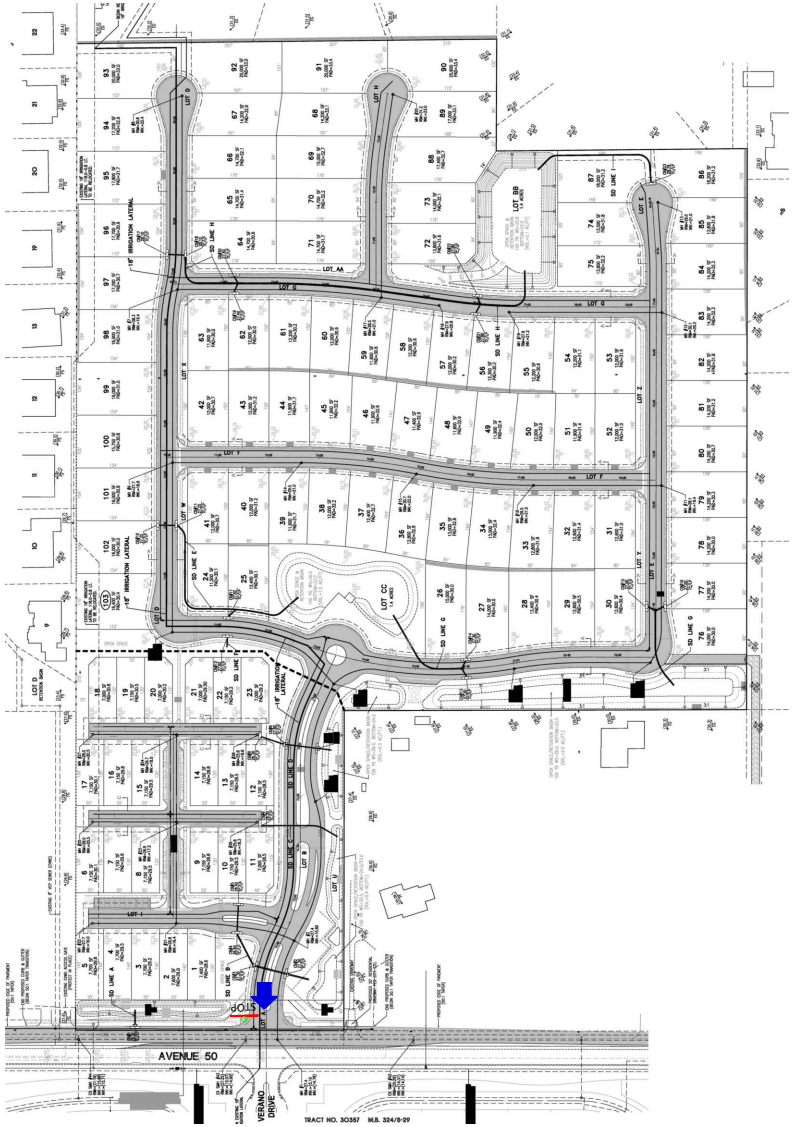
[1] A significant impact for an intersection is defined as going from Level of Service D or better without project traffic to Level of Service E or F with the addition of project trips.

Figure 21
Circulation Recommendations

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at the project accesses should be reviewed with respect to standard California Department of Transportation/City of Indio sight distance standards at the time of preparation of final grading, landscaping, and street improvement plans.

As is the case for any roadway design, the City of Indio should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.



Legend

STOP = Stop Sign

= Full Access Driveway

APPENDICES

Appendix A – **Glossary of Transportation Terms**

Appendix B – **Traffic Count Worksheets**

Appendix C – **Explanation and Calculation of Intersection Delay**

Appendix D – **Traffic Signal Warrant Worksheets**

APPENDIX A

GLOSSARY OF TRANSPORTATION TERMS

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

TRAFFIC COUNT WORKSHEETS

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Indio
N/S: Jefferson Street
E/W: Avenue 48
Weather: Clear

File Name : IND_Jefferson_Ave 48
Site Code : 1819257
Start Date : 4/17/2019
Page No : 1

Groups Printed- Total Volume

	Jefferson Street Southbound					Avenue 48 Westbound					Jefferson Street Northbound					Avenue 48 Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
06:00 AM	17	51	5	0	73	4	15	14	0	33	10	48	3	0	61	2	64	14	0	80	247
06:15 AM	19	65	8	0	92	2	28	8	0	38	12	55	9	0	76	6	57	26	0	89	295
06:30 AM	40	67	2	1	110	3	30	12	0	45	11	107	8	0	126	5	94	28	0	127	408
06:45 AM	44	99	17	0	160	1	19	19	0	39	23	141	19	0	183	14	105	33	0	152	534
Total	120	282	32	1	435	10	92	53	0	155	56	351	39	0	446	27	320	101	0	448	1484
07:00 AM	34	89	7	2	132	7	30	28	0	65	28	146	18	0	192	10	92	31	0	133	522
07:15 AM	56	124	3	0	183	7	52	27	0	86	23	113	18	1	155	13	135	45	0	193	617
07:30 AM	66	161	9	0	236	12	48	45	0	105	23	138	20	0	181	14	156	52	0	222	744
07:45 AM	76	162	14	1	253	4	60	26	0	90	39	169	20	0	228	15	157	39	0	211	782
Total	232	536	33	3	804	30	190	126	0	346	113	566	76	1	756	52	540	167	0	759	2665
08:00 AM	47	158	12	0	217	11	71	30	0	112	35	183	11	0	229	18	148	48	0	214	772
08:15 AM	82	180	7	0	269	7	62	31	0	100	28	145	17	0	190	10	120	49	0	179	738
08:30 AM	52	160	15	2	229	5	72	36	0	113	34	129	14	0	177	13	139	51	0	203	722
08:45 AM	74	179	12	0	265	8	61	36	0	105	27	142	8	0	177	20	141	48	0	209	756
Total	255	677	46	2	980	31	266	133	0	430	124	599	50	0	773	61	548	196	0	805	2988
09:00 AM	50	130	20	0	200	9	62	32	0	103	29	127	11	0	167	14	119	49	0	182	652
09:15 AM	63	159	14	1	237	8	62	49	0	119	36	126	17	0	179	10	93	56	1	160	695
09:30 AM	66	163	0	2	231	10	60	40	0	110	36	113	13	1	163	11	145	42	0	198	702
09:45 AM	80	200	11	1	292	8	47	44	0	99	38	143	16	0	197	12	91	45	0	148	736
Total	259	652	45	4	960	35	231	165	0	431	139	509	57	1	706	47	448	192	1	688	2785
10:00 AM	61	128	9	0	198	12	77	42	0	131	40	129	14	0	183	11	110	37	0	158	670
10:15 AM	76	181	20	2	279	13	71	52	0	136	44	135	12	0	191	11	102	36	0	149	755
10:30 AM	72	168	13	2	255	9	70	45	0	124	43	127	19	0	189	8	94	40	0	142	710
10:45 AM	75	206	11	5	297	13	74	60	0	147	33	198	14	0	245	14	100	50	0	164	853
Total	284	683	53	9	1029	47	292	199	0	538	160	589	59	0	808	44	406	163	0	613	2988
11:00 AM	74	165	17	1	257	10	77	70	0	157	42	157	13	0	212	11	98	65	0	174	800
11:15 AM	75	209	19	0	303	12	66	66	0	144	49	184	14	0	247	17	105	65	0	187	881
11:30 AM	74	133	10	2	219	8	78	58	0	144	36	149	15	0	200	7	86	35	0	128	691
11:45 AM	69	192	11	2	274	11	93	53	0	157	43	193	8	0	244	8	63	41	0	112	787
Total	292	699	57	5	1053	41	314	247	0	602	170	683	50	0	903	43	352	206	0	601	3159
12:00 PM	66	194	12	0	272	6	87	66	0	159	66	170	20	0	256	12	100	52	0	164	851
12:15 PM	98	165	12	0	275	12	87	64	0	163	51	164	13	0	228	9	99	64	0	172	838
12:30 PM	48	160	9	0	217	6	105	61	0	172	46	165	10	0	221	15	94	43	0	152	762
12:45 PM	79	147	13	0	239	7	103	81	0	191	59	206	17	0	282	11	104	51	0	166	878
Total	291	666	46	0	1003	31	382	272	0	685	222	705	60	0	987	47	397	210	0	654	3329
01:00 PM	67	165	12	0	244	9	97	85	1	192	56	188	15	0	259	20	96	36	0	152	847
01:15 PM	53	164	14	1	232	8	100	81	0	189	69	192	13	0	274	13	121	39	0	173	868

Counts Unlimited
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City of Indio
N/S: Jefferson Street
E/W: Avenue 48
Weather: Clear

File Name : IND_Jefferson_Ave 48
Site Code : 1819257
Start Date : 4/17/2019

Groups Printed- Total Volume

	Jefferson Street Southbound					Avenue 48 Westbound					Jefferson Street Northbound					Avenue 48 Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
01:30 PM	53	171	11	2	237	14	124	86	0	224	44	183	20	0	247	10	98	33	0	141	849
01:45 PM	53	194	18	0	265	10	110	82	0	202	54	195	11	0	260	7	96	39	0	142	869
Total	226	694	55	3	978	41	431	334	1	807	223	758	59	0	1040	50	411	147	0	608	3433
02:00 PM	60	160	15	1	236	4	111	64	0	179	53	161	15	0	229	4	104	51	0	159	803
02:15 PM	64	207	18	0	289	7	110	67	0	184	55	201	12	0	268	9	114	47	0	170	911
02:30 PM	62	177	18	0	257	9	145	76	0	230	55	164	16	0	235	10	103	45	0	158	880
02:45 PM	69	171	17	2	259	8	127	78	0	213	55	197	24	0	276	13	85	37	0	135	883
Total	255	715	68	3	1041	28	493	285	0	806	218	723	67	0	1008	36	406	180	0	622	3477
03:00 PM	65	190	17	1	273	16	155	80	0	251	50	181	11	0	242	13	84	63	0	160	926
03:15 PM	59	187	12	0	258	11	121	80	0	212	71	176	8	1	256	16	85	40	0	141	867
03:30 PM	57	221	18	0	296	6	115	87	0	208	48	187	19	0	254	13	115	39	0	167	925
03:45 PM	72	254	21	1	348	18	172	99	0	289	79	255	10	0	344	17	123	63	0	203	1184
Total	253	852	68	2	1175	51	563	346	0	960	248	799	48	1	1096	59	407	205	0	671	3902
04:00 PM	33	133	18	1	185	6	111	67	0	184	37	122	3	0	162	12	83	34	0	129	660
04:15 PM	55	184	17	0	256	8	131	80	0	219	77	200	8	0	285	14	94	34	0	142	902
04:30 PM	62	174	20	0	256	9	142	78	0	229	59	190	13	0	262	18	122	44	0	184	931
04:45 PM	62	150	10	0	222	6	137	78	0	221	53	186	9	0	248	18	97	31	0	146	837
Total	212	641	65	1	919	29	521	303	0	853	226	698	33	0	957	62	396	143	0	601	3330
05:00 PM	53	172	13	2	240	13	196	82	0	291	61	200	10	1	272	14	130	46	0	190	993
05:15 PM	59	151	11	1	222	12	145	72	0	229	79	183	11	0	273	13	117	46	0	176	900
05:30 PM	65	161	11	1	238	6	137	66	0	209	56	164	16	1	237	12	119	44	0	175	859
05:45 PM	54	138	14	0	206	13	145	54	0	212	74	163	13	2	252	8	126	46	0	180	850
Total	231	622	49	4	906	44	623	274	0	941	270	710	50	4	1034	47	492	182	0	721	3602
Grand Total	2910	7719	617	37	11283	418	4398	2737	1	7554	2169	7690	648	7	10514	575	5123	2092	1	7791	37142
Apprch %	25.8	68.4	5.5	0.3		5.5	58.2	36.2	0		20.6	73.1	6.2	0.1		7.4	65.8	26.9	0		
Total %	7.8	20.8	1.7	0.1	30.4	1.1	11.8	7.4	0	20.3	5.8	20.7	1.7	0	28.3	1.5	13.8	5.6	0	21	

Counts Unlimited
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City of Indio
N/S: Jefferson Street
E/W: Avenue 48
Weather: Clear

File Name : IND_Jefferson_Ave 48
Site Code : 1819257
Start Date : 4/17/2019
Page No : 3

	Jefferson Street Southbound					Avenue 48 Westbound					Jefferson Street Northbound					Avenue 48 Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	65	190	17	**1**	273	16	155	80	0	251	50	181	11	0	242	13	84	**63**	0	160	926
03:15 PM	59	187	12	0	258	11	121	80	0	212	71	176	8	**1**	256	16	85	40	0	141	867
03:30 PM	57	221	18	0	296	6	115	87	0	208	48	187	**19**	0	254	13	115	39	0	167	925
03:45 PM	**72**	**254**	**21**	1	**348**	**18**	**172**	**99**	0	**289**	**79**	**255**	10	0	**344**	**17**	**123**	63	0	**203**	**1184**
Total Volume	253	852	68	2	1175	51	563	346	0	960	248	799	48	1	1096	59	407	205	0	671	3902
% App. Total	21.5	72.5	5.8	0.2		5.3	58.6	36	0		22.6	72.9	4.4	0.1		8.8	60.7	30.6	0		
PHF	.878	.839	.810	.500	.844	.708	.818	.874	.000	.830	.785	.783	.632	.250	.797	.868	.827	.813	.000	.826	.824

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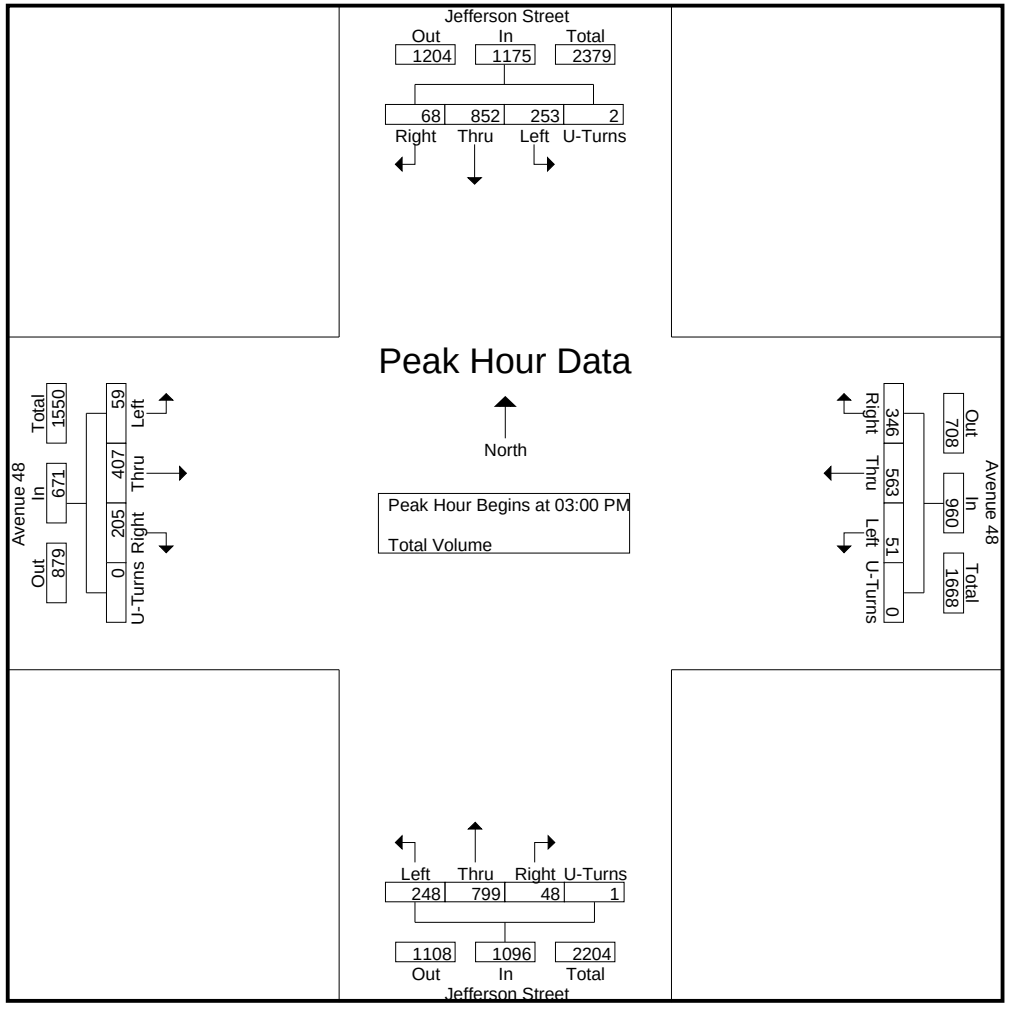
City of Indio
N/S: Jefferson Street
E/W: Avenue 48
Weather: Clear

File Name : IND_Jefferson_Ave 48
Site Code : 1819257
Start Date : 4/17/2019
Page No : 4



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City of Indio
N/S: Jefferson Street
E/W: Avenue 48
Weather: Clear

File Name : IND_Jefferson_Ave 48
Site Code : 1819257
Start Date : 4/17/2019
Page No : 5

	Jefferson Street Southbound					Avenue 48 Westbound					Jefferson Street Northbound					Avenue 48 Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	03:00 PM					04:30 PM					03:00 PM					07:15 AM					
+0 mins.	65	190	17	**1**	273	9	142	78	0	229	50	181	11	0	242	13	135	45	0	193	
+15 mins.	59	187	12	0	258	6	137	78	0	221	71	176	8	**1**	256	14	156	**52**	0	**222**	
+30 mins.	57	221	18	0	296	**13**	**196**	**82**	0	**291**	48	187	**19**	0	254	15	**157**	39	0	211	
+45 mins.	**72**	**254**	**21**	1	**348**	12	145	72	0	229	**79**	**255**	10	0	**344**	**18**	148	48	0	214	
Total Volume	253	852	68	2	1175	40	620	310	0	970	248	799	48	1	1096	60	596	184	0	840	
% App. Total	21.5	72.5	5.8	0.2		4.1	63.9	32	0		22.6	72.9	4.4	0.1		7.1	71	21.9	0		
PHF	.878	.839	.810	.500	.844	.769	.791	.945	.000	.833	.785	.783	.632	.250	.797	.833	.949	.885	.000	.946	

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City of Indio
N/S: Jefferson Street
E/W: Avenue 49
Weather: Clear

File Name : 01_IND_Jefferson_Ave 49 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Jefferson Street Southbound				Avenue 49 Westbound				Jefferson Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	11	206	7	224	14	2	68	84	9	167	4	180	3	0	5	8	496
07:15 AM	20	210	11	241	9	2	65	76	5	280	6	291	2	1	2	5	613
07:30 AM	26	223	12	261	8	4	66	78	4	219	9	232	2	2	5	9	580
07:45 AM	17	220	11	248	12	3	53	68	8	219	13	240	2	1	2	5	561
Total	74	859	41	974	43	11	252	306	26	885	32	943	9	4	14	27	2250
08:00 AM	25	235	15	275	15	0	55	70	7	198	9	214	2	1	4	7	566
08:15 AM	16	164	6	186	6	2	58	66	6	257	6	269	3	0	1	4	525
08:30 AM	15	168	11	194	10	4	31	45	3	194	9	206	2	0	2	4	449
08:45 AM	7	174	10	191	9	2	37	48	3	233	8	244	1	2	2	5	488
Total	63	741	42	846	40	8	181	229	19	882	32	933	8	3	9	20	2028
Grand Total	137	1600	83	1820	83	19	433	535	45	1767	64	1876	17	7	23	47	4278
Apprch %	7.5	87.9	4.6		15.5	3.6	80.9		2.4	94.2	3.4		36.2	14.9	48.9		
Total %	3.2	37.4	1.9	42.5	1.9	0.4	10.1	12.5	1.1	41.3	1.5	43.9	0.4	0.2	0.5	1.1	

	Jefferson Street Southbound				Avenue 49 Westbound				Jefferson Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	20	210	11	241	9	2	65	76	5	**280**	6	**291**	**2**	1	2	5	**613**
07:30 AM	**26**	223	12	261	8	**4**	**66**	**78**	4	219	9	232	2	**2**	**5**	**9**	580
07:45 AM	17	220	11	248	12	3	53	68	**8**	219	**13**	240	2	1	2	5	561
08:00 AM	25	**235**	**15**	**275**	**15**	0	55	70	7	198	9	214	2	1	4	7	566
Total Volume	88	888	49	1025	44	9	239	292	24	916	37	977	8	5	13	26	2320
% App. Total	8.6	86.6	4.8		15.1	3.1	81.8		2.5	93.8	3.8		30.8	19.2	50		
PHF	.846	.945	.817	.932	.733	.563	.905	.936	.750	.818	.712	.839	1.00	.625	.650	.722	.946

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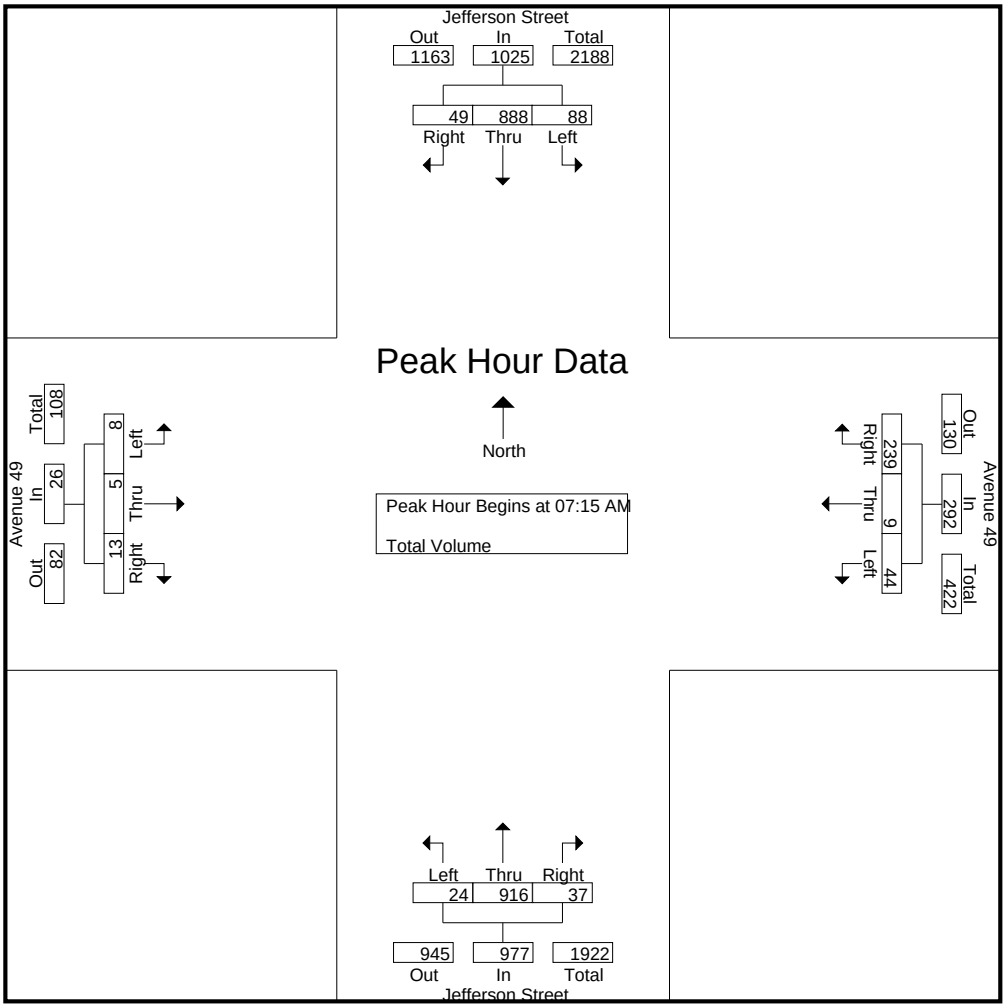
City of Indio
N/S: Jefferson Street
E/W: Avenue 49
Weather: Clear

File Name : 01_IND_Jefferson_Ave 49 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:15 AM				07:00 AM			
+0 mins.	20	210	11	241	**14**	2	**68**	**84**	5	**280**	6	**291**	**3**	0	**5**	8
+15 mins.	**26**	223	12	261	9	2	65	76	4	219	9	232	2	1	2	5
+30 mins.	17	220	11	248	8	**4**	66	78	**8**	219	**13**	240	2	**2**	5	**9**
+45 mins.	25	**235**	**15**	**275**	12	3	53	68	7	198	9	214	2	1	2	5
Total Volume	88	888	49	1025	43	11	252	306	24	916	37	977	9	4	14	27
% App. Total	8.6	86.6	4.8		14.1	3.6	82.4		2.5	93.8	3.8		33.3	14.8	51.9	
PHF	.846	.945	.817	.932	.768	.688	.926	.911	.750	.818	.712	.839	.750	.500	.700	.750

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City of Indio
N/S: Jefferson Street
E/W: Avenue 49
Weather: Clear

File Name : 01_IND_Jefferson_Ave 49 PM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Jefferson Street Southbound				Avenue 49 Westbound				Jefferson Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	43	314	7	364	7	0	38	45	5	244	14	263	3	2	5	10	682
04:15 PM	26	305	5	336	8	1	22	31	3	233	7	243	5	5	5	15	625
04:30 PM	37	265	8	310	5	0	20	25	3	236	15	254	0	4	2	6	595
04:45 PM	32	281	3	316	8	2	19	29	3	227	13	243	2	0	6	8	596
Total	138	1165	23	1326	28	3	99	130	14	940	49	1003	10	11	18	39	2498
05:00 PM	33	226	4	263	8	0	22	30	4	201	11	216	2	2	4	8	517
05:15 PM	39	303	8	350	6	1	34	41	5	196	17	218	3	1	1	5	614
05:30 PM	45	253	4	302	8	0	26	34	8	166	15	189	1	3	4	8	533
05:45 PM	33	233	6	272	11	0	23	34	5	176	8	189	3	1	1	5	500
Total	150	1015	22	1187	33	1	105	139	22	739	51	812	9	7	10	26	2164
Grand Total	288	2180	45	2513	61	4	204	269	36	1679	100	1815	19	18	28	65	4662
Apprch %	11.5	86.7	1.8		22.7	1.5	75.8		2	92.5	5.5		29.2	27.7	43.1		
Total %	6.2	46.8	1	53.9	1.3	0.1	4.4	5.8	0.8	36	2.1	38.9	0.4	0.4	0.6	1.4	

	Jefferson Street Southbound				Avenue 49 Westbound				Jefferson Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**43**	**314**	7	**364**	7	0	**38**	**45**	**5**	**244**	14	**263**	3	2	5	10	**682**
04:15 PM	26	305	5	336	**8**	1	22	31	3	233	7	243	**5**	**5**	5	**15**	625
04:30 PM	37	265	**8**	310	5	0	20	25	3	236	**15**	254	0	4	2	6	595
04:45 PM	32	281	3	316	8	**2**	19	29	3	227	13	243	2	0	**6**	8	596
Total Volume	138	1165	23	1326	28	3	99	130	14	940	49	1003	10	11	18	39	2498
% App. Total	10.4	87.9	1.7		21.5	2.3	76.2		1.4	93.7	4.9		25.6	28.2	46.2		
PHF	.802	.928	.719	.911	.875	.375	.651	.722	.700	.963	.817	.953	.500	.550	.750	.650	.916

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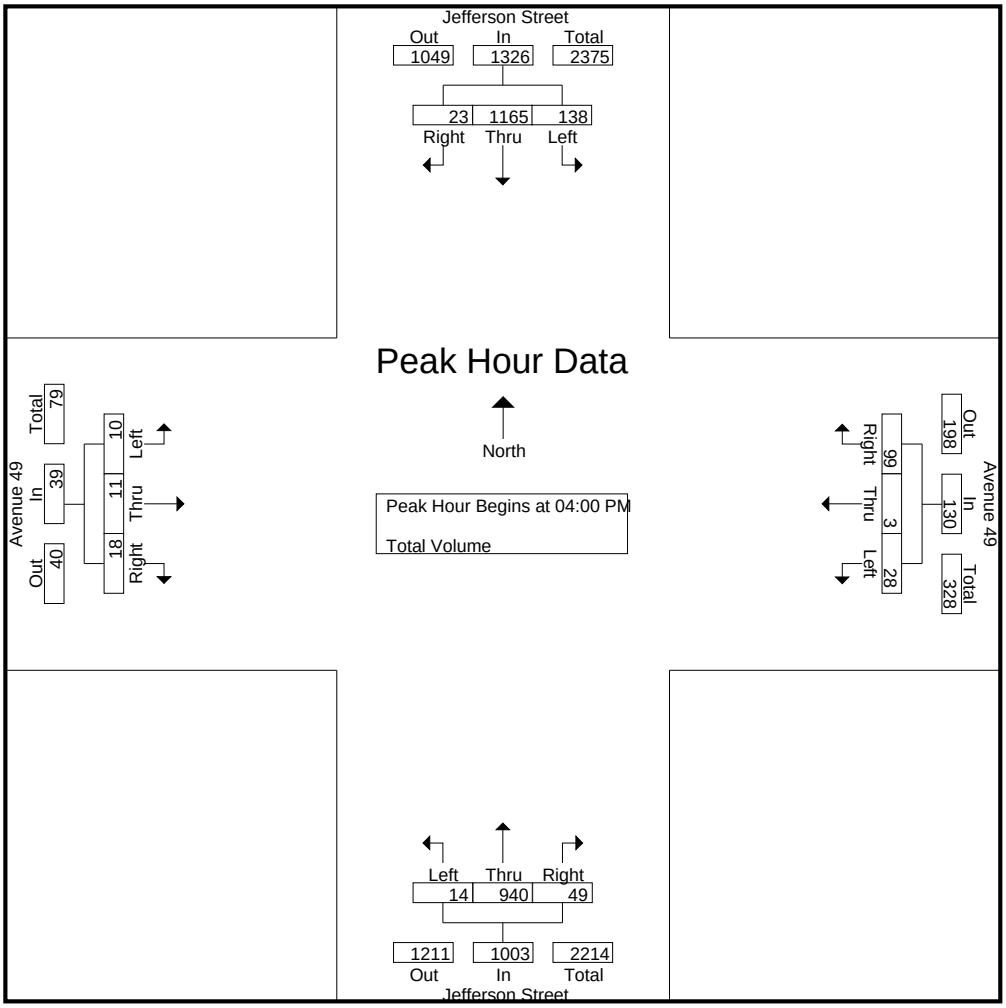
City of Indio
N/S: Jefferson Street
E/W: Avenue 49
Weather: Clear

File Name : 01_IND_Jefferson_Ave 49 PM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:00 PM				04:00 PM			
+0 mins.	**43**	**314**	7	**364**	8	0	22	30	**5**	**244**	14	**263**	3	2	5	10
+15 mins.	26	305	5	336	6	**1**	**34**	**41**	3	233	7	243	**5**	**5**	5	**15**
+30 mins.	37	265	**8**	310	8	0	26	34	3	236	**15**	254	0	4	2	6
+45 mins.	32	281	3	316	**11**	0	23	34	3	227	13	243	2	0	**6**	8
Total Volume	138	1165	23	1326	33	1	105	139	14	940	49	1003	10	11	18	39
% App. Total	10.4	87.9	1.7		23.7	0.7	75.5		1.4	93.7	4.9		25.6	28.2	46.2	
PHF	.802	.928	.719	.911	.750	.250	.772	.848	.700	.963	.817	.953	.500	.550	.750	.650

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City of Indio
N/S: Jefferson Street
E/W: Avenue 50
Weather: Clear

File Name : 02_IND_Jefferson_Ave 50 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Jefferson Street Southbound				Avenue 50 Westbound				Jefferson Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	90	105	204	16	82	35	133	21	85	6	112	56	39	4	99	548
07:15 AM	11	108	69	188	11	62	45	118	17	135	2	154	61	66	10	137	597
07:30 AM	22	132	62	216	13	66	50	129	11	100	2	113	65	63	9	137	595
07:45 AM	21	119	70	210	19	79	39	137	9	119	6	134	46	31	12	89	570
Total	63	449	306	818	59	289	169	517	58	439	16	513	228	199	35	462	2310
08:00 AM	22	100	103	225	20	77	36	133	17	98	3	118	64	63	8	135	611
08:15 AM	14	99	30	143	20	45	35	100	13	149	3	165	57	77	11	145	553
08:30 AM	16	106	26	148	24	39	39	102	10	110	3	123	50	14	6	70	443
08:45 AM	17	102	39	158	30	40	31	101	8	156	6	170	32	14	13	59	488
Total	69	407	198	674	94	201	141	436	48	513	15	576	203	168	38	409	2095
Grand Total	132	856	504	1492	153	490	310	953	106	952	31	1089	431	367	73	871	4405
Apprch %	8.8	57.4	33.8		16.1	51.4	32.5		9.7	87.4	2.8		49.5	42.1	8.4		
Total %	3	19.4	11.4	33.9	3.5	11.1	7	21.6	2.4	21.6	0.7	24.7	9.8	8.3	1.7	19.8	

	Jefferson Street Southbound				Avenue 50 Westbound				Jefferson Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	11	108	69	188	11	62	45	118	**17**	**135**	2	**154**	61	**66**	10	**137**	597
07:30 AM	**22**	**132**	62	216	13	66	**50**	129	11	100	2	113	**65**	63	9	137	595
07:45 AM	21	119	70	210	19	**79**	39	**137**	9	119	**6**	134	46	31	**12**	89	570
08:00 AM	22	100	**103**	**225**	**20**	77	36	133	17	98	3	118	64	63	8	135	**611**
Total Volume	76	459	304	839	63	284	170	517	54	452	13	519	236	223	39	498	2373
% App. Total	9.1	54.7	36.2		12.2	54.9	32.9		10.4	87.1	2.5		47.4	44.8	7.8		
PHF	.864	.869	.738	.932	.788	.899	.850	.943	.794	.837	.542	.843	.908	.845	.813	.909	.971

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City of Indio
N/S: Jefferson Street
E/W: Avenue 50
Weather: Clear

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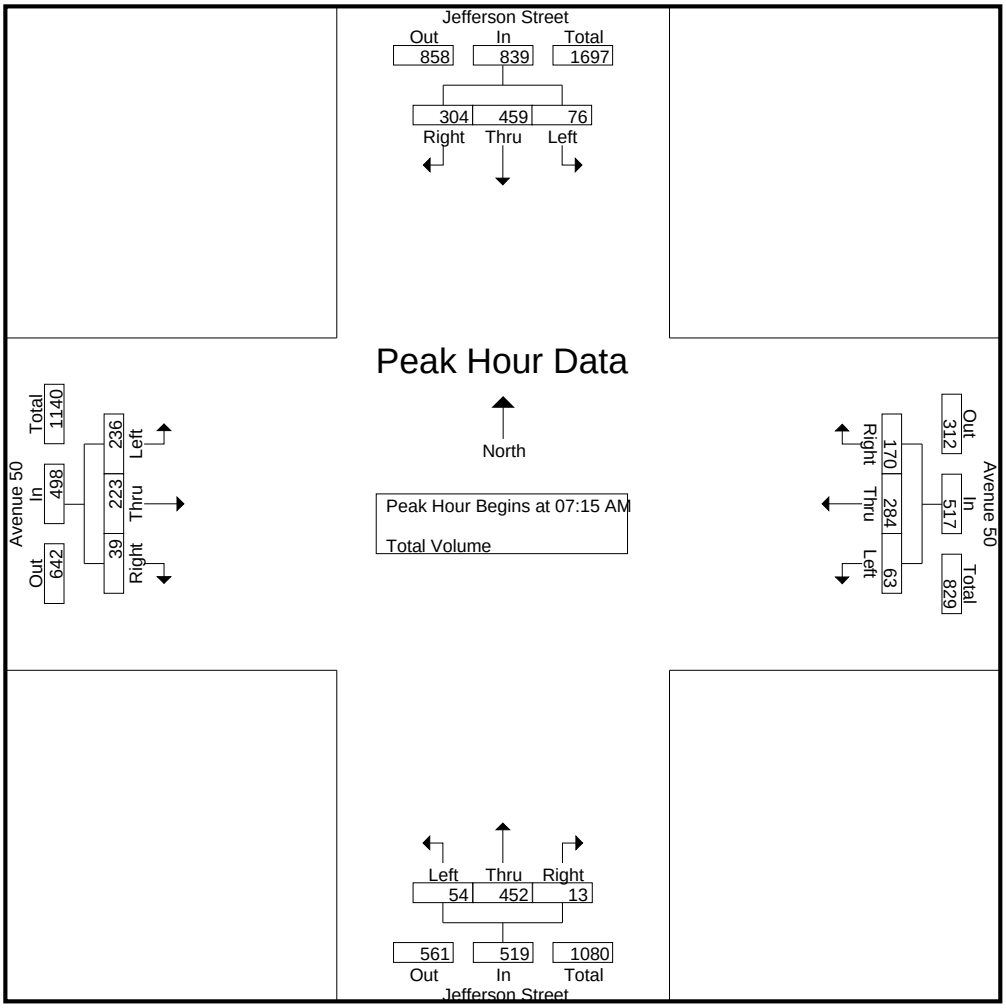
Site Code : 07520184
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				08:00 AM				07:30 AM			
+0 mins.	11	108	69	188	16	**82**	35	133	**17**	98	3	118	**65**	63	9	137
+15 mins.	**22**	**132**	62	216	11	62	45	118	13	149	3	165	46	31	**12**	89
+30 mins.	21	119	70	210	13	66	**50**	129	10	110	3	123	64	63	8	135
+45 mins.	22	100	**103**	**225**	**19**	79	39	**137**	8	**156**	**6**	**170**	57	**77**	11	**145**
Total Volume	76	459	304	839	59	289	169	517	48	513	15	576	232	234	40	506
% App. Total	9.1	54.7	36.2		11.4	55.9	32.7		8.3	89.1	2.6		45.8	46.2	7.9	
PHF	.864	.869	.738	.932	.776	.881	.845	.943	.706	.822	.625	.847	.892	.760	.833	.872

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City of Indio
N/S: Jefferson Street
E/W: Avenue 50
Weather: Clear

File Name : 02_IND_Jefferson_Ave 50 PM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Jefferson Street Southbound				Avenue 50 Westbound				Jefferson Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	58	171	38	267	35	48	39	122	12	142	16	170	47	28	3	78	637
04:15 PM	60	183	47	290	32	45	41	118	9	137	15	161	43	27	1	71	640
04:30 PM	50	130	32	212	30	52	41	123	9	153	22	184	40	29	7	76	595
04:45 PM	58	159	42	259	37	45	48	130	12	133	14	159	36	27	5	68	616
Total	226	643	159	1028	134	190	169	493	42	565	67	674	166	111	16	293	2488
05:00 PM	57	133	35	225	39	52	51	142	16	116	12	144	30	26	6	62	573
05:15 PM	53	178	31	262	27	58	26	111	4	109	12	125	37	31	5	73	571
05:30 PM	51	137	39	227	23	47	25	95	13	102	18	133	39	29	3	71	526
05:45 PM	45	122	36	203	34	43	30	107	10	118	15	143	25	27	3	55	508
Total	206	570	141	917	123	200	132	455	43	445	57	545	131	113	17	261	2178
Grand Total	432	1213	300	1945	257	390	301	948	85	1010	124	1219	297	224	33	554	4666
Apprch %	22.2	62.4	15.4		27.1	41.1	31.8		7	82.9	10.2		53.6	40.4	6		
Total %	9.3	26	6.4	41.7	5.5	8.4	6.5	20.3	1.8	21.6	2.7	26.1	6.4	4.8	0.7	11.9	

	Jefferson Street Southbound				Avenue 50 Westbound				Jefferson Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	58	171	38	267	35	48	39	122	**12**	142	16	170	**47**	28	3	**78**	637
04:15 PM	**60**	**183**	**47**	**290**	32	45	41	118	9	137	15	161	43	27	1	71	**640**
04:30 PM	50	130	32	212	30	**52**	41	123	9	**153**	**22**	**184**	40	**29**	**7**	76	595
04:45 PM	58	159	42	259	**37**	45	**48**	**130**	12	133	14	159	36	27	5	68	616
Total Volume	226	643	159	1028	134	190	169	493	42	565	67	674	166	111	16	293	2488
% App. Total	22	62.5	15.5		27.2	38.5	34.3		6.2	83.8	9.9		56.7	37.9	5.5		
PHF	.942	.878	.846	.886	.905	.913	.880	.948	.875	.923	.761	.916	.883	.957	.571	.939	.972

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City of Indio
N/S: Jefferson Street
E/W: Avenue 50
Weather: Clear

File Name : 02_IND_Jefferson_Ave 50 PM
Site Code : 07520184
Start Date : 3/12/2020
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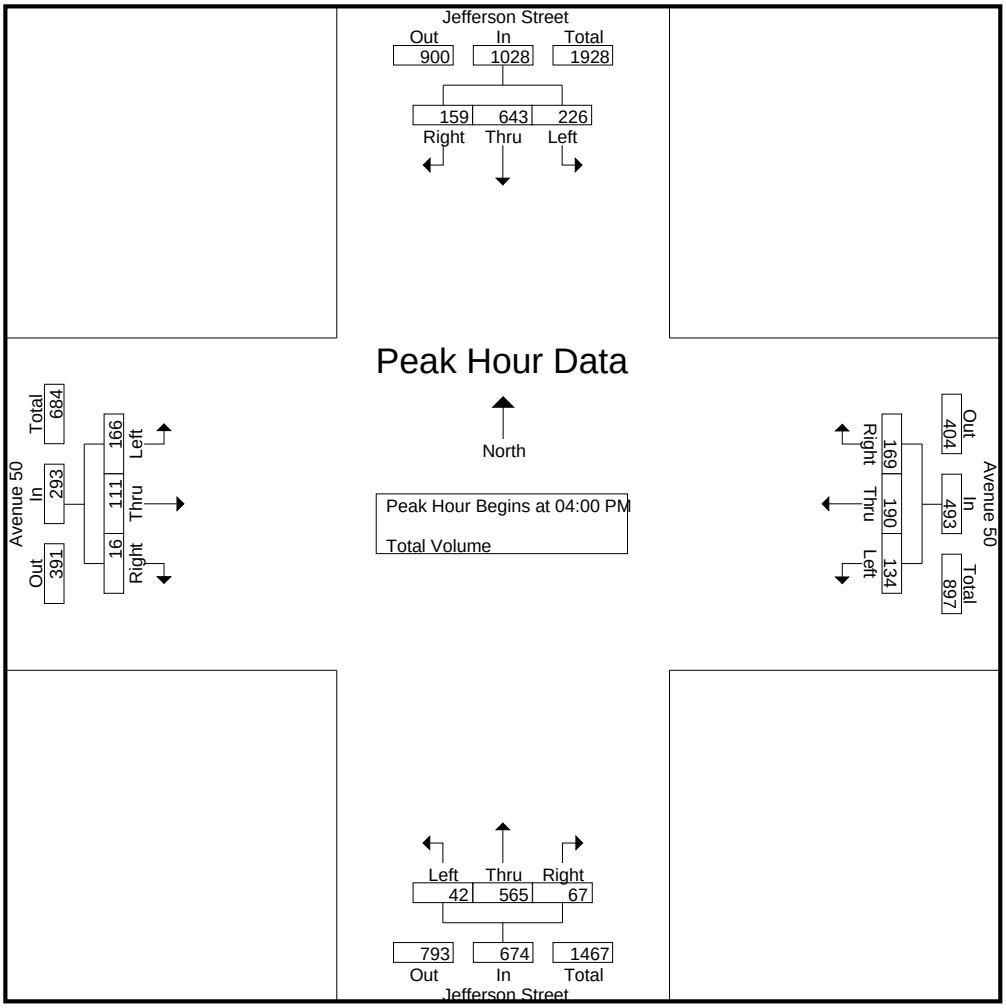

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:00 PM				04:00 PM			
+0 mins.	58	171	38	267	32	45	41	118	**12**	142	16	170	**47**	28	3	**78**
+15 mins.	**60**	**183**	**47**	**290**	30	**52**	41	123	9	137	15	161	43	27	1	71
+30 mins.	50	130	32	212	37	45	48	130	9	**153**	**22**	**184**	40	**29**	**7**	76
+45 mins.	58	159	42	259	**39**	52	**51**	**142**	12	133	14	159	36	27	5	68
Total Volume	226	643	159	1028	138	194	181	513	42	565	67	674	166	111	16	293
% App. Total	22	62.5	15.5		26.9	37.8	35.3		6.2	83.8	9.9		56.7	37.9	5.5	
PHF	.942	.878	.846	.886	.885	.933	.887	.903	.875	.923	.761	.916	.883	.957	.571	.939

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City of Indio
N/S: Verano Drive
E/W: Avenue 50
Weather: Clear

File Name : 03_IND_Verano_Ave 50 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Avenue 50 Westbound			Verano Drive Northbound			Avenue 50 Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	1	140	141	2	1	3	53	1	54	198
07:15 AM	2	128	130	1	1	2	63	1	64	196
07:30 AM	1	132	133	4	0	4	81	1	82	219
07:45 AM	3	144	147	1	1	2	60	1	61	210
Total	7	544	551	8	3	11	257	4	261	823
08:00 AM	1	117	118	4	0	4	80	2	82	204
08:15 AM	0	102	102	3	1	4	76	1	77	183
08:30 AM	1	97	98	4	0	4	38	1	39	141
08:45 AM	1	80	81	5	1	6	52	3	55	142
Total	3	396	399	16	2	18	246	7	253	670
Grand Total	10	940	950	24	5	29	503	11	514	1493
Apprch %	1.1	98.9		82.8	17.2		97.9	2.1		
Total %	0.7	63	63.6	1.6	0.3	1.9	33.7	0.7	34.4	

	Avenue 50 Westbound			Verano Drive Northbound			Avenue 50 Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	2	128	130	1	**1**	2	63	1	64	196
07:30 AM	1	132	133	**4**	0	**4**	**81**	1	**82**	**219**
07:45 AM	**3**	**144**	**147**	1	1	2	60	1	61	210
08:00 AM	1	117	118	4	0	4	80	**2**	82	204
Total Volume	7	521	528	10	2	12	284	5	289	829
% App. Total	1.3	98.7		83.3	16.7		98.3	1.7		
PHF	.583	.905	.898	.625	.500	.750	.877	.625	.881	.946

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City of Indio
N/S: Verano Drive
E/W: Avenue 50
Weather: Clear

File Name : 03_IND_Verano_Ave 50 AM
Site Code : 07520184
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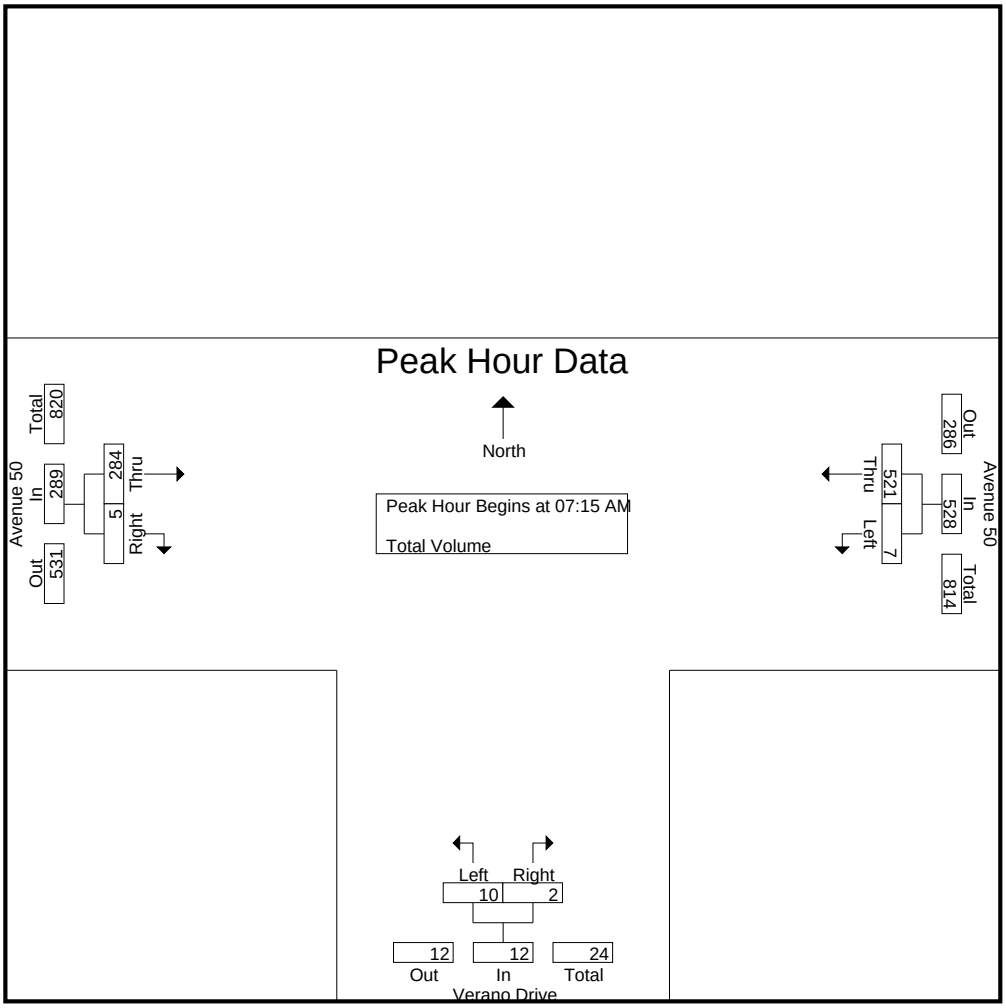

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:30 AM		
+0 mins.	1	140	141	4	0	4	**81**	1	**82**
+15 mins.	2	128	130	3	**1**	4	60	1	61
+30 mins.	1	132	133	4	0	4	80	**2**	82
+45 mins.	**3**	**144**	**147**	**5**	1	**6**	76	1	77
Total Volume	7	544	551	16	2	18	297	5	302
% App. Total	1.3	98.7		88.9	11.1		98.3	1.7	
PHF	.583	.944	.937	.800	.500	.750	.917	.625	.921

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City of Indio
N/S: Verano Drive
E/W: Avenue 50
Weather: Clear

File Name : 03_IND_Verano_Ave 50 PM
Site Code : 07520184
Start Date : 3/12/2020
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Groups Printed- Total Volume

	Avenue 50 Westbound			Verano Drive Northbound			Avenue 50 Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	2	99	101	3	2	5	112	6	118	224
04:15 PM	6	92	98	4	1	5	111	9	120	223
04:30 PM	0	118	118	2	5	7	102	9	111	236
04:45 PM	1	107	108	4	0	4	100	9	109	221
Total	9	416	425	13	8	21	425	33	458	904
05:00 PM	1	105	106	0	1	1	94	0	94	201
05:15 PM	0	94	94	3	0	3	106	4	110	207
05:30 PM	1	73	74	2	1	3	91	2	93	170
05:45 PM	0	76	76	2	2	4	97	2	99	179
Total	2	348	350	7	4	11	388	8	396	757
Grand Total	11	764	775	20	12	32	813	41	854	1661
Apprch %	1.4	98.6		62.5	37.5		95.2	4.8		
Total %	0.7	46	46.7	1.2	0.7	1.9	48.9	2.5	51.4	

	Avenue 50 Westbound			Verano Drive Northbound			Avenue 50 Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	2	99	101	3	2	5	**112**	6	118	224
04:15 PM	**6**	92	98	**4**	1	5	111	**9**	**120**	223
04:30 PM	0	**118**	**118**	2	**5**	**7**	102	9	111	**236**
04:45 PM	1	107	108	4	0	4	100	9	109	221
Total Volume	9	416	425	13	8	21	425	33	458	904
% App. Total	2.1	97.9		61.9	38.1		92.8	7.2		
PHF	.375	.881	.900	.813	.400	.750	.949	.917	.954	.958

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City of Indio
N/S: Verano Drive
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Weather: Clear

File Name : 03_IND_Verano_Ave 50 PM
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Start Date : 3/12/2020
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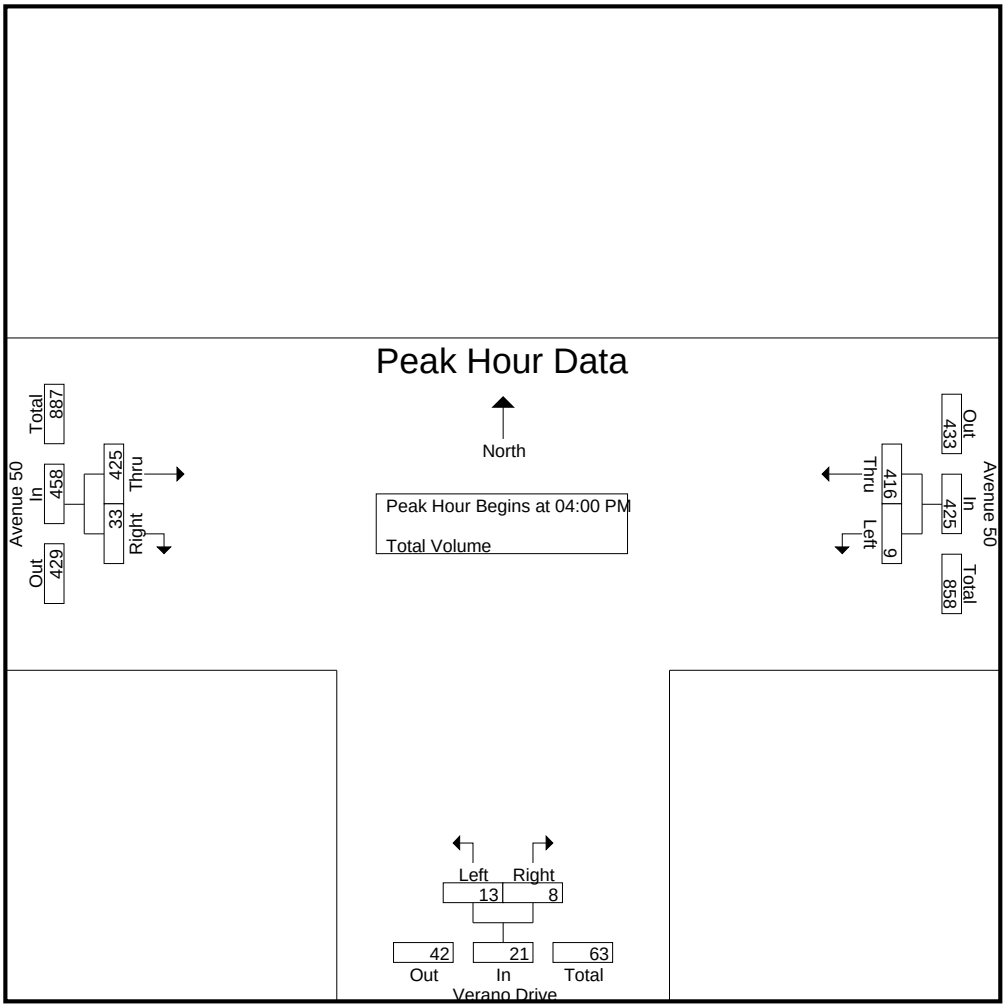

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM			04:00 PM			04:00 PM		
+0 mins.	**6**	92	98	3	2	5	**112**	6	118
+15 mins.	0	**118**	**118**	**4**	1	5	111	**9**	**120**
+30 mins.	1	107	108	2	**5**	**7**	102	9	111
+45 mins.	1	105	106	4	0	4	100	9	109
Total Volume	8	422	430	13	8	21	425	33	458
% App. Total	1.9	98.1		61.9	38.1		92.8	7.2	
PHF	.333	.894	.911	.813	.400	.750	.949	.917	.954

Counts Unlimited
PO Box 1178
Corona, CA 92878
951-268-6268

City of Indio
N/S: Madison Street
E/W: Avenue 49
Weather: Clear

File Name : 04_IND_Madison_Ave 49 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Madison Street Southbound				Avenue 49 Westbound				Madison Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	57	6	67	1	35	7	43	4	55	0	59	9	10	5	24	193
07:15 AM	9	53	6	68	3	26	5	34	3	58	1	62	9	9	4	22	186
07:30 AM	10	60	4	74	6	31	13	50	13	52	0	65	6	6	7	19	208
07:45 AM	9	77	7	93	11	31	5	47	3	62	1	66	9	16	5	30	236
Total	32	247	23	302	21	123	30	174	23	227	2	252	33	41	21	95	823
08:00 AM	11	61	7	79	4	21	8	33	9	55	2	66	2	9	1	12	190
08:15 AM	7	40	3	50	2	21	10	33	11	60	2	73	4	14	3	21	177
08:30 AM	4	47	6	57	1	22	4	27	18	53	1	72	4	12	2	18	174
08:45 AM	5	58	8	71	4	22	8	34	9	49	1	59	4	13	2	19	183
Total	27	206	24	257	11	86	30	127	47	217	6	270	14	48	8	70	724
Grand Total	59	453	47	559	32	209	60	301	70	444	8	522	47	89	29	165	1547
Apprch %	10.6	81	8.4		10.6	69.4	19.9		13.4	85.1	1.5		28.5	53.9	17.6		
Total %	3.8	29.3	3	36.1	2.1	13.5	3.9	19.5	4.5	28.7	0.5	33.7	3	5.8	1.9	10.7	

	Madison Street Southbound				Avenue 49 Westbound				Madison Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	57	6	67	1	**35**	7	43	4	55	0	59	**9**	10	5	24	193
07:15 AM	9	53	6	68	3	26	5	34	3	58	**1**	62	9	9	4	22	186
07:30 AM	**10**	60	4	74	6	31	**13**	**50**	**13**	52	0	65	6	6	**7**	19	208
07:45 AM	9	**77**	**7**	**93**	**11**	31	5	47	3	**62**	1	**66**	9	**16**	5	**30**	**236**
Total Volume	32	247	23	302	21	123	30	174	23	227	2	252	33	41	21	95	823
% App. Total	10.6	81.8	7.6		12.1	70.7	17.2		9.1	90.1	0.8		34.7	43.2	22.1		
PHF	.800	.802	.821	.812	.477	.879	.577	.870	.442	.915	.500	.955	.917	.641	.750	.792	.872

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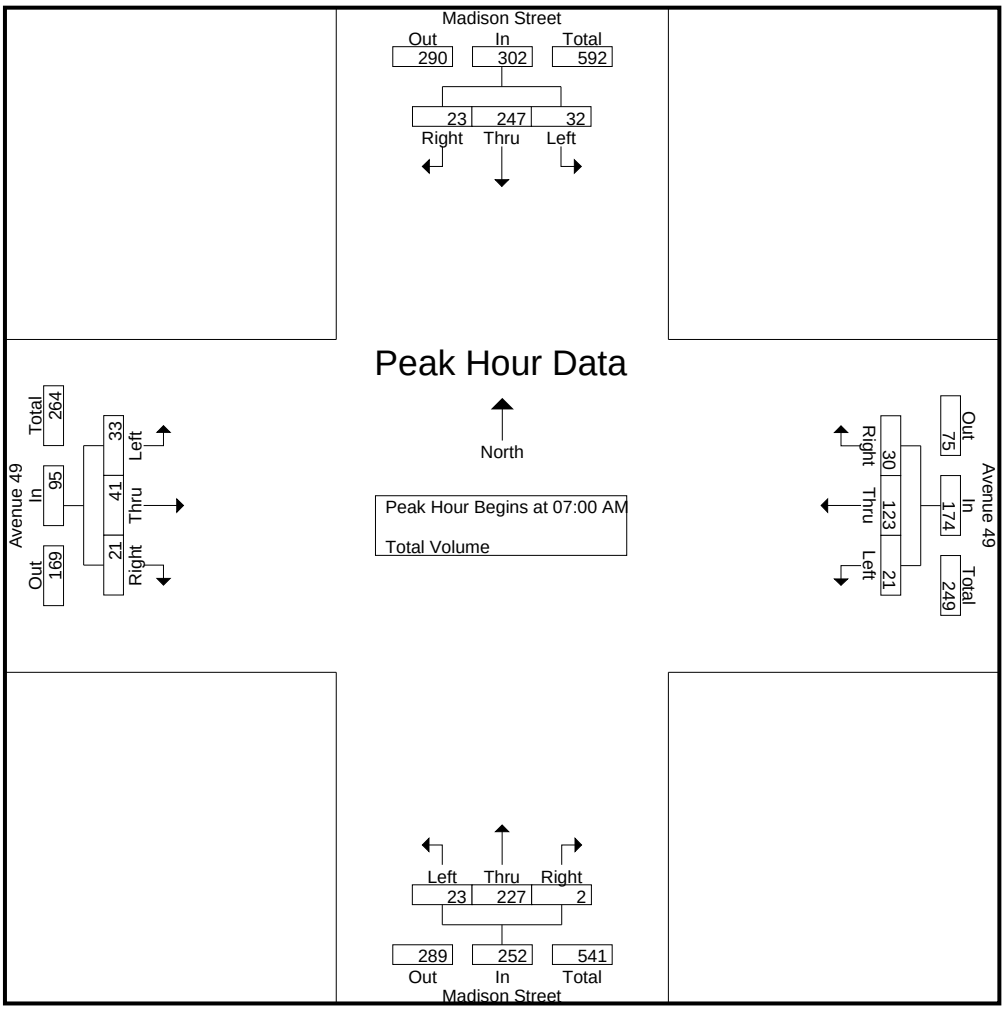
City of Indio
N/S: Madison Street
E/W: Avenue 49
Weather: Clear

File Name : 04_IND_Madison_Ave 49 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:45 AM				07:00 AM			
+0 mins.	9	53	6	68	1	**35**	7	43	3	**62**	1	66	**9**	10	5	24
+15 mins.	10	60	4	74	3	26	5	34	9	55	**2**	66	9	9	4	22
+30 mins.	9	**77**	**7**	**93**	6	31	**13**	**50**	11	60	2	**73**	6	6	**7**	19
+45 mins.	**11**	61	7	79	**11**	31	5	47	**18**	53	1	72	9	**16**	5	**30**
Total Volume	39	251	24	314	21	123	30	174	41	230	6	277	33	41	21	95
% App. Total	12.4	79.9	7.6		12.1	70.7	17.2		14.8	83	2.2		34.7	43.2	22.1	
PHF	.886	.815	.857	.844	.477	.879	.577	.870	.569	.927	.750	.949	.917	.641	.750	.792

Counts Unlimited
PO Box 1178
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City of Indio
N/S: Madison Street
E/W: Avenue 49
Weather: Clear

File Name : 04_IND_Madison_Ave 49 PM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Madison Street Southbound				Avenue 49 Westbound				Madison Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	20	78	5	103	1	22	9	32	12	88	1	101	3	20	2	25	261
04:15 PM	18	72	3	93	1	15	3	19	14	74	1	89	6	19	5	30	231
04:30 PM	20	63	6	89	3	13	6	22	11	66	5	82	6	12	7	25	218
04:45 PM	9	62	4	75	0	12	4	16	14	58	4	76	4	23	9	36	203
Total	67	275	18	360	5	62	22	89	51	286	11	348	19	74	23	116	913
05:00 PM	10	57	7	74	3	13	8	24	17	71	3	91	3	19	4	26	215
05:15 PM	6	57	8	71	1	17	8	26	9	70	4	83	6	23	10	39	219
05:30 PM	8	31	10	49	2	19	6	27	5	63	2	70	6	18	6	30	176
05:45 PM	5	36	7	48	2	19	2	23	2	54	2	58	6	21	3	30	159
Total	29	181	32	242	8	68	24	100	33	258	11	302	21	81	23	125	769
Grand Total	96	456	50	602	13	130	46	189	84	544	22	650	40	155	46	241	1682
Apprch %	15.9	75.7	8.3		6.9	68.8	24.3		12.9	83.7	3.4		16.6	64.3	19.1		
Total %	5.7	27.1	3	35.8	0.8	7.7	2.7	11.2	5	32.3	1.3	38.6	2.4	9.2	2.7	14.3	

	Madison Street Southbound				Avenue 49 Westbound				Madison Street Northbound				Avenue 49 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**20**	**78**	5	**103**	1	**22**	**9**	**32**	12	**88**	1	**101**	3	20	2	25	**261**
04:15 PM	18	72	3	93	1	15	3	19	**14**	74	1	89	**6**	19	5	30	231
04:30 PM	20	63	**6**	89	**3**	13	6	22	11	66	**5**	82	6	12	7	25	218
04:45 PM	9	62	4	75	0	12	4	16	14	58	4	76	4	**23**	**9**	**36**	203
Total Volume	67	275	18	360	5	62	22	89	51	286	11	348	19	74	23	116	913
% App. Total	18.6	76.4	5		5.6	69.7	24.7		14.7	82.2	3.2		16.4	63.8	19.8		
PHF	.838	.881	.750	.874	.417	.705	.611	.695	.911	.813	.550	.861	.792	.804	.639	.806	.875

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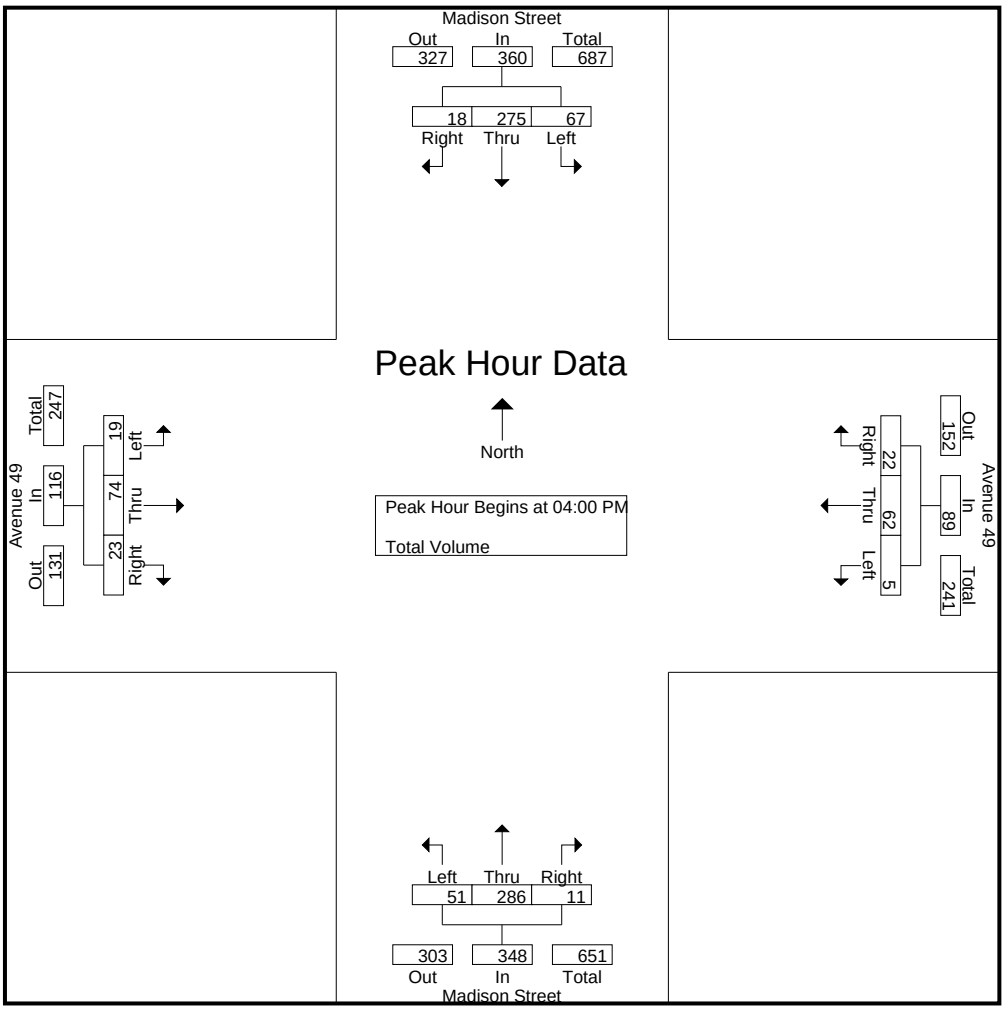
City of Indio
N/S: Madison Street
E/W: Avenue 49
Weather: Clear

File Name : 04_IND_Madison_Ave 49 PM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:00 PM				04:45 PM			
+0 mins.	**20**	**78**	5	**103**	**3**	13	**8**	24	12	**88**	1	**101**	4	**23**	9	36
+15 mins.	18	72	3	93	1	17	8	26	**14**	74	1	89	3	19	4	26
+30 mins.	20	63	**6**	89	2	**19**	6	**27**	11	66	**5**	82	**6**	23	**10**	**39**
+45 mins.	9	62	4	75	2	19	2	23	14	58	4	76	6	18	6	30
Total Volume	67	275	18	360	8	68	24	100	51	286	11	348	19	83	29	131
% App. Total	18.6	76.4	5		8	68	24		14.7	82.2	3.2		14.5	63.4	22.1	
PHF	.838	.881	.750	.874	.667	.895	.750	.926	.911	.813	.550	.861	.792	.902	.725	.840

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City of Indio
N/S: Madison Street
E/W: Avenue 50
Weather: Clear

File Name : 05_IND_Madison_Ave 50 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Madison Street Southbound				Avenue 50 Westbound				Madison Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	30	25	59	4	108	10	122	15	33	1	49	13	29	14	56	286
07:15 AM	15	35	12	62	5	94	12	111	19	27	1	47	15	33	10	58	278
07:30 AM	12	40	21	73	3	96	9	108	9	41	4	54	14	55	15	84	319
07:45 AM	9	48	31	88	7	106	15	128	22	55	4	81	13	42	12	67	364
Total	40	153	89	282	19	404	46	469	65	156	10	231	55	159	51	265	1247
08:00 AM	5	38	18	61	3	66	6	75	22	35	3	60	12	45	9	66	262
08:15 AM	2	32	9	43	4	80	10	94	21	30	4	55	23	45	12	80	272
08:30 AM	7	30	11	48	2	57	13	72	23	55	2	80	4	28	12	44	244
08:45 AM	5	37	13	55	3	55	7	65	15	48	0	63	2	26	24	52	235
Total	19	137	51	207	12	258	36	306	81	168	9	258	41	144	57	242	1013
Grand Total	59	290	140	489	31	662	82	775	146	324	19	489	96	303	108	507	2260
Apprch %	12.1	59.3	28.6		4	85.4	10.6		29.9	66.3	3.9		18.9	59.8	21.3		
Total %	2.6	12.8	6.2	21.6	1.4	29.3	3.6	34.3	6.5	14.3	0.8	21.6	4.2	13.4	4.8	22.4	

	Madison Street Southbound				Avenue 50 Westbound				Madison Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	30	25	59	4	**108**	10	122	15	33	1	49	13	29	14	56	286
07:15 AM	**15**	35	12	62	5	94	12	111	19	27	1	47	**15**	33	10	58	278
07:30 AM	12	40	21	73	3	96	9	108	9	41	**4**	54	14	**55**	**15**	**84**	319
07:45 AM	9	**48**	**31**	**88**	**7**	106	**15**	**128**	**22**	**55**	4	**81**	13	42	12	67	**364**
Total Volume	40	153	89	282	19	404	46	469	65	156	10	231	55	159	51	265	1247
% App. Total	14.2	54.3	31.6		4.1	86.1	9.8		28.1	67.5	4.3		20.8	60	19.2		
PHF	.667	.797	.718	.801	.679	.935	.767	.916	.739	.709	.625	.713	.917	.723	.850	.789	.856

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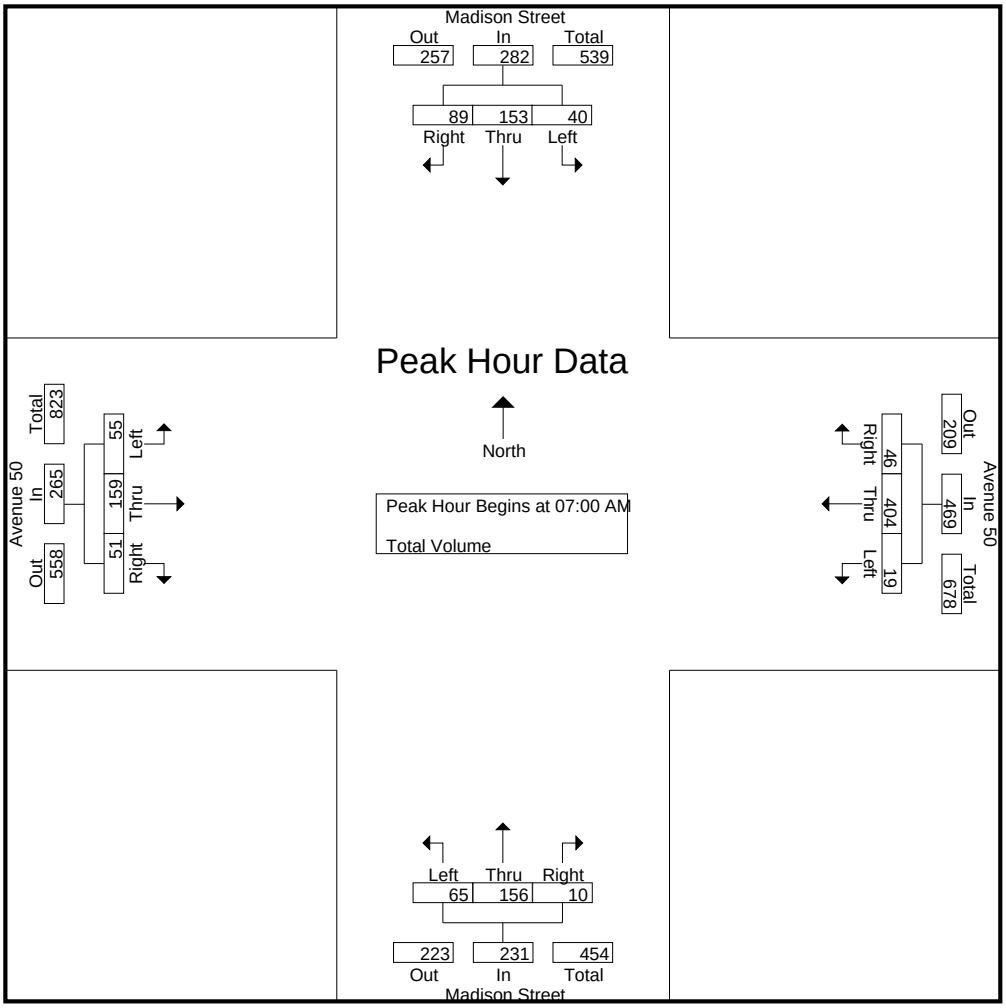
City of Indio
N/S: Madison Street
E/W: Avenue 50
Weather: Clear

File Name : 05_IND_Madison_Ave 50 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:45 AM				07:30 AM			
+0 mins.	**15**	35	12	62	4	**108**	10	122	22	**55**	**4**	**81**	14	**55**	**15**	**84**
+15 mins.	12	40	21	73	5	94	12	111	22	35	3	60	13	42	12	67
+30 mins.	9	**48**	**31**	**88**	3	96	9	108	21	30	4	55	12	45	9	66
+45 mins.	5	38	18	61	**7**	106	**15**	**128**	**23**	55	2	80	**23**	45	12	80
Total Volume	41	161	82	284	19	404	46	469	88	175	13	276	62	187	48	297
% App. Total	14.4	56.7	28.9		4.1	86.1	9.8		31.9	63.4	4.7		20.9	63	16.2	
PHF	.683	.839	.661	.807	.679	.935	.767	.916	.957	.795	.813	.852	.674	.850	.800	.884

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City of Indio
N/S: Madison Street
E/W: Avenue 50
Weather: Clear

File Name : 05_IND_Madison_Ave 50 PM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Madison Street Southbound				Avenue 50 Westbound				Madison Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	14	44	13	71	1	73	18	92	24	65	4	93	3	77	26	106	362
04:15 PM	13	44	8	65	2	65	14	81	16	60	5	81	12	73	31	116	343
04:30 PM	14	32	20	66	2	75	10	87	24	51	3	78	8	71	33	112	343
04:45 PM	18	40	8	66	2	81	8	91	19	60	2	81	5	59	24	88	326
Total	59	160	49	268	7	294	50	351	83	236	14	333	28	280	114	422	1374
05:00 PM	17	31	14	62	5	67	12	84	24	53	3	80	5	69	19	93	319
05:15 PM	15	37	13	65	5	57	13	75	20	36	5	61	14	72	23	109	310
05:30 PM	9	41	14	64	3	51	21	75	11	50	3	64	2	69	21	92	295
05:45 PM	13	24	8	45	1	57	7	65	9	30	2	41	13	57	26	96	247
Total	54	133	49	236	14	232	53	299	64	169	13	246	34	267	89	390	1171
Grand Total	113	293	98	504	21	526	103	650	147	405	27	579	62	547	203	812	2545
Apprch %	22.4	58.1	19.4		3.2	80.9	15.8		25.4	69.9	4.7		7.6	67.4	25		
Total %	4.4	11.5	3.9	19.8	0.8	20.7	4	25.5	5.8	15.9	1.1	22.8	2.4	21.5	8	31.9	

	Madison Street Southbound				Avenue 50 Westbound				Madison Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	14	**44**	13	**71**	1	73	**18**	**92**	**24**	**65**	4	**93**	3	**77**	26	106	**362**
04:15 PM	13	44	8	65	**2**	65	14	81	16	60	**5**	81	**12**	73	31	**116**	343
04:30 PM	14	32	**20**	66	2	75	10	87	24	51	3	78	8	71	**33**	112	343
04:45 PM	**18**	40	8	66	2	**81**	8	91	19	60	2	81	5	59	24	88	326
Total Volume	59	160	49	268	7	294	50	351	83	236	14	333	28	280	114	422	1374
% App. Total	22	59.7	18.3		2	83.8	14.2		24.9	70.9	4.2		6.6	66.4	27		
PHF	.819	.909	.613	.944	.875	.907	.694	.954	.865	.908	.700	.895	.583	.909	.864	.909	.949

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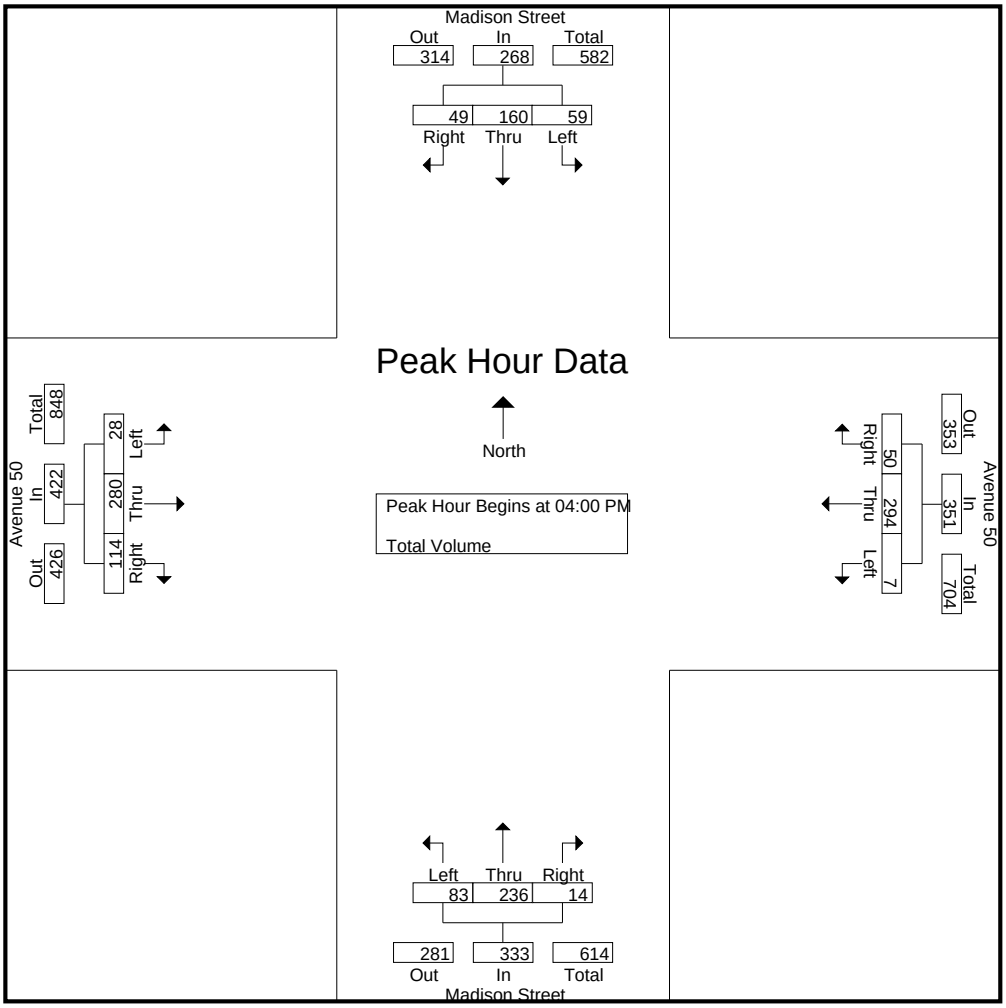
City of Indio
N/S: Madison Street
E/W: Avenue 50
Weather: Clear

File Name : 05_IND_Madison_Ave 50 PM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	14	**44**	13	**71**	1	73	**18**	**92**	**24**	**65**	4	**93**	3	**77**	26	106
+15 mins.	13	44	8	65	**2**	65	14	81	16	60	**5**	81	**12**	73	31	**116**
+30 mins.	14	32	**20**	66	2	75	10	87	24	51	3	78	8	71	**33**	112
+45 mins.	**18**	40	8	66	2	**81**	8	91	19	60	2	81	5	59	24	88
Total Volume	59	160	49	268	7	294	50	351	83	236	14	333	28	280	114	422
% App. Total	22	59.7	18.3		2	83.8	14.2		24.9	70.9	4.2		6.6	66.4	27	
PHF	.819	.909	.613	.944	.875	.907	.694	.954	.865	.908	.700	.895	.583	.909	.864	.909

Counts Unlimited
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City of Indio
N/S: Hjorth Street
E/W: Avenue 50
Weather: Clear

File Name : 06_IND_Hjorth_Ave 50 AM
Site Code : 07520184
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Hjorth Street Southbound				Avenue 50 Westbound				Private Driveway Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	0	6	9	0	109	9	118	0	0	0	0	3	33	0	36	163
07:15 AM	5	0	4	9	0	111	13	124	0	0	0	0	1	49	0	50	183
07:30 AM	13	0	2	15	0	104	29	133	0	0	0	0	10	57	0	67	215
07:45 AM	18	1	5	24	0	129	32	161	0	0	0	0	13	45	0	58	243
Total	39	1	17	57	0	453	83	536	0	0	0	0	27	184	0	211	804
08:00 AM	21	0	3	24	0	81	53	134	0	0	0	0	4	49	0	53	211
08:15 AM	32	0	2	34	0	88	27	115	0	0	0	0	3	53	0	56	205
08:30 AM	11	0	7	18	0	63	9	72	0	0	0	0	5	35	0	40	130
08:45 AM	5	0	3	8	0	63	3	66	0	0	0	0	2	28	0	30	104
Total	69	0	15	84	0	295	92	387	0	0	0	0	14	165	0	179	650
Grand Total	108	1	32	141	0	748	175	923	0	0	0	0	41	349	0	390	1454
Apprch %	76.6	0.7	22.7		0	81	19		0	0	0		10.5	89.5	0		
Total %	7.4	0.1	2.2	9.7	0	51.4	12	63.5	0	0	0	0	2.8	24	0	26.8	

	Hjorth Street Southbound				Avenue 50 Westbound				Private Driveway Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	13	0	2	15	0	104	29	133	0	0	0	0	10	**57**	0	**67**	215
07:45 AM	18	**1**	**5**	24	0	**129**	32	**161**	0	0	0	0	**13**	45	0	58	**243**
08:00 AM	21	0	3	24	0	81	**53**	134	0	0	0	0	4	49	0	53	211
08:15 AM	**32**	0	2	**34**	0	88	27	115	0	0	0	0	3	53	0	56	205
Total Volume	84	1	12	97	0	402	141	543	0	0	0	0	30	204	0	234	874
% App. Total	86.6	1	12.4		0	74	26		0	0	0		12.8	87.2	0		
PHF	.656	.250	.600	.713	.000	.779	.665	.843	.000	.000	.000	.000	.577	.895	.000	.873	.899

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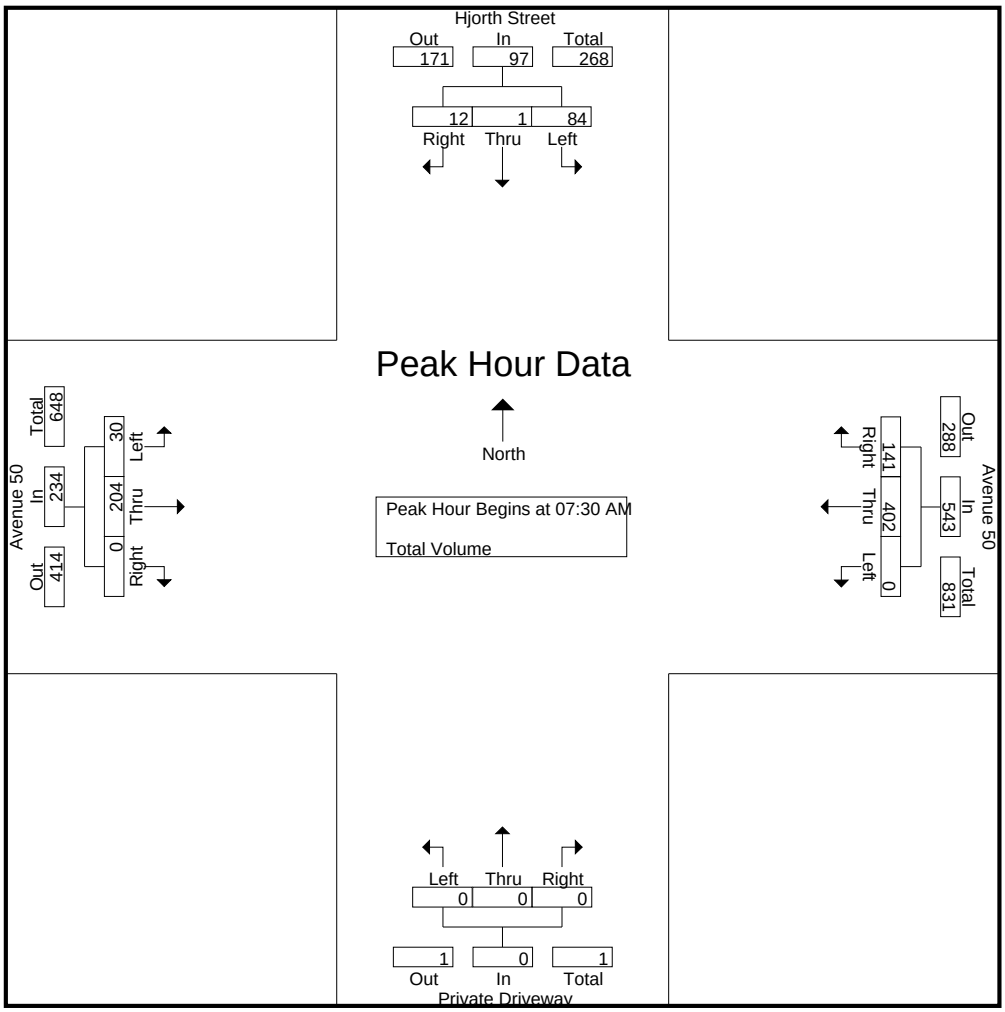

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:15 AM				07:00 AM				07:30 AM			
+0 mins.	18	**1**	5	24	0	111	13	124	0	0	0	0	10	**57**	0	**67**
+15 mins.	21	0	3	24	0	104	29	133	0	0	0	0	**13**	45	0	58
+30 mins.	**32**	0	2	**34**	0	**129**	32	**161**	0	0	0	0	4	49	0	53
+45 mins.	11	0	**7**	18	0	81	**53**	134	0	0	0	0	3	53	0	56
Total Volume	82	1	17	100	0	425	127	552	0	0	0	0	30	204	0	234
% App. Total	82	1	17		0	77	23		0	0	0		12.8	87.2	0	
PHF	.641	.250	.607	.735	.000	.824	.599	.857	.000	.000	.000	.000	.577	.895	.000	.873

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Groups Printed- Total Volume

	Hjorth Street Southbound				Avenue 50 Westbound				Private Driveway Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	7	0	2	9	0	92	8	100	0	0	0	0	1	105	0	106	215
04:15 PM	2	0	3	5	0	84	3	87	0	0	0	0	3	91	0	94	186
04:30 PM	5	0	1	6	0	81	2	83	0	0	0	0	2	85	0	87	176
04:45 PM	2	0	1	3	0	97	1	98	0	0	0	0	1	82	0	83	184
Total	16	0	7	23	0	354	14	368	0	0	0	0	7	363	0	370	761
05:00 PM	0	0	0	0	0	85	4	89	0	0	0	0	0	89	0	89	178
05:15 PM	2	0	1	3	0	75	2	77	0	0	0	0	0	90	0	90	170
05:30 PM	2	0	2	4	0	74	1	75	0	0	0	0	1	81	0	82	161
05:45 PM	2	0	8	10	0	55	1	56	0	0	0	0	2	73	0	75	141
Total	6	0	11	17	0	289	8	297	0	0	0	0	3	333	0	336	650
Grand Total	22	0	18	40	0	643	22	665	0	0	0	0	10	696	0	706	1411
Apprch %	55	0	45		0	96.7	3.3		0	0	0		1.4	98.6	0		
Total %	1.6	0	1.3	2.8	0	45.6	1.6	47.1	0	0	0	0	0.7	49.3	0	50	

	Hjorth Street Southbound				Avenue 50 Westbound				Private Driveway Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**7**	0	2	**9**	0	92	**8**	**100**	0	0	0	0	1	**105**	0	**106**	**215**
04:15 PM	2	0	**3**	5	0	84	3	87	0	0	0	0	**3**	91	0	94	186
04:30 PM	5	0	1	6	0	81	2	83	0	0	0	0	2	85	0	87	176
04:45 PM	2	0	1	3	0	**97**	1	98	0	0	0	0	1	82	0	83	184
Total Volume	16	0	7	23	0	354	14	368	0	0	0	0	7	363	0	370	761
% App. Total	69.6	0	30.4		0	96.2	3.8		0	0	0		1.9	98.1	0		
PHF	.571	.000	.583	.639	.000	.912	.438	.920	.000	.000	.000	.000	.583	.864	.000	.873	.885

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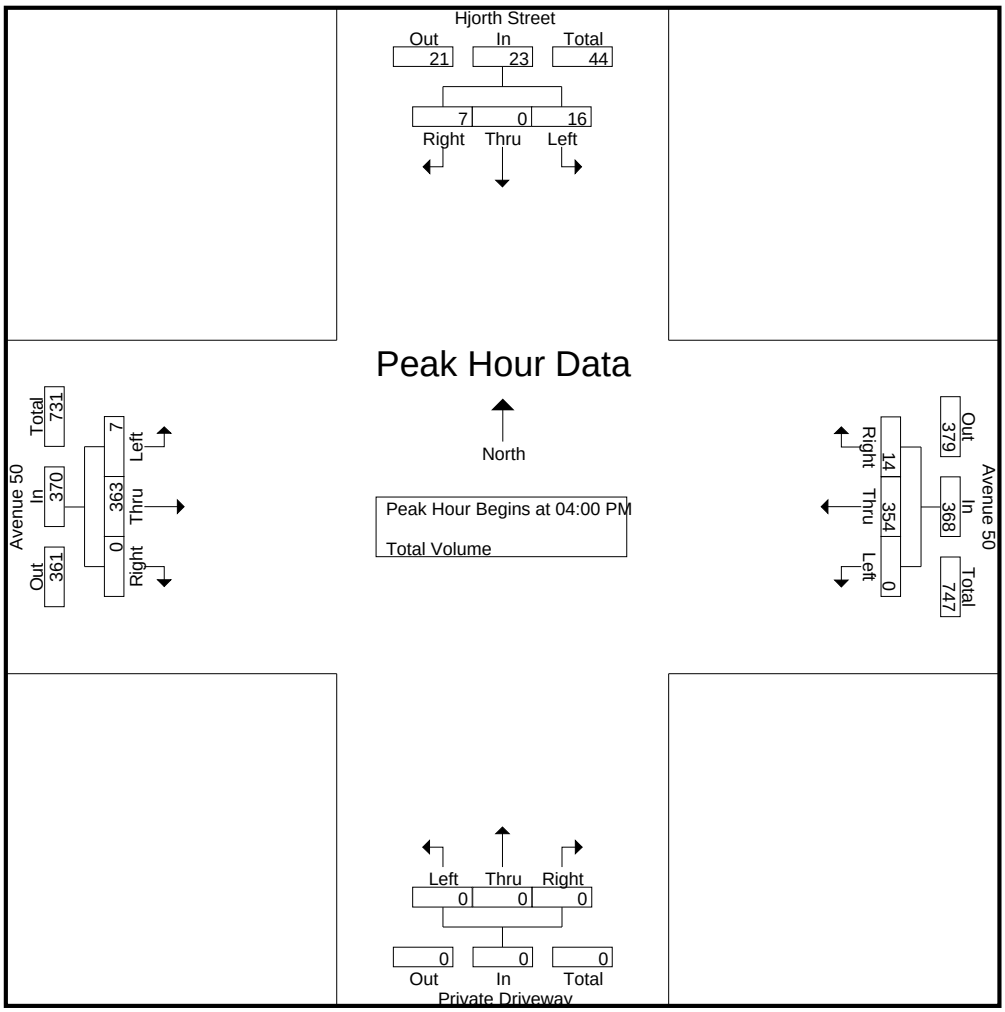

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**7**	0	2	**9**	0	92	**8**	**100**	0	0	0	0	1	**105**	0	**106**
+15 mins.	2	0	**3**	5	0	84	3	87	0	0	0	0	**3**	91	0	94
+30 mins.	5	0	1	6	0	81	2	83	0	0	0	0	2	85	0	87
+45 mins.	2	0	1	3	0	**97**	1	98	0	0	0	0	1	82	0	83
Total Volume	16	0	7	23	0	354	14	368	0	0	0	0	7	363	0	370
% App. Total	69.6	0	30.4		0	96.2	3.8		0	0	0		1.9	98.1	0	
PHF	.571	.000	.583	.639	.000	.912	.438	.920	.000	.000	.000	.000	.583	.864	.000	.873

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Groups Printed- Total Volume

	Monroe Street Southbound				Avenue 50 Westbound				Monroe Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	21	59	12	92	18	99	47	164	4	43	1	48	2	23	10	35	339
07:15 AM	18	52	6	76	3	115	44	162	9	47	4	60	7	37	8	52	350
07:30 AM	32	82	7	121	6	124	40	170	10	38	4	52	9	61	7	77	420
07:45 AM	33	73	12	118	4	131	43	178	21	55	8	84	5	43	17	65	445
Total	104	266	37	407	31	469	174	674	44	183	17	244	23	164	42	229	1554
08:00 AM	34	72	11	117	6	114	42	162	15	58	3	76	4	44	10	58	413
08:15 AM	30	60	9	99	7	106	40	153	8	65	4	77	10	61	21	92	421
08:30 AM	34	57	8	99	6	59	43	108	3	70	5	78	5	24	15	44	329
08:45 AM	20	50	7	77	5	58	42	105	2	60	3	65	3	24	5	32	279
Total	118	239	35	392	24	337	167	528	28	253	15	296	22	153	51	226	1442
Grand Total	222	505	72	799	55	806	341	1202	72	436	32	540	45	317	93	455	2996
Apprch %	27.8	63.2	9		4.6	67.1	28.4		13.3	80.7	5.9		9.9	69.7	20.4		
Total %	7.4	16.9	2.4	26.7	1.8	26.9	11.4	40.1	2.4	14.6	1.1	18	1.5	10.6	3.1	15.2	

	Monroe Street Southbound				Avenue 50 Westbound				Monroe Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	32	**82**	7	**121**	6	124	40	170	10	38	4	52	9	**61**	7	77	420
07:45 AM	33	73	**12**	118	4	**131**	**43**	**178**	**21**	55	**8**	**84**	5	43	17	65	**445**
08:00 AM	**34**	72	11	117	6	114	42	162	15	58	3	76	4	44	10	58	413
08:15 AM	30	60	9	99	**7**	106	40	153	8	**65**	4	77	**10**	61	**21**	**92**	421
Total Volume	129	287	39	455	23	475	165	663	54	216	19	289	28	209	55	292	1699
% App. Total	28.4	63.1	8.6		3.5	71.6	24.9		18.7	74.7	6.6		9.6	71.6	18.8		
PHF	.949	.875	.813	.940	.821	.906	.959	.931	.643	.831	.594	.860	.700	.857	.655	.793	.954

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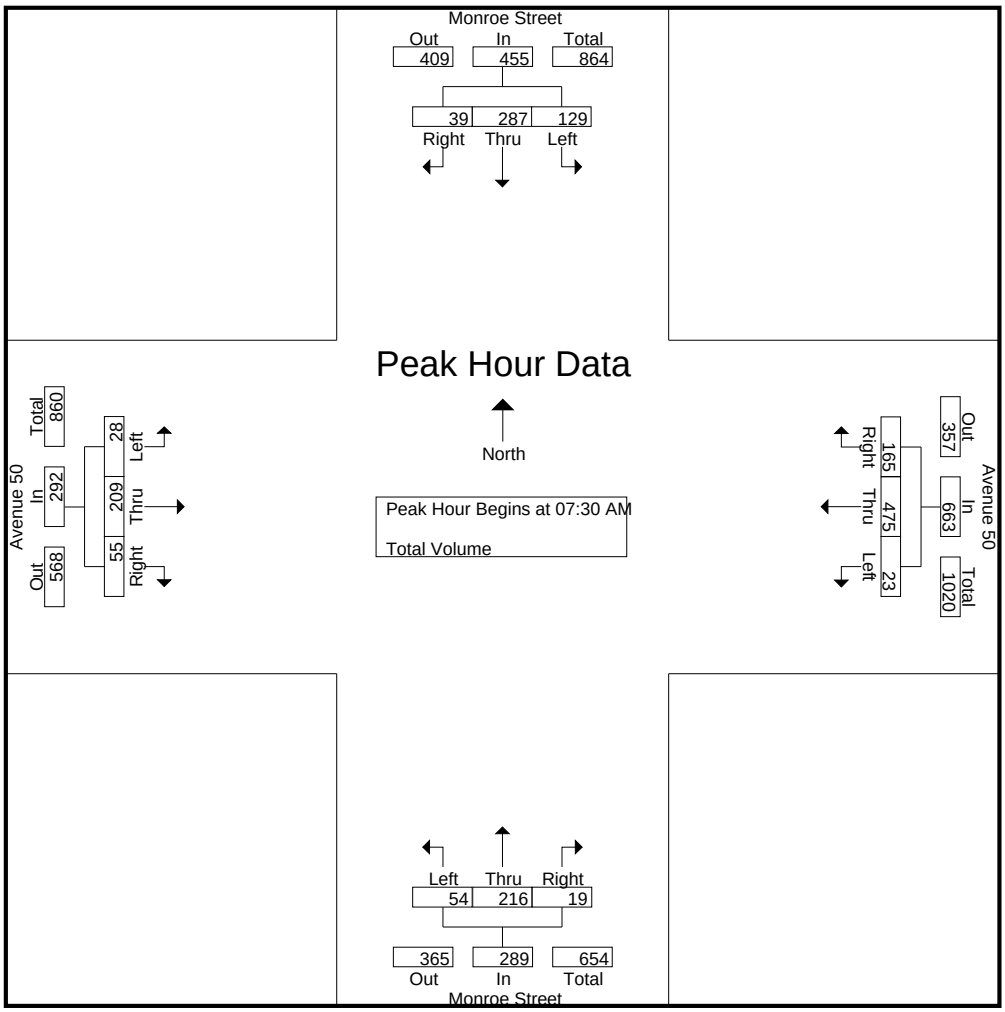

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:00 AM				07:45 AM				07:30 AM			
+0 mins.	32	**82**	7	**121**	**18**	99	**47**	164	**21**	55	**8**	**84**	9	**61**	7	77
+15 mins.	33	73	**12**	118	3	115	44	162	15	58	3	76	5	43	17	65
+30 mins.	**34**	72	11	117	6	124	40	170	8	65	4	77	4	44	10	58
+45 mins.	30	60	9	99	4	**131**	43	**178**	3	**70**	5	78	**10**	61	**21**	**92**
Total Volume	129	287	39	455	31	469	174	674	47	248	20	315	28	209	55	292
% App. Total	28.4	63.1	8.6		4.6	69.6	25.8		14.9	78.7	6.3		9.6	71.6	18.8	
PHF	.949	.875	.813	.940	.431	.895	.926	.947	.560	.886	.625	.938	.700	.857	.655	.793

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Groups Printed- Total Volume

	Monroe Street Southbound				Avenue 50 Westbound				Monroe Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	36	63	6	105	4	77	54	135	13	81	18	112	7	82	15	104	456
04:15 PM	25	80	5	110	8	69	46	123	13	77	12	102	7	78	12	97	432
04:30 PM	38	78	5	121	4	69	33	106	9	76	12	97	7	69	12	88	412
04:45 PM	26	57	4	87	6	77	37	120	9	58	13	80	8	73	14	95	382
Total	125	278	20	423	22	292	170	484	44	292	55	391	29	302	53	384	1682
05:00 PM	44	60	9	113	5	66	33	104	6	67	9	82	3	74	8	85	384
05:15 PM	48	64	10	122	8	54	41	103	16	51	11	78	5	71	13	89	392
05:30 PM	39	66	9	114	5	61	28	94	4	56	6	66	6	71	10	87	361
05:45 PM	35	67	6	108	3	60	33	96	4	73	4	81	6	69	18	93	378
Total	166	257	34	457	21	241	135	397	30	247	30	307	20	285	49	354	1515
Grand Total	291	535	54	880	43	533	305	881	74	539	85	698	49	587	102	738	3197
Apprch %	33.1	60.8	6.1		4.9	60.5	34.6		10.6	77.2	12.2		6.6	79.5	13.8		
Total %	9.1	16.7	1.7	27.5	1.3	16.7	9.5	27.6	2.3	16.9	2.7	21.8	1.5	18.4	3.2	23.1	

	Monroe Street Southbound				Avenue 50 Westbound				Monroe Street Northbound				Avenue 50 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	36	63	**6**	105	4	**77**	**54**	**135**	**13**	**81**	**18**	**112**	7	**82**	**15**	**104**	**456**
04:15 PM	25	**80**	5	110	**8**	69	46	123	13	77	12	102	7	78	12	97	432
04:30 PM	**38**	78	5	**121**	4	69	33	106	9	76	12	97	7	69	12	88	412
04:45 PM	26	57	4	87	6	77	37	120	9	58	13	80	**8**	73	14	95	382
Total Volume	125	278	20	423	22	292	170	484	44	292	55	391	29	302	53	384	1682
% App. Total	29.6	65.7	4.7		4.5	60.3	35.1		11.3	74.7	14.1		7.6	78.6	13.8		
PHF	.822	.869	.833	.874	.688	.948	.787	.896	.846	.901	.764	.873	.906	.921	.883	.923	.922

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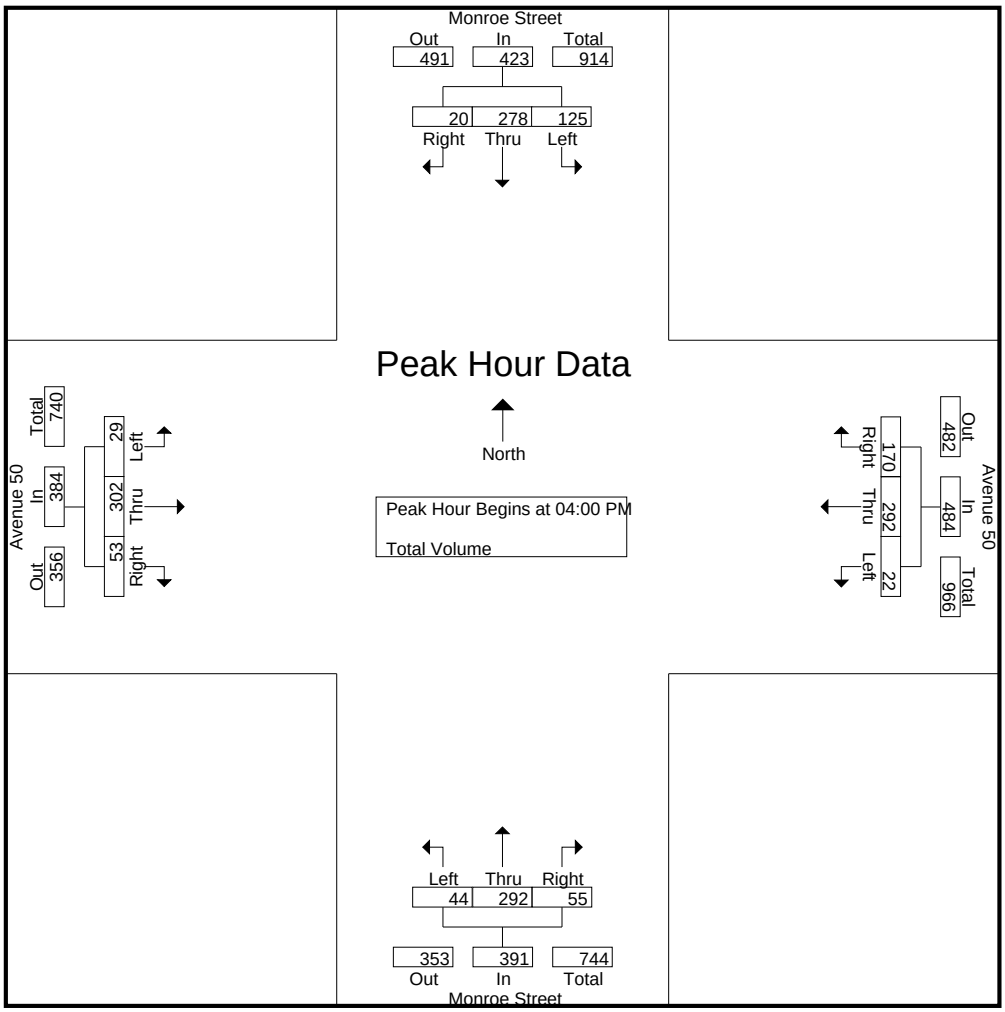

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	44	60	9	113	4	**77**	**54**	**135**	**13**	**81**	**18**	**112**	7	**82**	**15**	**104**
+15 mins.	**48**	64	**10**	**122**	**8**	69	46	123	13	77	12	102	7	78	12	97
+30 mins.	39	66	9	114	4	69	33	106	9	76	12	97	7	69	12	88
+45 mins.	35	**67**	6	108	6	77	37	120	9	58	13	80	**8**	73	14	95
Total Volume	166	257	34	457	22	292	170	484	44	292	55	391	29	302	53	384
% App. Total	36.3	56.2	7.4		4.5	60.3	35.1		11.3	74.7	14.1		7.6	78.6	13.8	
PHF	.865	.959	.850	.936	.688	.948	.787	.896	.846	.901	.764	.873	.906	.921	.883	.923

APPENDIX C

EXPLANATION AND CALCULATION OF INTERSECTION DELAY

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized and signalized intersections are calculated using the delay methodology in the Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)

2. Lane utilization factor (to account for not all lanes loading equally)

3. Lane width

4. Percent of heavy trucks

5. Approach grade

6. Parking

7. Bus stops at intersections

8. Area type (CBD or other)

9. Right turns

10. Left turns
11. Pedestrian activity

12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay method and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length

2. Amount of red time faced by a lane group

3. Amount of yellow time for that lane group

4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.
The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION[1]

Level of Service	Description	Average Total Delay per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Existing

TTM 37884

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Report File: C:\...\AM E.pdf

Scenario 1 Existing
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.491	21.7	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.483	17.1	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.611	24.1	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.034	16.5	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.354	11.0	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.300	23.4	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.299	21.1	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.493	20.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	171	18	73	178	11	15	156	51	9	65	35
Total Analysis Volume [veh/h]	134	683	73	291	711	45	61	625	202	37	259	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	23	23	8	24	24	5	15	15	4	13	13
g / C, Green / Cycle	0.10	0.36	0.36	0.12	0.38	0.38	0.07	0.23	0.23	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.05	0.09	0.15	0.03	0.04	0.18	0.13	0.02	0.12	0.12
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	332	1747	545	392	1836	573	127	774	346	94	372	329
d1, Uniform Delay [s]	27.56	15.71	14.20	27.84	14.94	13.16	29.01	23.92	22.53	29.80	23.25	23.36
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.66	0.51	2.80	0.62	0.27	2.79	2.05	1.57	2.65	1.34	1.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.39	0.13	0.74	0.39	0.08	0.48	0.81	0.58	0.39	0.56	0.58
d, Delay for Lane Group [s/veh]	28.36	16.37	14.71	30.64	15.56	13.43	31.79	25.97	24.10	32.45	24.58	24.99
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.93	2.24	0.69	2.13	2.25	0.40	0.93	4.21	2.58	0.58	2.69	2.50
50th-Percentile Queue Length [ft/ln]	23.14	55.91	17.36	53.30	56.19	10.02	23.34	105.29	64.52	14.55	67.33	62.57
95th-Percentile Queue Length [veh/ln]	1.67	4.03	1.25	3.84	4.05	0.72	1.68	7.58	4.65	1.05	4.85	4.50
95th-Percentile Queue Length [ft/ln]	41.66	100.63	31.25	95.95	101.15	18.04	42.02	189.44	116.13	26.19	121.20	112.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.36	16.37	14.71	30.64	15.56	13.43	31.79	25.97	24.10	32.45	24.66	24.99
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.04			19.66			25.94			25.43		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.70											
Intersection LOS	C											
Intersection V/C	0.491											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.483

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	242	10	23	235	13	2	1	3	12	2	63
Total Analysis Volume [veh/h]	25	968	39	93	939	52	8	5	14	47	10	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	35	35	6	38	38	3	3	15	15
g / C, Green / Cycle	0.04	0.47	0.47	0.08	0.51	0.51	0.04	0.04	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.03	0.05	0.19	0.19	0.01	0.01	0.03	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1746	1530	1714	1539
c, Capacity [veh/h]	67	2299	717	138	1750	895	72	63	337	302
d1, Uniform Delay [s]	35.21	13.20	10.87	33.56	11.12	11.13	34.79	34.85	24.94	29.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.46	0.57	0.14	5.56	0.61	1.20	1.19	1.76	0.19	7.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

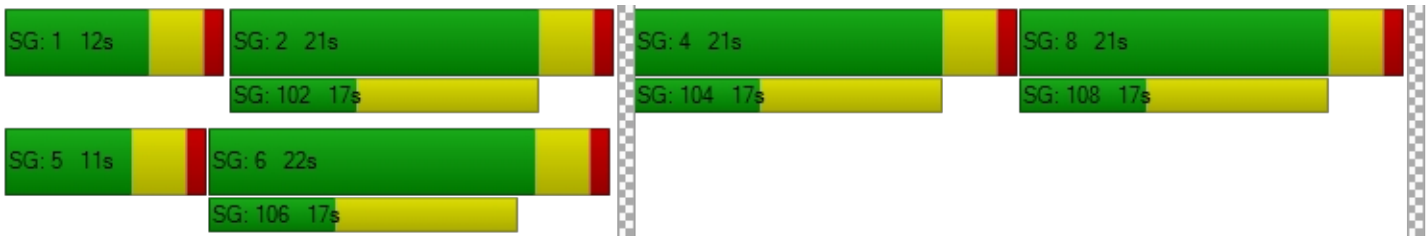
X, volume / capacity	0.37	0.42	0.05	0.67	0.37	0.38	0.18	0.22	0.14	0.87
d, Delay for Lane Group [s/veh]	38.66	13.77	11.02	39.12	11.74	12.33	35.98	36.61	25.13	36.91
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	2.95	0.31	1.75	2.83	3.04	0.25	0.28	0.67	4.90
50th-Percentile Queue Length [ft/ln]	11.77	73.67	7.75	43.72	70.70	76.09	6.27	6.89	16.66	122.56
95th-Percentile Queue Length [veh/ln]	0.85	5.30	0.56	3.15	5.09	5.48	0.45	0.50	1.20	8.53
95th-Percentile Queue Length [ft/ln]	21.18	132.61	13.95	78.69	127.26	136.97	11.29	12.41	29.99	213.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.66	13.77	11.02	39.12	11.92	12.33	35.98	35.98	36.61	25.13	36.91	36.91
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	14.27			14.27			36.31			35.13		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	17.15											
Intersection LOS	B											
Intersection V/C	0.483											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	116	3	20	118	78	61	57	10	16	73	44
Total Analysis Volume [veh/h]	56	465	13	78	473	313	243	230	40	65	292	175
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	25	0	13	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	23	23	6	24	24	12	20	20	5	14	14
g / C, Green / Cycle	0.07	0.33	0.33	0.08	0.34	0.34	0.17	0.29	0.29	0.07	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.01	0.02	0.10	0.20	0.14	0.07	0.03	0.04	0.16	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1617	505	266	1674	522	288	990	442	126	350	297
d1, Uniform Delay [s]	31.52	17.43	15.91	30.45	16.87	19.16	28.32	19.05	18.25	31.33	27.22	25.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.00	0.45	0.09	0.61	0.42	5.01	6.61	0.12	0.09	3.21	5.25	1.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

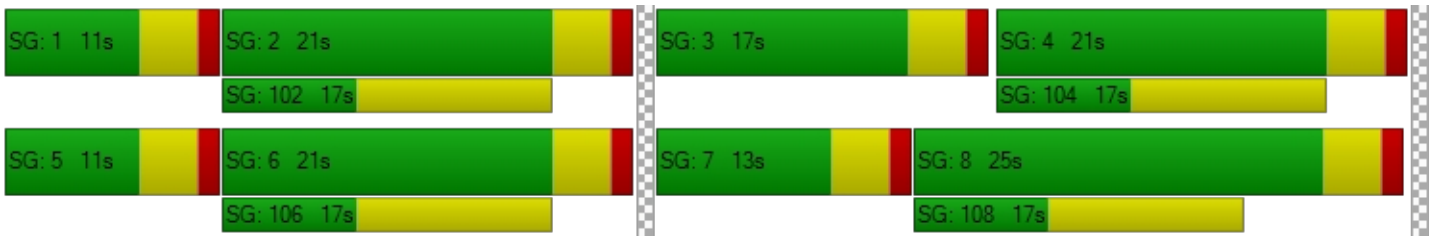
X, volume / capacity	0.48	0.29	0.03	0.29	0.28	0.60	0.84	0.23	0.09	0.51	0.83	0.59
d, Delay for Lane Group [s/veh]	34.51	17.88	16.01	31.06	17.29	24.17	34.93	19.17	18.33	34.54	32.47	27.60
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	1.65	0.13	0.58	1.60	4.18	4.05	1.26	0.42	1.09	4.74	2.55
50th-Percentile Queue Length [ft/ln]	23.24	41.18	3.36	14.46	39.91	104.49	101.23	31.44	10.61	27.30	118.50	63.78
95th-Percentile Queue Length [veh/ln]	1.67	2.97	0.24	1.04	2.87	7.52	7.29	2.26	0.76	1.97	8.31	4.59
95th-Percentile Queue Length [ft/ln]	41.84	74.13	6.04	26.02	71.84	188.09	182.22	56.59	19.10	49.15	207.76	114.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	17.88	16.01	31.06	17.29	24.17	34.93	19.17	18.33	34.54	32.47	27.60
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	19.58			21.02			26.57			31.12		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	24.07											
Intersection LOS	C											
Intersection V/C	0.611											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	10	2	284	5	7	521
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	2	284	5	7	521
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	75	1	2	138
Total Analysis Volume [veh/h]	11	2	300	5	7	551
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	16.49	10.22	0.00	0.00	7.86	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	2.84	2.84	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	15.53		0.00		0.10	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.29					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.354

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	69	1	10	75	7	10	12	6	6	37	9
Total Analysis Volume [veh/h]	28	274	2	39	299	28	40	50	25	25	149	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	546	591	592	553	599	611	575	594
Degree of Utilization, x	0.05	0.23	0.23	0.07	0.27	0.27	0.20	0.35

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	0.90	0.90	0.23	1.10	1.07	0.74	1.59
95th-Percentile Queue Length [ft]	4.04	22.46	22.41	5.68	27.60	26.86	18.51	39.77
Approach Delay [s/veh]	10.53			10.72			10.82	12.35
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.02							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.300

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	46	3	12	45	26	16	46	15	6	118	13
Total Analysis Volume [veh/h]	76	182	12	47	179	104	64	186	60	22	472	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	29	29	6	27	27	7	16	16	4	12	12
g / C, Green / Cycle	0.11	0.41	0.41	0.09	0.38	0.38	0.10	0.23	0.23	0.05	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.01	0.01	0.05	0.07	0.04	0.05	0.04	0.01	0.14	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	374	1393	622	293	1310	585	178	774	345	89	596	266
d1, Uniform Delay [s]	28.33	13.06	12.47	29.65	14.15	14.38	29.31	22.26	21.92	31.98	27.80	24.85
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.19	0.06	0.25	0.22	0.66	1.22	0.16	0.24	1.42	2.41	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.13	0.02	0.16	0.14	0.18	0.36	0.24	0.17	0.25	0.79	0.20
d, Delay for Lane Group [s/veh]	28.60	13.26	12.52	29.90	14.36	15.05	30.53	22.42	22.15	33.40	30.21	25.22
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.54	0.78	0.10	0.34	0.81	1.02	0.97	1.13	0.73	0.36	3.57	0.72
50th-Percentile Queue Length [ft/ln]	13.49	19.50	2.58	8.60	20.36	25.59	24.25	28.20	18.20	9.07	89.21	17.91
95th-Percentile Queue Length [veh/ln]	0.97	1.40	0.19	0.62	1.47	1.84	1.75	2.03	1.31	0.65	6.42	1.29
95th-Percentile Queue Length [ft/ln]	24.28	35.10	4.65	15.48	36.64	46.05	43.66	50.76	32.77	16.32	160.58	32.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.60	13.26	12.52	29.90	14.36	15.05	30.53	22.42	22.15	33.40	30.21	25.22
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.54			16.79			24.04			29.85		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.38											
Intersection LOS	C											
Intersection V/C	0.300											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.299

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	12	30	204	402	141
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	3	9	59	116	41
Total Analysis Volume [veh/h]	97	14	34	234	462	162
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.03	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	21.11	16.62	8.86	0.00	0.00	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.38	1.38	0.11	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	34.48	34.48	2.73	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.54		1.12		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.57					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	57	5	34	76	10	7	55	14	6	125	43
Total Analysis Volume [veh/h]	57	227	20	136	302	41	29	220	58	24	500	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	21	0	17	26	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	6	26	26	18	18	18	18	18	18
g / C, Green / Cycle	0.07	0.39	0.39	0.11	0.43	0.43	0.30	0.30	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.07	0.08	0.10	0.10	0.03	0.12	0.04	0.02	0.28	0.11
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1726	912	1800	1530	1179	1800	1530
c, Capacity [veh/h]	127	710	690	182	768	737	120	540	459	320	540	459
d1, Uniform Delay [s]	26.69	11.86	11.87	26.09	10.94	10.96	30.08	16.79	15.32	21.16	20.41	16.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.50	0.54	0.56	5.94	0.69	0.72	1.03	0.49	0.12	0.10	8.37	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

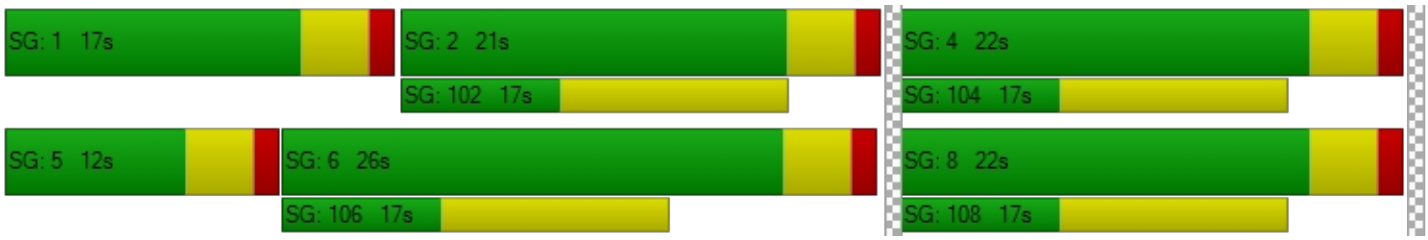
X, volume / capacity	0.45	0.18	0.18	0.75	0.23	0.23	0.24	0.41	0.13	0.07	0.93	0.38
d, Delay for Lane Group [s/veh]	29.19	12.40	12.44	32.03	11.63	11.68	31.11	17.29	15.45	21.25	28.78	17.15
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.78	0.95	0.94	1.95	1.26	1.23	0.41	2.05	0.49	0.26	6.72	1.61
50th-Percentile Queue Length [ft/ln]	19.41	23.73	23.48	48.65	31.43	30.66	10.21	51.29	12.28	6.38	167.95	40.37
95th-Percentile Queue Length [veh/ln]	1.40	1.71	1.69	3.50	2.26	2.21	0.73	3.69	0.88	0.46	10.97	2.91
95th-Percentile Queue Length [ft/ln]	34.94	42.72	42.27	87.57	56.58	55.18	18.37	92.33	22.11	11.49	274.21	72.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.19	12.42	12.44	32.03	11.65	11.68	31.11	17.29	15.45	21.25	28.78	17.15
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	15.56			17.44			18.25			25.62		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.45											
Intersection LOS	C											
Intersection V/C	0.493											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 1 Existing
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**125**	**635**	**68**	**271**	**661**	**42**	**57**	**581**	**188**	**34**	**241**	**132**	**3035**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**24**	**916**	**37**	**88**	**888**	**49**	**8**	**5**	**13**	**44**	**9**	**239**	**2320**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**54**	**452**	**13**	**76**	**459**	**304**	**236**	**223**	**39**	**63**	**284**	**170**	**2373**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	2	284	5	7	521	829
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**10**	**2**	**284**	**5**	**7**	**521**	**829**

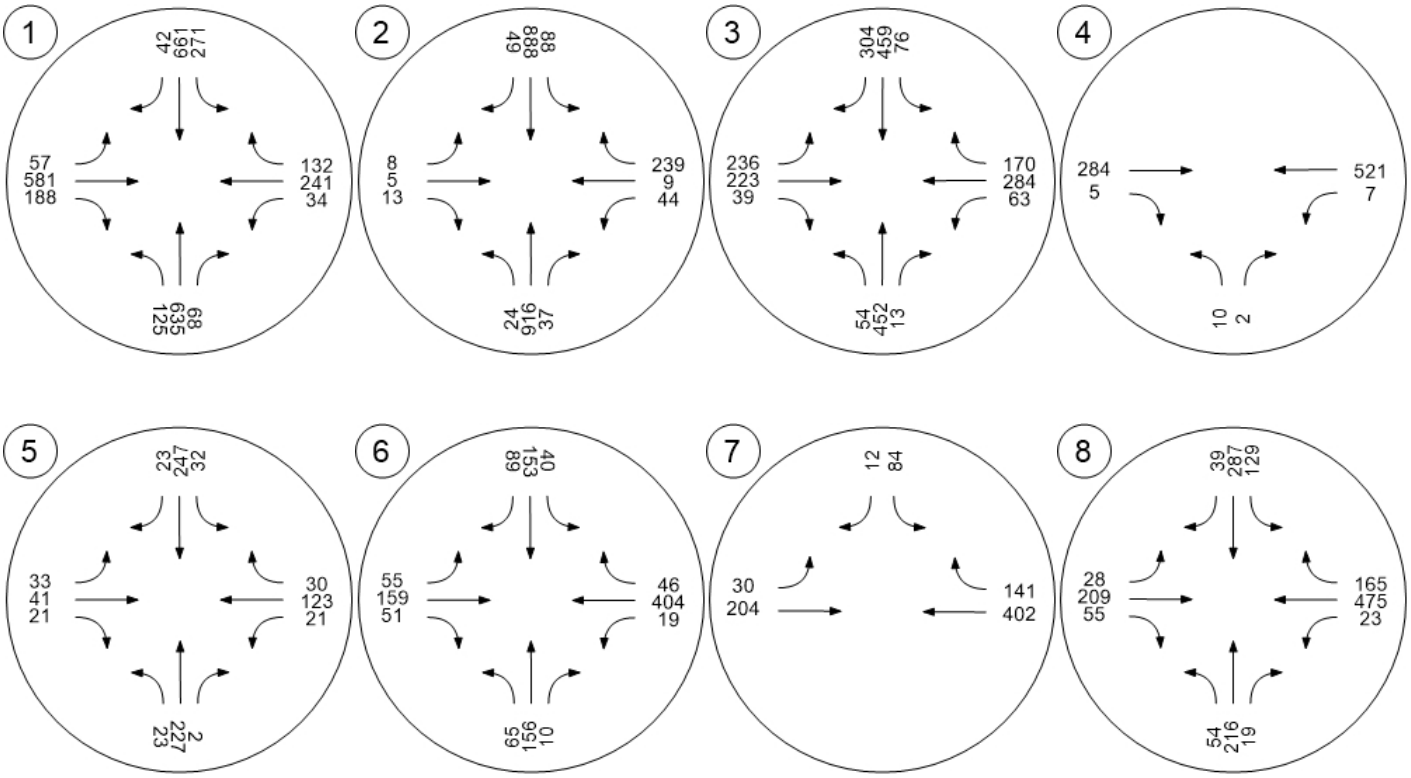
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**23**	**227**	**2**	**32**	**247**	**23**	**33**	**41**	**21**	**21**	**123**	**30**	**823**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**65**	**156**	**10**	**40**	**153**	**89**	**55**	**159**	**51**	**19**	**404**	**46**	**1247**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**84**	**12**	**30**	**204**	**402**	**141**	**873**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**54**	**216**	**19**	**129**	**287**	**39**	**28**	**209**	**55**	**23**	**475**	**165**	**1699**

Traffic Volume - Future Total Volume



TTM 37884

Vistro File: C:\...\PM.vistro
Report File: C:\...\PM E.pdf

Scenario 1 Existing
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Right	0.603	26.0	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.404	13.4	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.428	21.2	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.045	17.2	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.274	10.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.211	22.4	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.053	16.3	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.397	18.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	204	11	61	179	16	17	117	41	9	160	84
Total Analysis Volume [veh/h]	263	818	42	244	717	63	67	467	163	38	639	335
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	22	0	11	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	7	17	17	5	21	21	3	20	20
g / C, Green / Cycle	0.11	0.26	0.26	0.11	0.26	0.26	0.08	0.33	0.33	0.05	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.08	0.17	0.03	0.07	0.15	0.04	0.04	0.14	0.11	0.02	0.29	0.29
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	356	1299	405	354	1297	405	130	1127	503	92	552	489
d1, Uniform Delay [s]	28.16	21.09	18.07	28.01	20.60	18.34	28.90	16.95	16.38	29.77	21.90	21.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.02	2.33	0.51	2.38	1.70	0.82	3.15	0.24	0.37	2.94	11.63	12.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.63	0.10	0.69	0.55	0.16	0.52	0.41	0.32	0.41	0.94	0.94
d, Delay for Lane Group [s/veh]	31.18	23.41	18.58	30.39	22.30	19.16	32.05	17.19	16.75	32.72	33.53	34.70
Lane Group LOS	C	C	B	C	C	B	C	B	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.94	3.46	0.48	1.77	2.93	0.73	1.03	2.35	1.61	0.60	8.25	7.47
50th-Percentile Queue Length [ft/ln]	48.58	86.57	11.94	44.31	73.23	18.29	25.72	58.63	40.22	15.02	206.37	186.77
95th-Percentile Queue Length [veh/ln]	3.50	6.23	0.86	3.19	5.27	1.32	1.85	4.22	2.90	1.08	12.97	11.95
95th-Percentile Queue Length [ft/ln]	87.45	155.83	21.50	79.76	131.82	32.92	46.29	105.54	72.39	27.04	324.17	298.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.18	23.41	18.58	30.39	22.30	19.16	32.05	17.19	16.75	32.72	33.75	34.70
Movement LOS	C	C	B	C	C	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	25.05			24.04			18.52			34.03		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	25.96											
Intersection LOS	C											
Intersection V/C	0.603											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.404

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	257	13	38	318	6	3	3	5	8	1	27
Total Analysis Volume [veh/h]	15	1026	53	151	1272	25	11	12	20	31	3	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	40	40	8	46	46	4	4	7	7
g / C, Green / Cycle	0.03	0.53	0.53	0.11	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.03	0.09	0.25	0.25	0.01	0.01	0.02	0.07
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1782	1758	1530	1714	1536
c, Capacity [veh/h]	45	2589	808	184	2087	1085	99	86	164	147
d1, Uniform Delay [s]	35.95	10.58	8.67	32.84	7.64	7.64	33.90	33.90	31.28	33.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.36	0.46	0.16	8.85	0.59	1.14	1.19	1.36	0.55	7.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

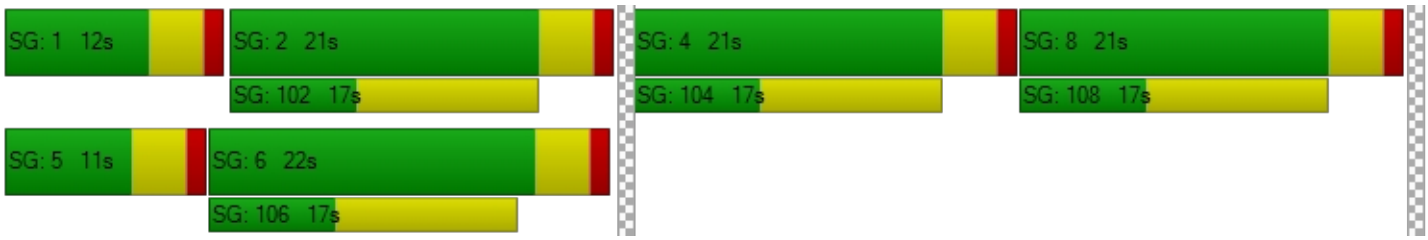
X, volume / capacity	0.34	0.40	0.07	0.82	0.41	0.41	0.23	0.23	0.19	0.75
d, Delay for Lane Group [s/veh]	40.31	11.04	8.83	41.69	8.24	8.79	35.09	35.26	31.83	40.71
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.30	2.62	0.35	2.94	2.76	3.04	0.43	0.38	0.52	2.17
50th-Percentile Queue Length [ft/ln]	7.51	65.45	8.84	73.61	69.08	75.97	10.74	9.44	12.88	54.21
95th-Percentile Queue Length [veh/ln]	0.54	4.71	0.64	5.30	4.97	5.47	0.77	0.68	0.93	3.90
95th-Percentile Queue Length [ft/ln]	13.53	117.81	15.91	132.49	124.34	136.74	19.33	17.00	23.19	97.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.31	11.04	8.83	41.69	8.42	8.79	35.09	35.09	35.26	31.83	40.71	40.71
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.33			11.90			35.17			38.77		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	13.44											
Intersection LOS	B											
Intersection V/C	0.404											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	145	17	58	165	41	43	29	4	34	49	43
Total Analysis Volume [veh/h]	43	581	69	233	662	164	171	114	16	138	195	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	8	11	11	7	10	10
g / C, Green / Cycle	0.06	0.37	0.37	0.11	0.42	0.42	0.12	0.17	0.17	0.10	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.05	0.07	0.14	0.11	0.10	0.03	0.01	0.08	0.11	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	104	1832	572	357	2061	643	212	585	261	177	271	230
d1, Uniform Delay [s]	29.55	14.53	13.41	27.97	12.68	12.29	27.84	23.22	22.68	28.54	26.43	26.59
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.46	0.43	2.02	0.41	0.96	7.04	0.16	0.10	7.20	3.60	5.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.32	0.12	0.65	0.32	0.26	0.81	0.19	0.06	0.78	0.72	0.76
d, Delay for Lane Group [s/veh]	32.17	14.98	13.84	30.00	13.10	13.24	34.88	23.38	22.78	35.74	30.03	31.61
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	1.73	0.61	1.62	1.72	1.35	2.71	0.67	0.19	2.26	2.86	2.64
50th-Percentile Queue Length [ft/ln]	16.47	43.22	15.29	40.54	43.01	33.82	67.71	16.86	4.71	56.44	71.40	66.04
95th-Percentile Queue Length [veh/ln]	1.19	3.11	1.10	2.92	3.10	2.43	4.88	1.21	0.34	4.06	5.14	4.76
95th-Percentile Queue Length [ft/ln]	29.65	77.80	27.53	72.97	77.42	60.87	121.88	30.34	8.48	101.59	128.53	118.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.17	14.98	13.84	30.00	13.10	13.24	34.88	23.38	22.78	35.74	30.03	31.61
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.94			16.84			29.88			32.13		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.16											
Intersection LOS	C											
Intersection V/C	0.428											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.045

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	13	8	425	33	9	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	8	425	33	9	416
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	111	9	2	109
Total Analysis Volume [veh/h]	14	8	444	34	9	434
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	17.20	11.41	0.00	0.00	8.32	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	4.61	4.61	0.00	0.00	0.62	0.62
d_A, Approach Delay [s/veh]	15.10		0.00		0.17	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.274

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	82	3	19	79	5	5	21	7	1	18	6
Total Analysis Volume [veh/h]	58	327	13	77	314	21	22	85	26	6	71	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	572	622	628	573	623	633	584	583
Degree of Utilization, x	0.10	0.27	0.27	0.13	0.27	0.26	0.23	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.34	1.11	1.09	0.46	1.08	1.06	0.87	0.63
95th-Percentile Queue Length [ft]	8.43	27.70	27.36	11.56	27.05	26.51	21.80	15.74
Approach Delay [s/veh]	10.48			10.40			10.98	10.48
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	10.51							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.211

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	62	4	16	42	13	7	74	30	2	77	13
Total Analysis Volume [veh/h]	87	249	15	62	169	52	30	295	120	7	310	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	33	33	7	31	31	5	13	13	1	10	10
g / C, Green / Cycle	0.12	0.46	0.46	0.10	0.45	0.45	0.06	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.01	0.02	0.05	0.03	0.02	0.09	0.08	0.00	0.09	0.03
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	394	1583	707	340	1527	682	112	645	288	35	489	218
d1, Uniform Delay [s]	28.04	10.97	10.28	28.85	11.35	11.17	31.23	25.34	25.13	33.87	28.38	26.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.21	0.06	0.25	0.15	0.22	1.26	0.51	0.96	2.84	1.36	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.16	0.02	0.18	0.11	0.08	0.27	0.46	0.42	0.20	0.63	0.24
d, Delay for Lane Group [s/veh]	28.32	11.18	10.33	29.11	11.50	11.39	32.48	25.85	26.09	36.71	29.75	27.31
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.61	0.94	0.11	0.45	0.65	0.42	0.48	1.99	1.64	0.13	2.29	0.74
50th-Percentile Queue Length [ft/ln]	15.34	23.52	2.79	11.13	16.28	10.42	12.00	49.66	41.07	3.37	57.30	18.58
95th-Percentile Queue Length [veh/ln]	1.10	1.69	0.20	0.80	1.17	0.75	0.86	3.58	2.96	0.24	4.13	1.34
95th-Percentile Queue Length [ft/ln]	27.62	42.33	5.03	20.04	29.30	18.76	21.60	89.39	73.93	6.07	103.15	33.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.32	11.18	10.33	29.11	11.50	11.39	32.48	25.85	26.09	36.71	29.75	27.31
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.39			15.34			26.36			29.53		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.36											
Intersection LOS	C											
Intersection V/C	0.211											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	7	7	363	354	14
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	2	2	103	100	4
Total Analysis Volume [veh/h]	18	8	8	410	400	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.27	11.19	8.14	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.21	0.21	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.24	5.24	0.52	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.71		0.16		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.52					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	79	15	34	75	5	8	82	14	6	79	46
Total Analysis Volume [veh/h]	48	317	60	136	302	22	31	328	57	24	317	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	26	26	6	29	29	15	15	15	15	15	15
g / C, Green / Cycle	0.07	0.44	0.44	0.11	0.48	0.48	0.26	0.26	0.26	0.26	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.08	0.09	0.09	0.03	0.18	0.04	0.02	0.18	0.12
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1758	1079	1800	1530	1069	1800	1530
c, Capacity [veh/h]	114	789	747	182	861	841	193	460	391	185	460	391
d1, Uniform Delay [s]	26.97	10.62	10.64	26.09	9.00	9.01	26.93	20.38	17.31	27.15	20.23	18.95
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.45	0.73	0.79	5.94	0.49	0.50	0.39	2.06	0.17	0.31	1.85	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

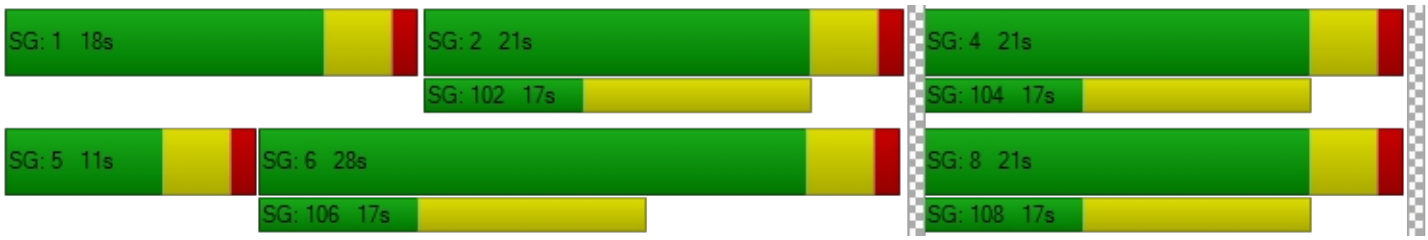
X, volume / capacity	0.42	0.24	0.25	0.75	0.19	0.19	0.16	0.71	0.15	0.13	0.69	0.47
d, Delay for Lane Group [s/veh]	29.42	11.35	11.43	32.03	9.49	9.51	27.32	22.45	17.48	27.47	22.08	19.83
Lane Group LOS	C	B	B	C	A	A	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.66	1.36	1.32	1.95	1.00	0.98	0.40	3.72	0.53	0.31	3.56	1.90
50th-Percentile Queue Length [ft/ln]	16.52	33.97	32.99	48.65	24.95	24.61	9.91	93.11	13.23	7.70	88.89	47.50
95th-Percentile Queue Length [veh/ln]	1.19	2.45	2.38	3.50	1.80	1.77	0.71	6.70	0.95	0.55	6.40	3.42
95th-Percentile Queue Length [ft/ln]	29.73	61.14	59.38	87.57	44.91	44.29	17.84	167.59	23.81	13.86	160.00	85.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.42	11.38	11.43	32.03	9.50	9.51	27.32	22.45	17.48	27.47	22.08	19.83
Movement LOS	C	B	B	C	A	A	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	13.43			16.16			22.13			21.54		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.43											
Intersection LOS	B											
Intersection V/C	0.397											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: C:\...\PM E.pdf

Scenario 1 Existing
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**250**	**776**	**40**	**232**	**680**	**60**	**64**	**443**	**155**	**36**	**606**	**318**	**3660**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**940**	**49**	**138**	**1165**	**23**	**10**	**11**	**18**	**28**	**3**	**99**	**2498**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**42**	**565**	**67**	**226**	**643**	**159**	**166**	**111**	**16**	**134**	**190**	**169**	**2488**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	8	425	33	9	416	904
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**13**	**8**	**425**	**33**	**9**	**416**	**904**

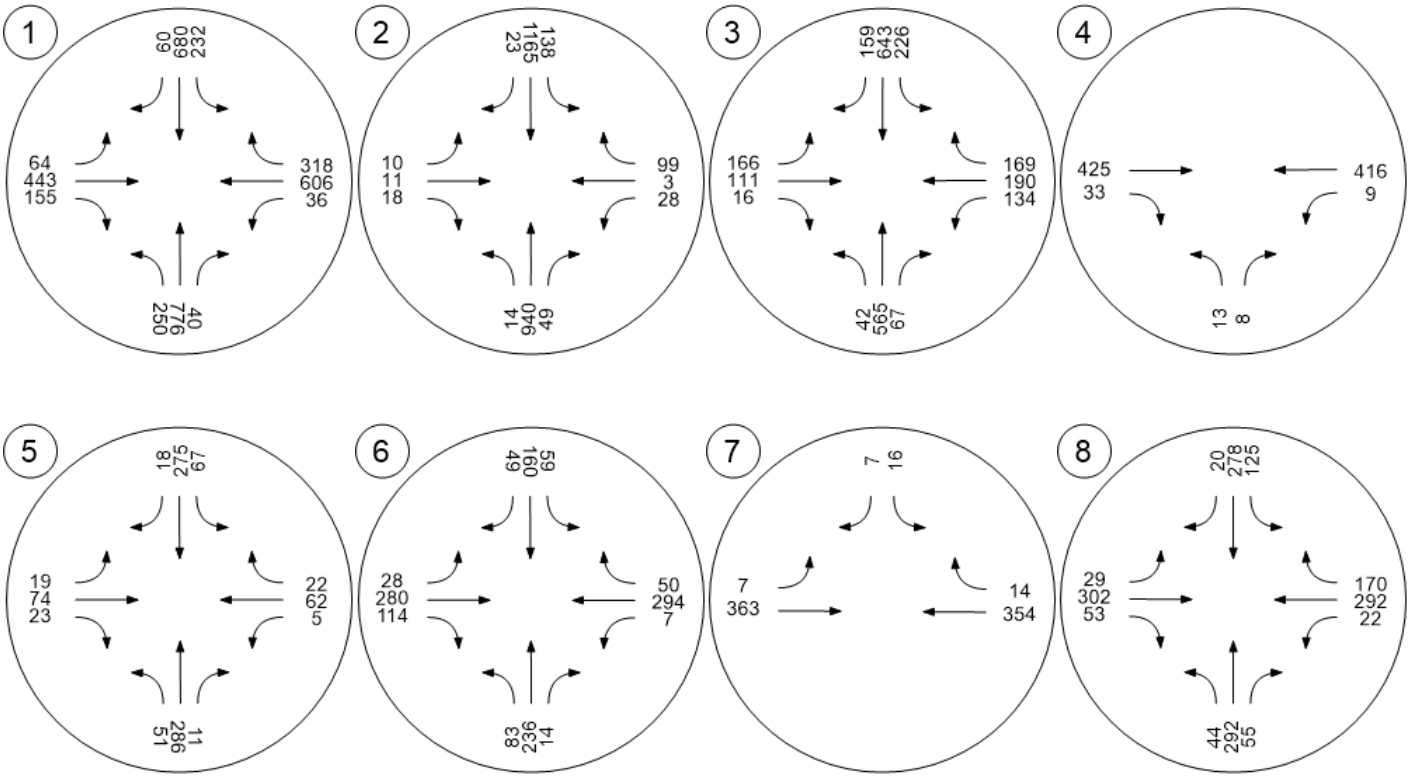
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**51**	**286**	**11**	**67**	**275**	**18**	**19**	**74**	**23**	**5**	**62**	**22**	**913**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**83**	**236**	**14**	**59**	**160**	**49**	**28**	**280**	**114**	**7**	**294**	**50**	**1374**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**16**	**7**	**7**	**363**	**354**	**14**	**761**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**44**	**292**	**55**	**125**	**278**	**20**	**29**	**302**	**53**	**22**	**292**	**170**	**1682**

Traffic Volume - Future Total Volume



Existing Plus Project – Proposed Project

TTM 37884

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Report File: C:\...\AM Ep.pdf

Scenario 2 Existing Plus Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.494	21.7	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.488	17.2	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.615	24.3	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.116	21.1	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.355	11.0	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.307	23.4	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.319	22.6	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.495	20.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.494

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	9	3	0	3	0	0	0	2	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	644	71	271	664	42	57	581	190	35	241	132
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	173	19	73	178	11	15	156	51	9	65	35
Total Analysis Volume [veh/h]	141	692	76	291	714	45	61	625	204	38	259	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	8	24	24	5	15	15	4	14	14
g / C, Green / Cycle	0.10	0.36	0.36	0.12	0.37	0.37	0.07	0.23	0.23	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.05	0.09	0.15	0.03	0.04	0.18	0.13	0.02	0.12	0.12
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	336	1743	544	392	1826	570	127	774	346	96	374	330
d1, Uniform Delay [s]	27.56	15.79	14.27	27.84	15.05	13.25	29.01	23.92	22.57	29.75	23.19	23.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	0.68	0.54	2.80	0.63	0.27	2.79	2.06	1.61	2.64	1.32	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.40	0.14	0.74	0.39	0.08	0.48	0.81	0.59	0.40	0.56	0.58
d, Delay for Lane Group [s/veh]	28.40	16.47	14.80	30.64	15.68	13.52	31.79	25.98	24.17	32.40	24.51	24.91
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	2.28	0.73	2.13	2.27	0.40	0.93	4.21	2.61	0.60	2.69	2.50
50th-Percentile Queue Length [ft/ln]	24.38	56.91	18.16	53.30	56.76	10.07	23.34	105.31	65.31	14.91	67.20	62.43
95th-Percentile Queue Length [veh/ln]	1.76	4.10	1.31	3.84	4.09	0.73	1.68	7.58	4.70	1.07	4.84	4.49
95th-Percentile Queue Length [ft/ln]	43.89	102.43	32.68	95.95	102.16	18.13	42.02	189.46	117.56	26.84	120.96	112.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.40	16.47	14.80	30.64	15.68	13.52	31.79	25.98	24.17	32.40	24.59	24.91
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.18			19.74			25.96			25.37		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.74											
Intersection LOS	C											
Intersection V/C	0.494											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.488

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	934	37	88	894	49	8	5	13	44	9	239
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	247	10	23	236	13	2	1	3	12	2	63
Total Analysis Volume [veh/h]	25	987	39	93	945	52	8	5	14	47	10	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	35	35	6	38	38	3	3	15	15
g / C, Green / Cycle	0.04	0.47	0.47	0.08	0.51	0.51	0.04	0.04	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.03	0.05	0.19	0.19	0.01	0.01	0.03	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1746	1530	1714	1539
c, Capacity [veh/h]	67	2299	717	138	1750	895	72	63	337	302
d1, Uniform Delay [s]	35.21	13.27	10.87	33.56	11.14	11.14	34.79	34.85	24.94	29.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.46	0.59	0.14	5.56	0.62	1.21	1.19	1.76	0.19	7.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

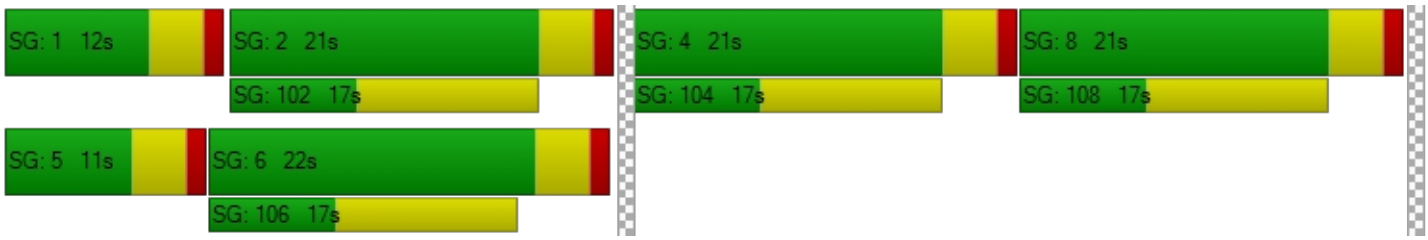
X, volume / capacity	0.37	0.43	0.05	0.67	0.38	0.38	0.18	0.22	0.14	0.87
d, Delay for Lane Group [s/veh]	38.66	13.86	11.02	39.12	11.76	12.36	35.98	36.61	25.13	36.91
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	3.02	0.31	1.75	2.85	3.07	0.25	0.28	0.67	4.90
50th-Percentile Queue Length [ft/ln]	11.77	75.51	7.75	43.72	71.24	76.68	6.27	6.89	16.66	122.56
95th-Percentile Queue Length [veh/ln]	0.85	5.44	0.56	3.15	5.13	5.52	0.45	0.50	1.20	8.53
95th-Percentile Queue Length [ft/ln]	21.18	135.93	13.95	78.69	128.23	138.03	11.29	12.41	29.99	213.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.66	13.86	11.02	39.12	11.94	12.36	35.98	35.98	36.61	25.13	36.91	36.91
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	14.34			14.28			36.31			35.13		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	17.15											
Intersection LOS	B											
Intersection V/C	0.488											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	6	0	0	0	2	0	6	6	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	452	15	82	459	304	236	225	39	69	290	188
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	116	4	21	118	78	61	58	10	18	75	48
Total Analysis Volume [veh/h]	56	465	15	84	473	313	243	232	40	71	299	194
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	23	23	6	24	24	12	20	20	5	14	14
g / C, Green / Cycle	0.07	0.33	0.33	0.08	0.34	0.34	0.17	0.29	0.29	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.01	0.03	0.10	0.20	0.14	0.07	0.03	0.04	0.17	0.13
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1587	495	274	1655	516	288	993	443	132	357	303
d1, Uniform Delay [s]	31.52	17.76	16.23	30.35	17.06	19.38	28.32	19.02	18.20	31.24	27.08	25.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.00	0.47	0.11	0.63	0.43	5.21	6.61	0.12	0.09	3.40	5.26	2.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

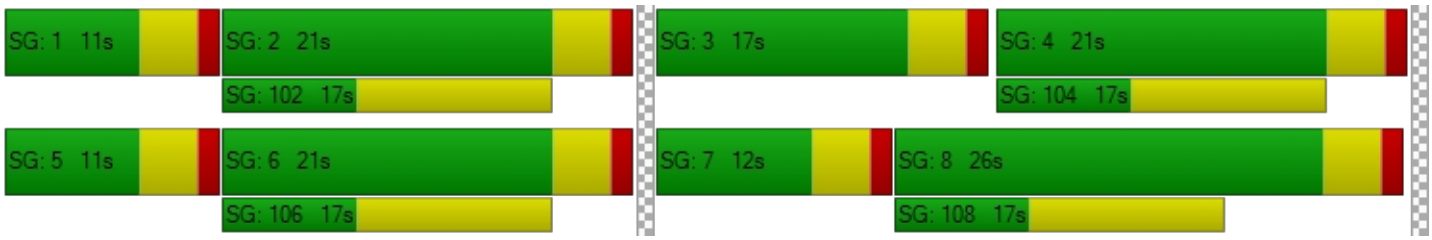
X, volume / capacity	0.48	0.29	0.03	0.31	0.29	0.61	0.84	0.23	0.09	0.54	0.84	0.64
d, Delay for Lane Group [s/veh]	34.51	18.23	16.34	30.98	17.50	24.60	34.93	19.13	18.29	34.64	32.35	28.11
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	1.67	0.16	0.62	1.61	4.23	4.05	1.27	0.42	1.19	4.85	2.87
50th-Percentile Queue Length [ft/ln]	23.24	41.76	3.93	15.54	40.28	105.76	101.23	31.68	10.59	29.84	121.13	71.71
95th-Percentile Queue Length [veh/ln]	1.67	3.01	0.28	1.12	2.90	7.60	7.29	2.28	0.76	2.15	8.46	5.16
95th-Percentile Queue Length [ft/ln]	41.84	75.16	7.08	27.97	72.50	190.09	182.22	57.02	19.06	53.72	211.38	129.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	18.23	16.34	30.98	17.50	24.60	34.93	19.13	18.29	34.64	32.35	28.11
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	19.87			21.35			26.52			31.18		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	24.34											
Intersection LOS	C											
Intersection V/C	0.615											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	30	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	2	28	0	30	10	284	5	7	521	10
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	7	0	8	3	75	1	2	138	3
Total Analysis Volume [veh/h]	11	0	2	30	0	32	11	300	5	7	551	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.12	0.00	0.06	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	20.75	18.75	10.53	21.07	20.22	13.90	8.57	0.00	0.00	7.86	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.15	0.63	0.63	0.63	0.03	0.01	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.82	3.82	3.82	15.72	15.72	15.72	0.74	0.37	0.00	0.42	0.42	0.42
d_A, Approach Delay [s/veh]	19.18			17.37			0.30			0.10		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.54											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.355

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	230	2	32	248	23	33	41	21	21	123	30
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	70	1	10	75	7	10	12	6	6	37	9
Total Analysis Volume [veh/h]	28	278	2	39	300	28	40	50	25	25	149	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	546	591	592	552	598	610	574	593
Degree of Utilization, x	0.05	0.24	0.24	0.07	0.27	0.27	0.20	0.35

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	0.92	0.91	0.23	1.11	1.08	0.74	1.59
95th-Percentile Queue Length [ft]	4.05	22.90	22.85	5.69	27.76	27.02	18.55	39.87
Approach Delay [s/veh]	10.57			10.74			10.84	12.38
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.04							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.307

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	3	25	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	156	10	40	153	90	58	184	51	19	413	46
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	46	3	12	45	26	17	54	15	6	121	13
Total Analysis Volume [veh/h]	76	182	12	47	179	105	68	215	60	22	482	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	28	28	6	27	27	7	16	16	4	12	12
g / C, Green / Cycle	0.11	0.40	0.40	0.09	0.38	0.38	0.11	0.23	0.23	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.01	0.01	0.05	0.07	0.04	0.06	0.04	0.01	0.14	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	374	1374	613	293	1290	576	183	794	354	89	606	270
d1, Uniform Delay [s]	28.33	13.32	12.71	29.65	14.41	14.67	29.18	22.13	21.59	31.98	27.71	24.68
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.20	0.06	0.25	0.22	0.70	1.25	0.18	0.22	1.42	2.44	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.13	0.02	0.16	0.14	0.18	0.37	0.27	0.17	0.25	0.80	0.20
d, Delay for Lane Group [s/veh]	28.60	13.52	12.77	29.90	14.64	15.36	30.43	22.31	21.81	33.40	30.14	25.04
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.54	0.79	0.10	0.34	0.83	1.05	1.03	1.30	0.72	0.36	3.64	0.71
50th-Percentile Queue Length [ft/ln]	13.49	19.79	2.62	8.60	20.64	26.22	25.71	32.57	18.01	9.07	91.03	17.82
95th-Percentile Queue Length [veh/ln]	0.97	1.42	0.19	0.62	1.49	1.89	1.85	2.34	1.30	0.65	6.55	1.28
95th-Percentile Queue Length [ft/ln]	24.28	35.62	4.72	15.48	37.16	47.20	46.27	58.62	32.42	16.32	163.86	32.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.60	13.52	12.77	29.90	14.64	15.36	30.43	22.31	21.81	33.40	30.14	25.04
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.73			17.03			23.83			29.78		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.45											
Intersection LOS	C											
Intersection V/C	0.307											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.319

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	22	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	13	33	226	410	141
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	4	9	65	118	41
Total Analysis Volume [veh/h]	97	15	38	260	471	162
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.03	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	22.64	17.50	8.91	0.00	0.00	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.51	1.51	0.12	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	37.67	37.67	3.09	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	21.95		1.14		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.68					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	4	10	9	3	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	216	19	129	287	43	38	218	58	23	478	165
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	57	5	34	76	11	10	57	15	6	126	43
Total Analysis Volume [veh/h]	58	227	20	136	302	45	40	229	61	24	503	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	21	0	17	26	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	6	26	26	18	18	18	18	18	18
g / C, Green / Cycle	0.07	0.39	0.39	0.11	0.43	0.43	0.30	0.30	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.07	0.08	0.10	0.10	0.04	0.13	0.04	0.02	0.28	0.11
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1720	910	1800	1530	1170	1800	1530
c, Capacity [veh/h]	128	710	690	182	767	733	120	540	459	313	540	459
d1, Uniform Delay [s]	26.67	11.86	11.87	26.09	10.99	11.00	30.08	16.89	15.35	21.40	20.46	16.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.50	0.54	0.56	5.94	0.70	0.74	1.61	0.53	0.13	0.10	8.99	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

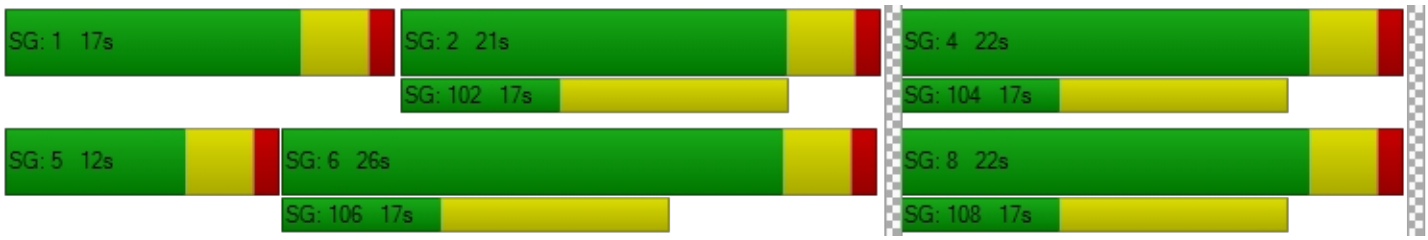
X, volume / capacity	0.45	0.18	0.18	0.75	0.23	0.23	0.33	0.42	0.13	0.08	0.93	0.38
d, Delay for Lane Group [s/veh]	29.17	12.40	12.44	32.03	11.69	11.74	31.69	17.42	15.48	21.50	29.45	17.15
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	0.95	0.94	1.95	1.28	1.24	0.57	2.15	0.52	0.26	6.86	1.61
50th-Percentile Queue Length [ft/ln]	19.74	23.74	23.48	48.65	31.97	31.11	14.24	53.74	12.95	6.44	171.41	40.37
95th-Percentile Queue Length [veh/ln]	1.42	1.71	1.69	3.50	2.30	2.24	1.03	3.87	0.93	0.46	11.15	2.91
95th-Percentile Queue Length [ft/ln]	35.53	42.72	42.27	87.57	57.54	55.99	25.63	96.73	23.30	11.58	278.77	72.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.17	12.42	12.44	32.03	11.71	11.74	31.69	17.42	15.48	21.50	29.45	17.15
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	15.60			17.44			18.79			26.13		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.72											
Intersection LOS	C											
Intersection V/C	0.495											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 2 Existing Plus Project
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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	9	3	0	3	0	0	0	2	1	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**131**	**644**	**71**	**271**	**664**	**42**	**57**	**581**	**190**	**35**	**241**	**132**	**3059**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	18	0	0	6	0	0	0	0	0	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**24**	**934**	**37**	**88**	**894**	**49**	**8**	**5**	**13**	**44**	**9**	**239**	**2344**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	2	6	0	0	0	2	0	6	6	18	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**54**	**452**	**15**	**82**	**459**	**304**	**236**	**225**	**39**	**69**	**290**	**188**	**2413**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	28	0	30	10	0	0	0	0	10	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**10**	**0**	**2**	**28**	**0**	**30**	**10**	**284**	**5**	**7**	**521**	**10**	**907**

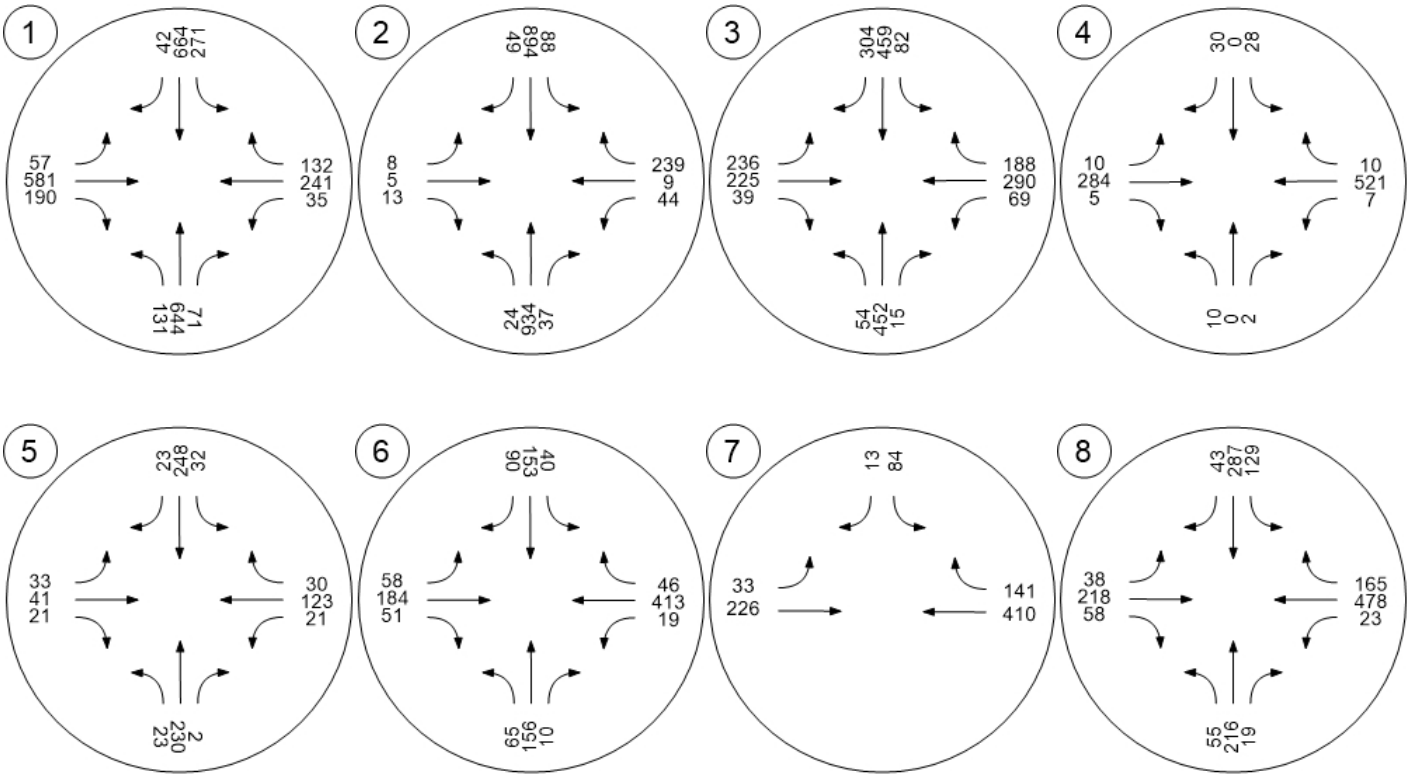
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	1	0	0	0	0	0	0	0	4
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**23**	**230**	**2**	**32**	**248**	**23**	**33**	**41**	**21**	**21**	**123**	**30**	**827**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	3	25	0	0	9	0	38
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**65**	**156**	**10**	**40**	**153**	**90**	**58**	**184**	**51**	**19**	**413**	**46**	**1285**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	3	22	8	0	34
		Other	0	0	0	0	0	0	0
		Future Total	**84**	**13**	**33**	**226**	**410**	**141**	**907**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	4	10	9	3	0	3	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**55**	**216**	**19**	**129**	**287**	**43**	**38**	**218**	**58**	**23**	**478**	**165**	**1729**

Traffic Volume - Future Total Volume



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Scenario 2 Existing Plus Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Right	0.605	26.0	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.407	13.4	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.443	21.5	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.088	23.2	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.275	10.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.222	22.7	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.057	17.1	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.400	18.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	2	0	10	0	0	0	6	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	254	782	42	232	690	60	64	443	161	39	606	318
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	206	11	61	182	16	17	117	42	10	160	84
Total Analysis Volume [veh/h]	268	824	44	244	727	63	67	467	170	41	639	335
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	22	0	11	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	7	17	17	5	21	21	4	20	20
g / C, Green / Cycle	0.11	0.26	0.26	0.11	0.26	0.26	0.08	0.33	0.33	0.06	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.08	0.17	0.03	0.07	0.15	0.04	0.04	0.14	0.11	0.02	0.29	0.29
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	359	1299	405	354	1292	403	130	1118	499	97	552	489
d1, Uniform Delay [s]	28.15	21.12	18.09	28.01	20.70	18.39	28.90	17.09	16.61	29.65	21.90	21.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.12	2.37	0.54	2.38	1.78	0.82	3.15	0.25	0.40	2.91	11.62	12.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.63	0.11	0.69	0.56	0.16	0.52	0.42	0.34	0.42	0.94	0.94
d, Delay for Lane Group [s/veh]	31.26	23.49	18.63	30.39	22.48	19.21	32.05	17.34	17.01	32.56	33.53	34.70
Lane Group LOS	C	C	B	C	C	B	C	B	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.98	3.50	0.50	1.77	2.99	0.73	1.03	2.36	1.70	0.64	8.25	7.47
50th-Percentile Queue Length [ft/ln]	49.60	87.41	12.54	44.31	74.66	18.33	25.72	59.00	42.45	16.11	206.36	186.78
95th-Percentile Queue Length [veh/ln]	3.57	6.29	0.90	3.19	5.38	1.32	1.85	4.25	3.06	1.16	12.97	11.95
95th-Percentile Queue Length [ft/ln]	89.28	157.34	22.57	79.76	134.40	32.99	46.29	106.20	76.40	29.00	324.16	298.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.26	23.49	18.63	30.39	22.48	19.21	32.05	17.34	17.01	32.56	33.75	34.70
Movement LOS	C	C	B	C	C	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	25.14			24.15			18.66			34.02		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	26.02											
Intersection LOS	C											
Intersection V/C	0.605											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	19	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	952	49	138	1184	23	10	11	18	28	3	99
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	260	13	38	323	6	3	3	5	8	1	27
Total Analysis Volume [veh/h]	15	1039	53	151	1293	25	11	12	20	31	3	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	40	40	8	46	46	4	4	7	7
g / C, Green / Cycle	0.03	0.53	0.53	0.11	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.03	0.09	0.25	0.25	0.01	0.01	0.02	0.07
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	45	2589	808	184	2087	1086	99	86	164	147
d1, Uniform Delay [s]	35.95	10.62	8.67	32.84	7.69	7.69	33.90	33.90	31.28	33.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.36	0.47	0.16	8.85	0.61	1.17	1.19	1.36	0.55	7.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

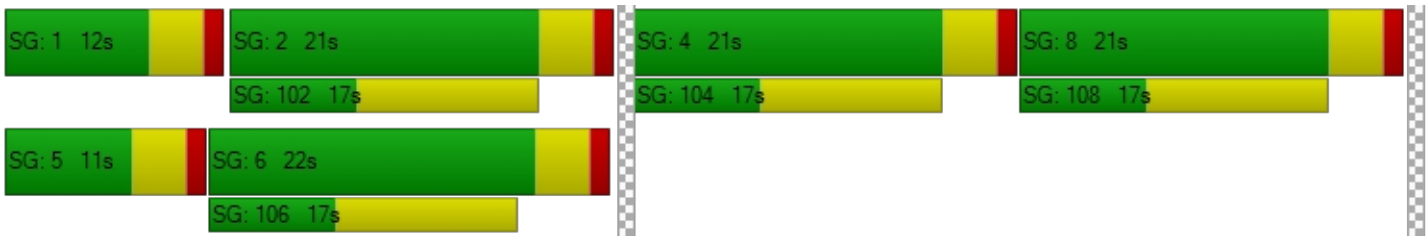
X, volume / capacity	0.34	0.40	0.07	0.82	0.42	0.42	0.23	0.23	0.19	0.75
d, Delay for Lane Group [s/veh]	40.31	11.08	8.83	41.69	8.30	8.86	35.09	35.26	31.83	40.71
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.30	2.66	0.35	2.94	2.82	3.11	0.43	0.38	0.52	2.17
50th-Percentile Queue Length [ft/ln]	7.51	66.51	8.84	73.61	70.60	77.67	10.74	9.44	12.88	54.21
95th-Percentile Queue Length [veh/ln]	0.54	4.79	0.64	5.30	5.08	5.59	0.77	0.68	0.93	3.90
95th-Percentile Queue Length [ft/ln]	13.53	119.72	15.91	132.49	127.07	139.81	19.33	17.00	23.19	97.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.31	11.08	8.83	41.69	8.48	8.86	35.09	35.09	35.26	31.83	40.71	40.71
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.37			11.90			35.17			38.77		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	13.43											
Intersection LOS	B											
Intersection V/C	0.407											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	19	0	0	0	6	0	4	4	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	565	73	245	643	159	166	117	16	138	194	181
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	145	19	63	165	41	43	30	4	35	50	47
Total Analysis Volume [veh/h]	43	581	75	252	662	164	171	120	16	142	200	186
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	8	11	11	7	10	10
g / C, Green / Cycle	0.06	0.37	0.37	0.11	0.41	0.41	0.12	0.18	0.18	0.10	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.05	0.08	0.14	0.11	0.10	0.04	0.01	0.08	0.11	0.12
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	104	1792	559	358	2023	631	212	602	269	182	284	242
d1, Uniform Delay [s]	29.55	14.91	13.82	28.12	13.02	12.62	27.84	22.98	22.41	28.44	26.03	26.34
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.48	0.50	2.53	0.43	1.00	7.04	0.16	0.09	7.12	3.16	5.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.32	0.13	0.70	0.33	0.26	0.81	0.20	0.06	0.78	0.70	0.77
d, Delay for Lane Group [s/veh]	32.17	15.39	14.32	30.64	13.45	13.61	34.88	23.14	22.50	35.56	29.20	31.45
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	1.76	0.68	1.78	1.76	1.38	2.71	0.70	0.19	2.32	2.88	2.82
50th-Percentile Queue Length [ft/ln]	16.47	44.10	17.05	44.50	43.96	34.57	67.71	17.62	4.67	57.89	71.96	70.42
95th-Percentile Queue Length [veh/ln]	1.19	3.18	1.23	3.20	3.16	2.49	4.88	1.27	0.34	4.17	5.18	5.07
95th-Percentile Queue Length [ft/ln]	29.65	79.38	30.68	80.10	79.12	62.22	121.88	31.72	8.40	104.19	129.52	126.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.17	15.39	14.32	30.64	13.45	13.61	34.88	23.14	22.50	35.56	29.20	31.45
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.31			17.50			29.65			31.70		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.48											
Intersection LOS	C											
Intersection V/C	0.443											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	20	31	0	0	0	0	32
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	8	18	0	20	31	425	33	9	416	32
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	5	0	5	8	111	9	2	109	8
Total Analysis Volume [veh/h]	14	0	8	19	0	21	32	444	34	9	434	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.01	0.09	0.00	0.03	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	22.98	21.31	11.92	23.22	22.11	12.40	8.35	0.00	0.00	8.32	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.25	0.41	0.41	0.41	0.09	0.04	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	6.35	6.35	6.35	10.34	10.34	10.34	2.16	1.08	0.00	0.62	0.62	0.62
d_A, Approach Delay [s/veh]	18.96			17.54			0.52			0.16		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.39											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.275

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	288	11	67	278	18	19	74	23	5	62	22
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	82	3	19	79	5	5	21	7	1	18	6
Total Analysis Volume [veh/h]	58	329	13	77	318	21	22	85	26	6	71	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	571	620	626	572	623	633	583	582
Degree of Utilization, x	0.10	0.28	0.27	0.13	0.27	0.27	0.23	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.34	1.12	1.10	0.46	1.10	1.08	0.87	0.63
95th-Percentile Queue Length [ft]	8.44	27.96	27.62	11.57	27.51	26.96	21.84	15.78
Approach Delay [s/veh]	10.51			10.44			11.00	10.50
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	10.54							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.222

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	2	16	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	236	14	59	160	52	30	296	114	7	323	50
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	62	4	16	42	14	8	78	30	2	85	13
Total Analysis Volume [veh/h]	87	249	15	62	169	55	32	312	120	7	340	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	32	32	7	31	31	5	13	13	1	10	10
g / C, Green / Cycle	0.12	0.46	0.46	0.10	0.44	0.44	0.07	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.01	0.02	0.05	0.04	0.02	0.09	0.08	0.00	0.10	0.03
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	394	1572	702	340	1516	677	117	656	293	35	490	219
d1, Uniform Delay [s]	28.04	11.10	10.40	28.85	11.49	11.33	31.06	25.27	24.93	33.87	28.65	26.73
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.22	0.06	0.25	0.15	0.24	1.23	0.54	0.92	2.84	1.78	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.16	0.02	0.18	0.11	0.08	0.27	0.48	0.41	0.20	0.69	0.24
d, Delay for Lane Group [s/veh]	28.32	11.32	10.45	29.11	11.64	11.56	32.29	25.81	25.85	36.71	30.43	27.30
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.61	0.95	0.11	0.45	0.66	0.45	0.51	2.10	1.63	0.13	2.56	0.74
50th-Percentile Queue Length [ft/ln]	15.34	23.73	2.82	11.13	16.42	11.14	12.73	52.56	40.82	3.37	63.91	18.57
95th-Percentile Queue Length [veh/ln]	1.10	1.71	0.20	0.80	1.18	0.80	0.92	3.78	2.94	0.24	4.60	1.34
95th-Percentile Queue Length [ft/ln]	27.62	42.72	5.07	20.04	29.56	20.06	22.91	94.61	73.47	6.07	115.04	33.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.32	11.32	10.45	29.11	11.64	11.56	32.29	25.81	25.85	36.71	30.43	27.30
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.50			15.41			26.27			30.12		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.71											
Intersection LOS	C											
Intersection V/C	0.222											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	14	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	10	9	377	380	14
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	106	107	4
Total Analysis Volume [veh/h]	18	11	10	426	429	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.14	11.52	8.23	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.01	6.01	0.67	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.00		0.19		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.400

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	13	6	6	2	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	292	55	125	278	33	35	308	55	22	302	170
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	79	15	34	75	9	9	84	15	6	82	46
Total Analysis Volume [veh/h]	51	317	60	136	302	36	38	334	60	24	328	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	26	26	6	28	28	16	16	16	16	16	16
g / C, Green / Cycle	0.07	0.43	0.43	0.11	0.47	0.47	0.26	0.26	0.26	0.26	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.08	0.10	0.10	0.04	0.19	0.04	0.02	0.18	0.12
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1734	1069	1800	1530	1063	1800	1530
c, Capacity [veh/h]	118	773	731	182	840	809	196	477	405	192	477	405
d1, Uniform Delay [s]	26.87	10.97	10.99	26.09	9.46	9.47	26.87	19.96	16.92	26.72	19.88	18.48
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.46	0.77	0.83	5.94	0.55	0.58	0.47	1.88	0.17	0.29	1.78	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

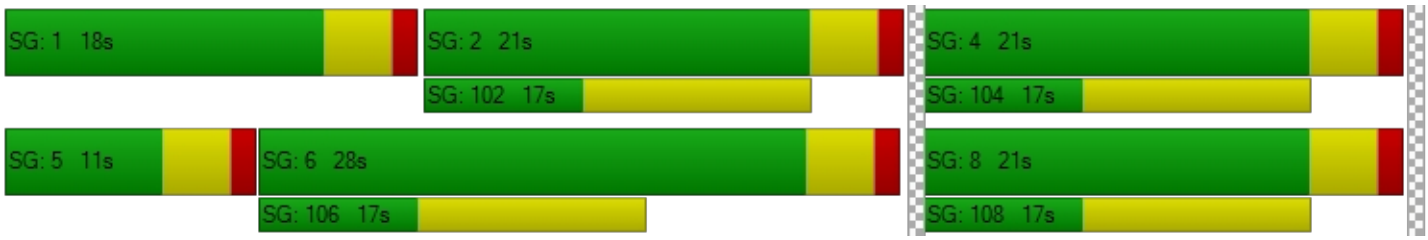
X, volume / capacity	0.43	0.25	0.25	0.75	0.20	0.21	0.19	0.70	0.15	0.12	0.69	0.45
d, Delay for Lane Group [s/veh]	29.33	11.74	11.82	32.03	10.01	10.05	27.34	21.84	17.09	27.01	21.65	19.27
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.70	1.39	1.35	1.95	1.09	1.07	0.49	3.73	0.55	0.30	3.64	1.86
50th-Percentile Queue Length [ft/ln]	17.48	34.86	33.85	48.65	27.29	26.69	12.18	93.21	13.71	7.61	90.95	46.60
95th-Percentile Queue Length [veh/ln]	1.26	2.51	2.44	3.50	1.96	1.92	0.88	6.71	0.99	0.55	6.55	3.36
95th-Percentile Queue Length [ft/ln]	31.46	62.74	60.93	87.57	49.12	48.05	21.92	167.78	24.69	13.70	163.70	83.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.33	11.77	11.82	32.03	10.02	10.05	27.34	21.84	17.09	27.01	21.65	19.27
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	13.87			16.34			21.67			21.08		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.36											
Intersection LOS	B											
Intersection V/C	0.400											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 2 Existing Plus Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	6	2	0	10	0	0	0	6	3	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**254**	**782**	**42**	**232**	**690**	**60**	**64**	**443**	**161**	**39**	**606**	**318**	**3691**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	12	0	0	19	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**952**	**49**	**138**	**1184**	**23**	**10**	**11**	**18**	**28**	**3**	**99**	**2529**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	6	19	0	0	0	6	0	4	4	12	51
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**42**	**565**	**73**	**245**	**643**	**159**	**166**	**117**	**16**	**138**	**194**	**181**	**2539**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	18	0	20	31	0	0	0	0	32	101
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**13**	**0**	**8**	**18**	**0**	**20**	**31**	**425**	**33**	**9**	**416**	**32**	**1005**

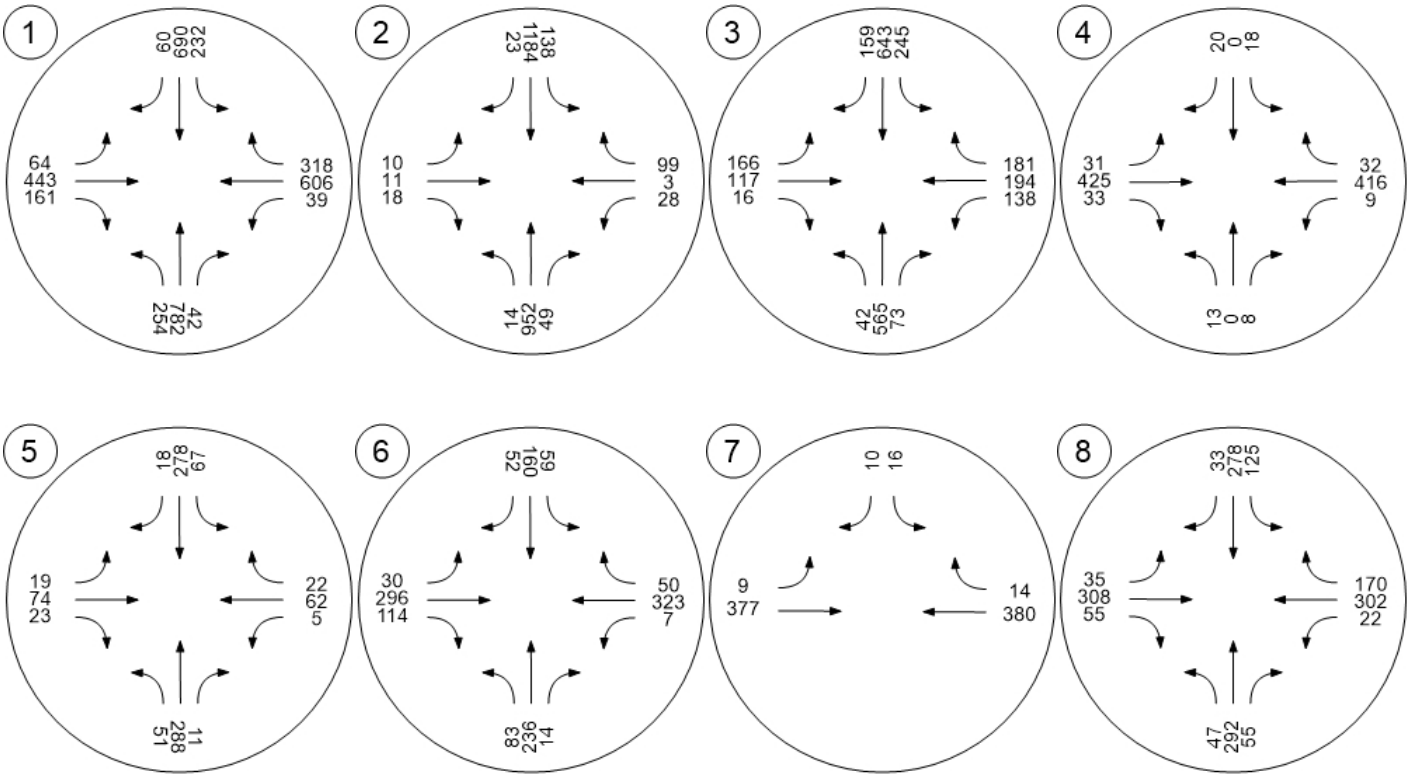
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	0	3	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**51**	**288**	**11**	**67**	**278**	**18**	**19**	**74**	**23**	**5**	**62**	**22**	**918**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	3	2	16	0	0	29	0	50
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**83**	**236**	**14**	**59**	**160**	**52**	**30**	**296**	**114**	**7**	**323**	**50**	**1424**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	14	26	0	45
		Other	0	0	0	0	0	0	0
		Future Total	**16**	**10**	**9**	**377**	**380**	**14**	**806**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	13	6	6	2	0	10	0	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**47**	**292**	**55**	**125**	**278**	**33**	**35**	**308**	**55**	**22**	**302**	**170**	**1722**

Traffic Volume - Future Total Volume



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Report File: C:\...\AM Ep_Improvements.pdf

Scenario 2 Existing Plus Project - Improvements
1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.494	21.7	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.488	17.2	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.615	24.3	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.099	18.3	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.355	11.0	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.307	23.4	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.319	22.6	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.495	20.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.494

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	9	3	0	3	0	0	0	2	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	644	71	271	664	42	57	581	190	35	241	132
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	173	19	73	178	11	15	156	51	9	65	35
Total Analysis Volume [veh/h]	141	692	76	291	714	45	61	625	204	38	259	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	8	24	24	5	15	15	4	14	14
g / C, Green / Cycle	0.10	0.36	0.36	0.12	0.37	0.37	0.07	0.23	0.23	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.05	0.09	0.15	0.03	0.04	0.18	0.13	0.02	0.12	0.12
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	336	1743	544	392	1826	570	127	774	346	96	374	330
d1, Uniform Delay [s]	27.56	15.79	14.27	27.84	15.05	13.25	29.01	23.92	22.57	29.75	23.19	23.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	0.68	0.54	2.80	0.63	0.27	2.79	2.06	1.61	2.64	1.32	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.40	0.14	0.74	0.39	0.08	0.48	0.81	0.59	0.40	0.56	0.58
d, Delay for Lane Group [s/veh]	28.40	16.47	14.80	30.64	15.68	13.52	31.79	25.98	24.17	32.40	24.51	24.91
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	2.28	0.73	2.13	2.27	0.40	0.93	4.21	2.61	0.60	2.69	2.50
50th-Percentile Queue Length [ft/ln]	24.38	56.91	18.16	53.30	56.76	10.07	23.34	105.31	65.31	14.91	67.20	62.43
95th-Percentile Queue Length [veh/ln]	1.76	4.10	1.31	3.84	4.09	0.73	1.68	7.58	4.70	1.07	4.84	4.49
95th-Percentile Queue Length [ft/ln]	43.89	102.43	32.68	95.95	102.16	18.13	42.02	189.46	117.56	26.84	120.96	112.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.40	16.47	14.80	30.64	15.68	13.52	31.79	25.98	24.17	32.40	24.59	24.91
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.18			19.74			25.96			25.37		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.74											
Intersection LOS	C											
Intersection V/C	0.494											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.488

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	934	37	88	894	49	8	5	13	44	9	239
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	247	10	23	236	13	2	1	3	12	2	63
Total Analysis Volume [veh/h]	25	987	39	93	945	52	8	5	14	47	10	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	35	35	6	38	38	3	3	15	15
g / C, Green / Cycle	0.04	0.47	0.47	0.08	0.51	0.51	0.04	0.04	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.03	0.05	0.19	0.19	0.01	0.01	0.03	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1746	1530	1714	1539
c, Capacity [veh/h]	67	2299	717	138	1750	895	72	63	337	302
d1, Uniform Delay [s]	35.21	13.27	10.87	33.56	11.14	11.14	34.79	34.85	24.94	29.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.46	0.59	0.14	5.56	0.62	1.21	1.19	1.76	0.19	7.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

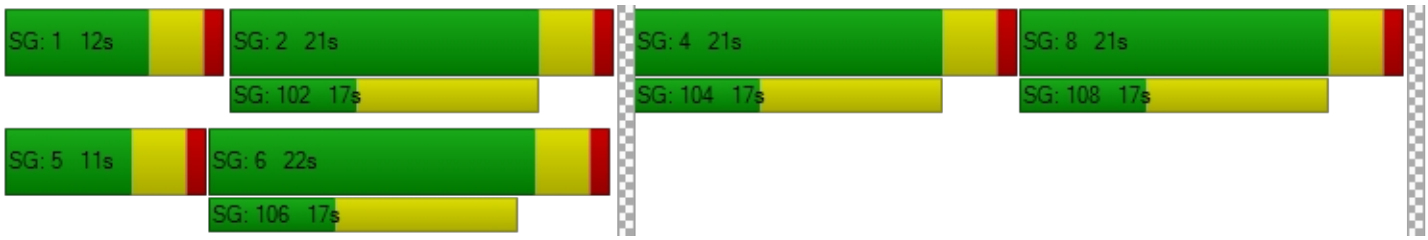
X, volume / capacity	0.37	0.43	0.05	0.67	0.38	0.38	0.18	0.22	0.14	0.87
d, Delay for Lane Group [s/veh]	38.66	13.86	11.02	39.12	11.76	12.36	35.98	36.61	25.13	36.91
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	3.02	0.31	1.75	2.85	3.07	0.25	0.28	0.67	4.90
50th-Percentile Queue Length [ft/ln]	11.77	75.51	7.75	43.72	71.24	76.68	6.27	6.89	16.66	122.56
95th-Percentile Queue Length [veh/ln]	0.85	5.44	0.56	3.15	5.13	5.52	0.45	0.50	1.20	8.53
95th-Percentile Queue Length [ft/ln]	21.18	135.93	13.95	78.69	128.23	138.03	11.29	12.41	29.99	213.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.66	13.86	11.02	39.12	11.94	12.36	35.98	35.98	36.61	25.13	36.91	36.91
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	14.34			14.28			36.31			35.13		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	17.15											
Intersection LOS	B											
Intersection V/C	0.488											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	6	0	0	0	2	0	6	6	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	452	15	82	459	304	236	225	39	69	290	188
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	116	4	21	118	78	61	58	10	18	75	48
Total Analysis Volume [veh/h]	56	465	15	84	473	313	243	232	40	71	299	194
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	23	23	6	24	24	12	20	20	5	14	14
g / C, Green / Cycle	0.07	0.33	0.33	0.08	0.34	0.34	0.17	0.29	0.29	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.01	0.03	0.10	0.20	0.14	0.07	0.03	0.04	0.17	0.13
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1587	495	274	1655	516	288	993	443	132	357	303
d1, Uniform Delay [s]	31.52	17.76	16.23	30.35	17.06	19.38	28.32	19.02	18.20	31.24	27.08	25.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.00	0.47	0.11	0.63	0.43	5.21	6.61	0.12	0.09	3.40	5.26	2.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

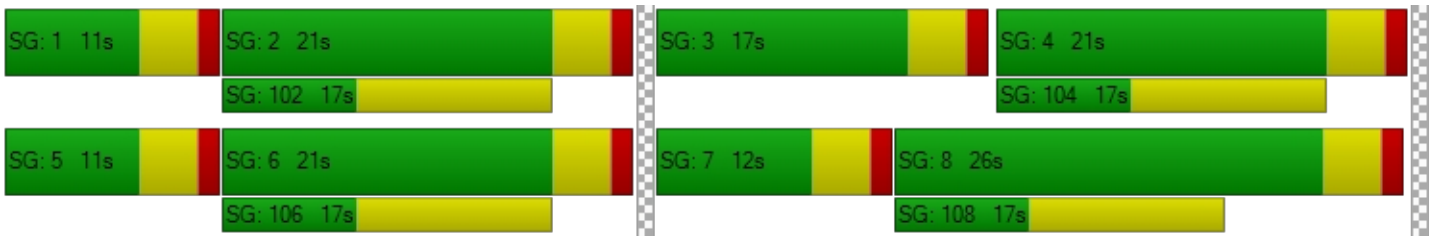
X, volume / capacity	0.48	0.29	0.03	0.31	0.29	0.61	0.84	0.23	0.09	0.54	0.84	0.64
d, Delay for Lane Group [s/veh]	34.51	18.23	16.34	30.98	17.50	24.60	34.93	19.13	18.29	34.64	32.35	28.11
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	1.67	0.16	0.62	1.61	4.23	4.05	1.27	0.42	1.19	4.85	2.87
50th-Percentile Queue Length [ft/ln]	23.24	41.76	3.93	15.54	40.28	105.76	101.23	31.68	10.59	29.84	121.13	71.71
95th-Percentile Queue Length [veh/ln]	1.67	3.01	0.28	1.12	2.90	7.60	7.29	2.28	0.76	2.15	8.46	5.16
95th-Percentile Queue Length [ft/ln]	41.84	75.16	7.08	27.97	72.50	190.09	182.22	57.02	19.06	53.72	211.38	129.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	18.23	16.34	30.98	17.50	24.60	34.93	19.13	18.29	34.64	32.35	28.11
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	19.87			21.35			26.52			31.18		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	24.34											
Intersection LOS	C											
Intersection V/C	0.615											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.099

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	30	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	2	28	0	30	10	284	5	7	521	10
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	7	0	8	3	75	1	2	138	3
Total Analysis Volume [veh/h]	11	0	2	30	0	32	11	300	5	7	551	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.10	0.00	0.04	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	15.35	18.37	9.44	18.27	19.40	11.37	8.57	0.00	0.00	7.86	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.50	0.50	0.50	0.03	0.00	0.00	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.55	2.55	2.55	12.42	12.42	12.42	0.82	0.00	0.00	0.42	0.00	0.00
d_A, Approach Delay [s/veh]	14.44			14.71			0.30			0.10		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.30											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.355

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	230	2	32	248	23	33	41	21	21	123	30
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	70	1	10	75	7	10	12	6	6	37	9
Total Analysis Volume [veh/h]	28	278	2	39	300	28	40	50	25	25	149	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	546	591	592	552	598	610	574	593
Degree of Utilization, x	0.05	0.24	0.24	0.07	0.27	0.27	0.20	0.35

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	0.92	0.91	0.23	1.11	1.08	0.74	1.59
95th-Percentile Queue Length [ft]	4.05	22.90	22.85	5.69	27.76	27.02	18.55	39.87
Approach Delay [s/veh]	10.57			10.74			10.84	12.38
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.04							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.307

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	3	25	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	156	10	40	153	90	58	184	51	19	413	46
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	46	3	12	45	26	17	54	15	6	121	13
Total Analysis Volume [veh/h]	76	182	12	47	179	105	68	215	60	22	482	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	28	28	6	27	27	7	16	16	4	12	12
g / C, Green / Cycle	0.11	0.40	0.40	0.09	0.38	0.38	0.11	0.23	0.23	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.01	0.01	0.05	0.07	0.04	0.06	0.04	0.01	0.14	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	374	1374	613	293	1290	576	183	794	354	89	606	270
d1, Uniform Delay [s]	28.33	13.32	12.71	29.65	14.41	14.67	29.18	22.13	21.59	31.98	27.71	24.68
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.20	0.06	0.25	0.22	0.70	1.25	0.18	0.22	1.42	2.44	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.13	0.02	0.16	0.14	0.18	0.37	0.27	0.17	0.25	0.80	0.20
d, Delay for Lane Group [s/veh]	28.60	13.52	12.77	29.90	14.64	15.36	30.43	22.31	21.81	33.40	30.14	25.04
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.54	0.79	0.10	0.34	0.83	1.05	1.03	1.30	0.72	0.36	3.64	0.71
50th-Percentile Queue Length [ft/ln]	13.49	19.79	2.62	8.60	20.64	26.22	25.71	32.57	18.01	9.07	91.03	17.82
95th-Percentile Queue Length [veh/ln]	0.97	1.42	0.19	0.62	1.49	1.89	1.85	2.34	1.30	0.65	6.55	1.28
95th-Percentile Queue Length [ft/ln]	24.28	35.62	4.72	15.48	37.16	47.20	46.27	58.62	32.42	16.32	163.86	32.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.60	13.52	12.77	29.90	14.64	15.36	30.43	22.31	21.81	33.40	30.14	25.04
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.73			17.03			23.83			29.78		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.45											
Intersection LOS	C											
Intersection V/C	0.307											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.319

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	22	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	13	33	226	410	141
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	4	9	65	118	41
Total Analysis Volume [veh/h]	97	15	38	260	471	162
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.03	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	22.64	17.50	8.91	0.00	0.00	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.51	1.51	0.12	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	37.67	37.67	3.09	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	21.95		1.14		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.68					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	4	10	9	3	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	216	19	129	287	43	38	218	58	23	478	165
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	57	5	34	76	11	10	57	15	6	126	43
Total Analysis Volume [veh/h]	58	227	20	136	302	45	40	229	61	24	503	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	21	0	17	26	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	6	26	26	18	18	18	18	18	18
g / C, Green / Cycle	0.07	0.39	0.39	0.11	0.43	0.43	0.30	0.30	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.07	0.08	0.10	0.10	0.04	0.13	0.04	0.02	0.28	0.11
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1720	910	1800	1530	1170	1800	1530
c, Capacity [veh/h]	128	710	690	182	767	733	120	540	459	313	540	459
d1, Uniform Delay [s]	26.67	11.86	11.87	26.09	10.99	11.00	30.08	16.89	15.35	21.40	20.46	16.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.50	0.54	0.56	5.94	0.70	0.74	1.61	0.53	0.13	0.10	8.99	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

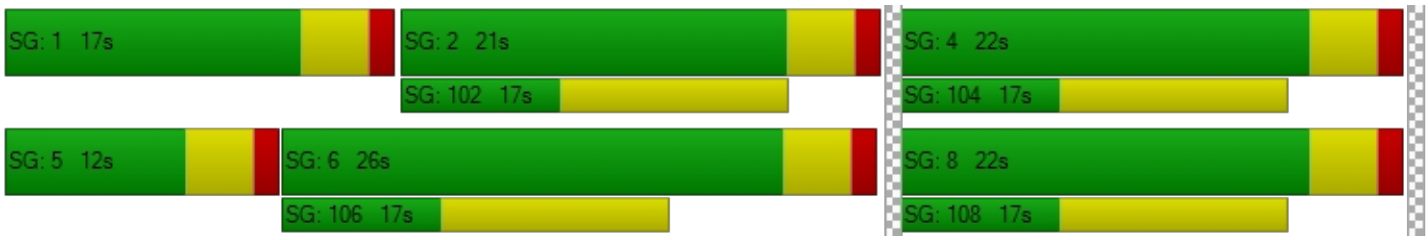
X, volume / capacity	0.45	0.18	0.18	0.75	0.23	0.23	0.33	0.42	0.13	0.08	0.93	0.38
d, Delay for Lane Group [s/veh]	29.17	12.40	12.44	32.03	11.69	11.74	31.69	17.42	15.48	21.50	29.45	17.15
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	0.95	0.94	1.95	1.28	1.24	0.57	2.15	0.52	0.26	6.86	1.61
50th-Percentile Queue Length [ft/ln]	19.74	23.74	23.48	48.65	31.97	31.11	14.24	53.74	12.95	6.44	171.41	40.37
95th-Percentile Queue Length [veh/ln]	1.42	1.71	1.69	3.50	2.30	2.24	1.03	3.87	0.93	0.46	11.15	2.91
95th-Percentile Queue Length [ft/ln]	35.53	42.72	42.27	87.57	57.54	55.99	25.63	96.73	23.30	11.58	278.77	72.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.17	12.42	12.44	32.03	11.71	11.74	31.69	17.42	15.48	21.50	29.45	17.15
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	15.60			17.44			18.79			26.13		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.72											
Intersection LOS	C											
Intersection V/C	0.495											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 2 Existing Plus Project - Improvements
1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	9	3	0	3	0	0	0	2	1	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**131**	**644**	**71**	**271**	**664**	**42**	**57**	**581**	**190**	**35**	**241**	**132**	**3059**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	18	0	0	6	0	0	0	0	0	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**24**	**934**	**37**	**88**	**894**	**49**	**8**	**5**	**13**	**44**	**9**	**239**	**2344**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	2	6	0	0	0	2	0	6	6	18	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**54**	**452**	**15**	**82**	**459**	**304**	**236**	**225**	**39**	**69**	**290**	**188**	**2413**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	28	0	30	10	0	0	0	0	10	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**10**	**0**	**2**	**28**	**0**	**30**	**10**	**284**	**5**	**7**	**521**	**10**	**907**

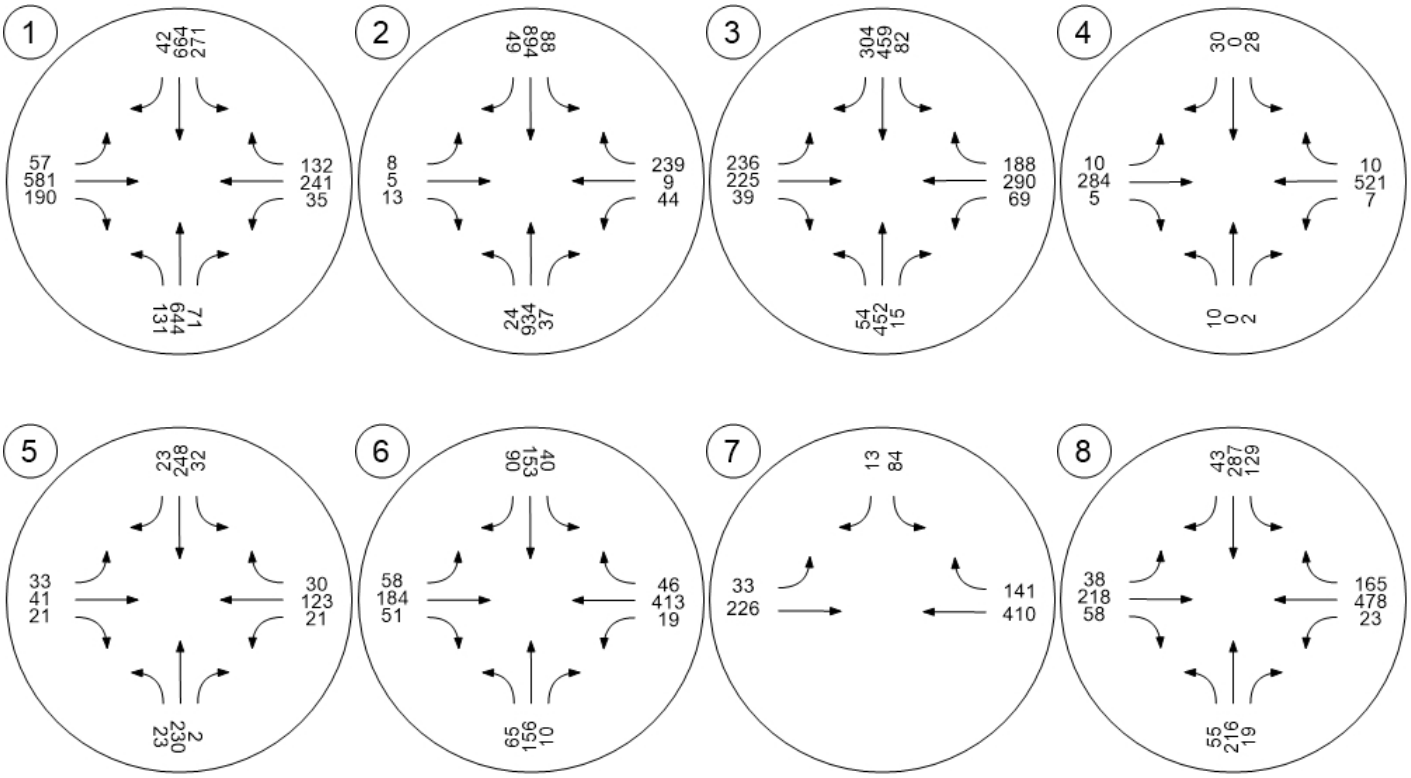
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	1	0	0	0	0	0	0	0	4
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**23**	**230**	**2**	**32**	**248**	**23**	**33**	**41**	**21**	**21**	**123**	**30**	**827**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	3	25	0	0	9	0	38
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**65**	**156**	**10**	**40**	**153**	**90**	**58**	**184**	**51**	**19**	**413**	**46**	**1285**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	3	22	8	0	34
		Other	0	0	0	0	0	0	0
		Future Total	**84**	**13**	**33**	**226**	**410**	**141**	**907**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	4	10	9	3	0	3	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**55**	**216**	**19**	**129**	**287**	**43**	**38**	**218**	**58**	**23**	**478**	**165**	**1729**

Traffic Volume - Future Total Volume



TTM 37884

Vistro File: C:\...\PM - Mitigation.vistro
Report File: C:\...\PM Ep_Improvements.pdf

Scenario 2 Existing Plus Project - Improvements
1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Right	0.605	26.0	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.407	13.4	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.443	21.5	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.050	18.4	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.275	10.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.222	22.7	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.057	17.1	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.400	18.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	2	0	10	0	0	0	6	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	254	782	42	232	690	60	64	443	161	39	606	318
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	206	11	61	182	16	17	117	42	10	160	84
Total Analysis Volume [veh/h]	268	824	44	244	727	63	67	467	170	41	639	335
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	22	0	11	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	7	17	17	5	21	21	4	20	20
g / C, Green / Cycle	0.11	0.26	0.26	0.11	0.26	0.26	0.08	0.33	0.33	0.06	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.08	0.17	0.03	0.07	0.15	0.04	0.04	0.14	0.11	0.02	0.29	0.29
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	359	1299	405	354	1292	403	130	1118	499	97	552	489
d1, Uniform Delay [s]	28.15	21.12	18.09	28.01	20.70	18.39	28.90	17.09	16.61	29.65	21.90	21.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.12	2.37	0.54	2.38	1.78	0.82	3.15	0.25	0.40	2.91	11.62	12.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.63	0.11	0.69	0.56	0.16	0.52	0.42	0.34	0.42	0.94	0.94
d, Delay for Lane Group [s/veh]	31.26	23.49	18.63	30.39	22.48	19.21	32.05	17.34	17.01	32.56	33.53	34.70
Lane Group LOS	C	C	B	C	C	B	C	B	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.98	3.50	0.50	1.77	2.99	0.73	1.03	2.36	1.70	0.64	8.25	7.47
50th-Percentile Queue Length [ft/ln]	49.60	87.41	12.54	44.31	74.66	18.33	25.72	59.00	42.45	16.11	206.36	186.78
95th-Percentile Queue Length [veh/ln]	3.57	6.29	0.90	3.19	5.38	1.32	1.85	4.25	3.06	1.16	12.97	11.95
95th-Percentile Queue Length [ft/ln]	89.28	157.34	22.57	79.76	134.40	32.99	46.29	106.20	76.40	29.00	324.16	298.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.26	23.49	18.63	30.39	22.48	19.21	32.05	17.34	17.01	32.56	33.75	34.70
Movement LOS	C	C	B	C	C	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	25.14			24.15			18.66			34.02		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	26.02											
Intersection LOS	C											
Intersection V/C	0.605											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	19	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	952	49	138	1184	23	10	11	18	28	3	99
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	260	13	38	323	6	3	3	5	8	1	27
Total Analysis Volume [veh/h]	15	1039	53	151	1293	25	11	12	20	31	3	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	40	40	8	46	46	4	4	7	7
g / C, Green / Cycle	0.03	0.53	0.53	0.11	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.03	0.09	0.25	0.25	0.01	0.01	0.02	0.07
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	45	2589	808	184	2087	1086	99	86	164	147
d1, Uniform Delay [s]	35.95	10.62	8.67	32.84	7.69	7.69	33.90	33.90	31.28	33.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.36	0.47	0.16	8.85	0.61	1.17	1.19	1.36	0.55	7.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

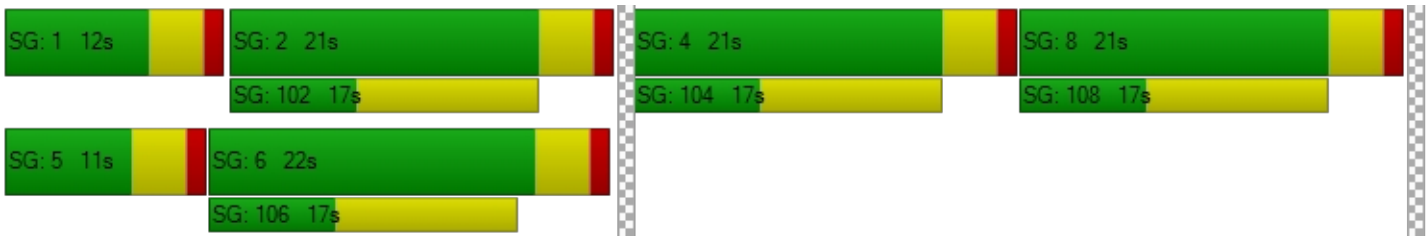
X, volume / capacity	0.34	0.40	0.07	0.82	0.42	0.42	0.23	0.23	0.19	0.75
d, Delay for Lane Group [s/veh]	40.31	11.08	8.83	41.69	8.30	8.86	35.09	35.26	31.83	40.71
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.30	2.66	0.35	2.94	2.82	3.11	0.43	0.38	0.52	2.17
50th-Percentile Queue Length [ft/ln]	7.51	66.51	8.84	73.61	70.60	77.67	10.74	9.44	12.88	54.21
95th-Percentile Queue Length [veh/ln]	0.54	4.79	0.64	5.30	5.08	5.59	0.77	0.68	0.93	3.90
95th-Percentile Queue Length [ft/ln]	13.53	119.72	15.91	132.49	127.07	139.81	19.33	17.00	23.19	97.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.31	11.08	8.83	41.69	8.48	8.86	35.09	35.09	35.26	31.83	40.71	40.71
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.37			11.90			35.17			38.77		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	13.43											
Intersection LOS	B											
Intersection V/C	0.407											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	19	0	0	0	6	0	4	4	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	565	73	245	643	159	166	117	16	138	194	181
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	145	19	63	165	41	43	30	4	35	50	47
Total Analysis Volume [veh/h]	43	581	75	252	662	164	171	120	16	142	200	186
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	8	11	11	7	10	10
g / C, Green / Cycle	0.06	0.37	0.37	0.11	0.41	0.41	0.12	0.18	0.18	0.10	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.05	0.08	0.14	0.11	0.10	0.04	0.01	0.08	0.11	0.12
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	104	1792	559	358	2023	631	212	602	269	182	284	242
d1, Uniform Delay [s]	29.55	14.91	13.82	28.12	13.02	12.62	27.84	22.98	22.41	28.44	26.03	26.34
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.48	0.50	2.53	0.43	1.00	7.04	0.16	0.09	7.12	3.16	5.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.32	0.13	0.70	0.33	0.26	0.81	0.20	0.06	0.78	0.70	0.77
d, Delay for Lane Group [s/veh]	32.17	15.39	14.32	30.64	13.45	13.61	34.88	23.14	22.50	35.56	29.20	31.45
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	1.76	0.68	1.78	1.76	1.38	2.71	0.70	0.19	2.32	2.88	2.82
50th-Percentile Queue Length [ft/ln]	16.47	44.10	17.05	44.50	43.96	34.57	67.71	17.62	4.67	57.89	71.96	70.42
95th-Percentile Queue Length [veh/ln]	1.19	3.18	1.23	3.20	3.16	2.49	4.88	1.27	0.34	4.17	5.18	5.07
95th-Percentile Queue Length [ft/ln]	29.65	79.38	30.68	80.10	79.12	62.22	121.88	31.72	8.40	104.19	129.52	126.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.17	15.39	14.32	30.64	13.45	13.61	34.88	23.14	22.50	35.56	29.20	31.45
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.31			17.50			29.65			31.70		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.48											
Intersection LOS	C											
Intersection V/C	0.443											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.050

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	20	31	0	0	0	0	32
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	8	18	0	20	31	425	33	9	416	32
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	5	0	5	8	111	9	2	109	8
Total Analysis Volume [veh/h]	14	0	8	19	0	21	32	444	34	9	434	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.01	0.07	0.00	0.03	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	18.37	21.09	10.31	18.27	21.32	10.50	8.35	0.00	0.00	8.32	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.19	0.30	0.30	0.30	0.09	0.00	0.00	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.77	4.77	4.77	7.61	7.61	7.61	2.24	0.00	0.00	0.62	0.00	0.00
d_A, Approach Delay [s/veh]	15.44			14.19			0.52			0.16		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	1.19											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.275

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	288	11	67	278	18	19	74	23	5	62	22
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	82	3	19	79	5	5	21	7	1	18	6
Total Analysis Volume [veh/h]	58	329	13	77	318	21	22	85	26	6	71	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	571	620	626	572	623	633	583	582
Degree of Utilization, x	0.10	0.28	0.27	0.13	0.27	0.27	0.23	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.34	1.12	1.10	0.46	1.10	1.08	0.87	0.63
95th-Percentile Queue Length [ft]	8.44	27.96	27.62	11.57	27.51	26.96	21.84	15.78
Approach Delay [s/veh]	10.51			10.44			11.00	10.50
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	10.54							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.222

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	2	16	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	236	14	59	160	52	30	296	114	7	323	50
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	62	4	16	42	14	8	78	30	2	85	13
Total Analysis Volume [veh/h]	87	249	15	62	169	55	32	312	120	7	340	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	32	32	7	31	31	5	13	13	1	10	10
g / C, Green / Cycle	0.12	0.46	0.46	0.10	0.44	0.44	0.07	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.01	0.02	0.05	0.04	0.02	0.09	0.08	0.00	0.10	0.03
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	394	1572	702	340	1516	677	117	656	293	35	490	219
d1, Uniform Delay [s]	28.04	11.10	10.40	28.85	11.49	11.33	31.06	25.27	24.93	33.87	28.65	26.73
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.22	0.06	0.25	0.15	0.24	1.23	0.54	0.92	2.84	1.78	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.16	0.02	0.18	0.11	0.08	0.27	0.48	0.41	0.20	0.69	0.24
d, Delay for Lane Group [s/veh]	28.32	11.32	10.45	29.11	11.64	11.56	32.29	25.81	25.85	36.71	30.43	27.30
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.61	0.95	0.11	0.45	0.66	0.45	0.51	2.10	1.63	0.13	2.56	0.74
50th-Percentile Queue Length [ft/ln]	15.34	23.73	2.82	11.13	16.42	11.14	12.73	52.56	40.82	3.37	63.91	18.57
95th-Percentile Queue Length [veh/ln]	1.10	1.71	0.20	0.80	1.18	0.80	0.92	3.78	2.94	0.24	4.60	1.34
95th-Percentile Queue Length [ft/ln]	27.62	42.72	5.07	20.04	29.56	20.06	22.91	94.61	73.47	6.07	115.04	33.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.32	11.32	10.45	29.11	11.64	11.56	32.29	25.81	25.85	36.71	30.43	27.30
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.50			15.41			26.27			30.12		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.71											
Intersection LOS	C											
Intersection V/C	0.222											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	14	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	10	9	377	380	14
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	106	107	4
Total Analysis Volume [veh/h]	18	11	10	426	429	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.14	11.52	8.23	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.01	6.01	0.67	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.00		0.19		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.400

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	13	6	6	2	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	292	55	125	278	33	35	308	55	22	302	170
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	79	15	34	75	9	9	84	15	6	82	46
Total Analysis Volume [veh/h]	51	317	60	136	302	36	38	334	60	24	328	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	26	26	6	28	28	16	16	16	16	16	16
g / C, Green / Cycle	0.07	0.43	0.43	0.11	0.47	0.47	0.26	0.26	0.26	0.26	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.08	0.10	0.10	0.04	0.19	0.04	0.02	0.18	0.12
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1734	1069	1800	1530	1063	1800	1530
c, Capacity [veh/h]	118	773	731	182	840	809	196	477	405	192	477	405
d1, Uniform Delay [s]	26.87	10.97	10.99	26.09	9.46	9.47	26.87	19.96	16.92	26.72	19.88	18.48
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.46	0.77	0.83	5.94	0.55	0.58	0.47	1.88	0.17	0.29	1.78	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

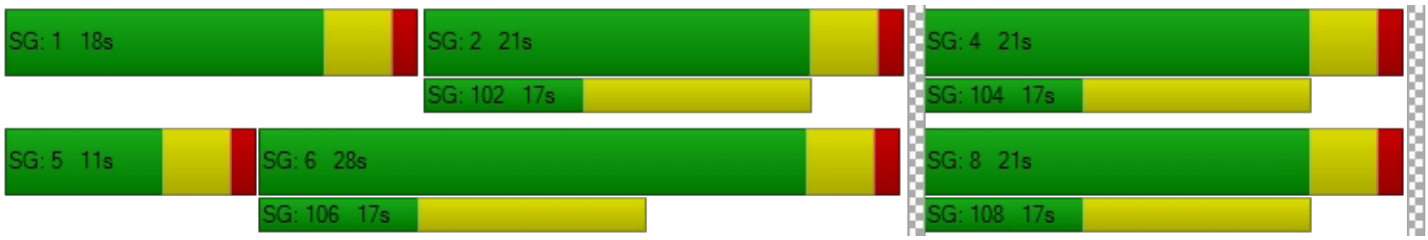
X, volume / capacity	0.43	0.25	0.25	0.75	0.20	0.21	0.19	0.70	0.15	0.12	0.69	0.45
d, Delay for Lane Group [s/veh]	29.33	11.74	11.82	32.03	10.01	10.05	27.34	21.84	17.09	27.01	21.65	19.27
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.70	1.39	1.35	1.95	1.09	1.07	0.49	3.73	0.55	0.30	3.64	1.86
50th-Percentile Queue Length [ft/ln]	17.48	34.86	33.85	48.65	27.29	26.69	12.18	93.21	13.71	7.61	90.95	46.60
95th-Percentile Queue Length [veh/ln]	1.26	2.51	2.44	3.50	1.96	1.92	0.88	6.71	0.99	0.55	6.55	3.36
95th-Percentile Queue Length [ft/ln]	31.46	62.74	60.93	87.57	49.12	48.05	21.92	167.78	24.69	13.70	163.70	83.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.33	11.77	11.82	32.03	10.02	10.05	27.34	21.84	17.09	27.01	21.65	19.27
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	13.87			16.34			21.67			21.08		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.36											
Intersection LOS	B											
Intersection V/C	0.400											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: C:\...\PM Ep_Improvements.pdf

Scenario 2 Existing Plus Project - Improvements
1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	6	2	0	10	0	0	0	6	3	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**254**	**782**	**42**	**232**	**690**	**60**	**64**	**443**	**161**	**39**	**606**	**318**	**3691**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	12	0	0	19	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**952**	**49**	**138**	**1184**	**23**	**10**	**11**	**18**	**28**	**3**	**99**	**2529**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	6	19	0	0	0	6	0	4	4	12	51
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**42**	**565**	**73**	**245**	**643**	**159**	**166**	**117**	**16**	**138**	**194**	**181**	**2539**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	18	0	20	31	0	0	0	0	32	101
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**13**	**0**	**8**	**18**	**0**	**20**	**31**	**425**	**33**	**9**	**416**	**32**	**1005**

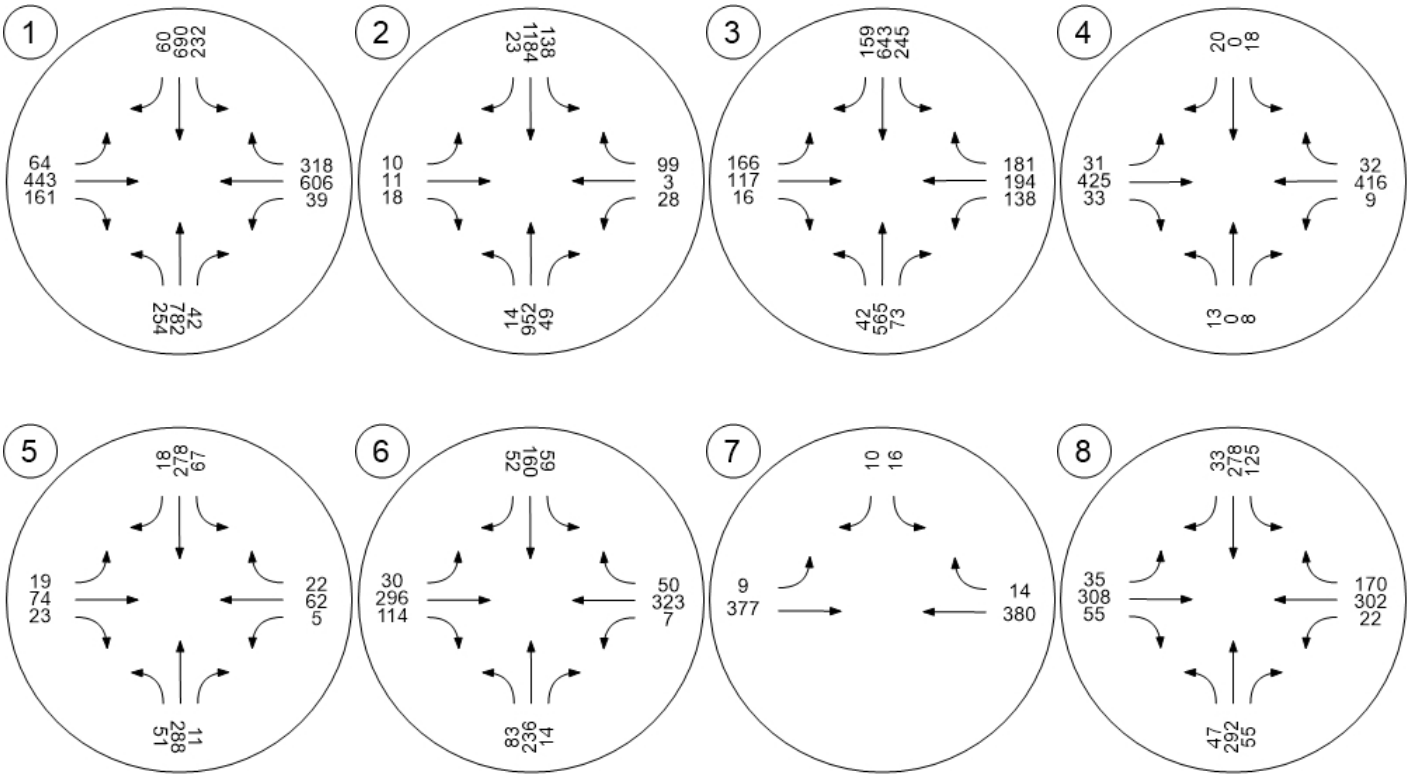
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	0	3	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**51**	**288**	**11**	**67**	**278**	**18**	**19**	**74**	**23**	**5**	**62**	**22**	**918**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	3	2	16	0	0	29	0	50
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**83**	**236**	**14**	**59**	**160**	**52**	**30**	**296**	**114**	**7**	**323**	**50**	**1424**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	14	26	0	45
		Other	0	0	0	0	0	0	0
		Future Total	**16**	**10**	**9**	**377**	**380**	**14**	**806**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	13	6	6	2	0	10	0	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**47**	**292**	**55**	**125**	**278**	**33**	**35**	**308**	**55**	**22**	**302**	**170**	**1722**

Traffic Volume - Future Total Volume



Existing Plus Project – Maximum Potential Density

TTM 37884

Vistro File: C:\...\AM.vistro
Report File: C:\...\AM Ep_MD.pdf

Scenario 3 Existing Plus Project MD
1/17/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.494	21.7	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.489	17.2	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.617	24.4	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.153	22.2	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.355	11.0	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.308	23.5	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.325	23.1	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.495	20.8	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.494

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	4	0	4	0	0	0	3	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	646	72	271	665	42	57	581	191	35	241	132
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	174	19	73	179	11	15	156	51	9	65	35
Total Analysis Volume [veh/h]	143	695	77	291	715	45	61	625	205	38	259	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	8	24	24	5	15	15	4	14	14
g / C, Green / Cycle	0.10	0.36	0.36	0.12	0.37	0.37	0.07	0.23	0.23	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.05	0.09	0.15	0.03	0.04	0.18	0.13	0.02	0.12	0.12
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	336	1743	544	392	1824	569	127	774	346	96	374	330
d1, Uniform Delay [s]	27.56	15.80	14.28	27.84	15.07	13.26	29.01	23.92	22.58	29.75	23.19	23.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	0.68	0.55	2.80	0.63	0.27	2.79	2.05	1.63	2.64	1.32	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.40	0.14	0.74	0.39	0.08	0.48	0.81	0.59	0.40	0.56	0.58
d, Delay for Lane Group [s/veh]	28.41	16.48	14.82	30.64	15.70	13.53	31.79	25.97	24.21	32.40	24.51	24.91
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.99	2.29	0.74	2.13	2.28	0.40	0.93	4.21	2.63	0.60	2.69	2.50
50th-Percentile Queue Length [ft/ln]	24.74	57.20	18.41	53.30	56.90	10.08	23.34	105.30	65.70	14.91	67.20	62.42
95th-Percentile Queue Length [veh/ln]	1.78	4.12	1.33	3.84	4.10	0.73	1.68	7.58	4.73	1.07	4.84	4.49
95th-Percentile Queue Length [ft/ln]	44.53	102.97	33.14	95.95	102.41	18.15	42.02	189.45	118.26	26.84	120.96	112.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.41	16.48	14.82	30.64	15.70	13.53	31.79	25.97	24.21	32.40	24.58	24.91
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.21			19.75			25.97			25.37		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.75											
Intersection LOS	C											
Intersection V/C	0.494											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.489

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	939	37	88	896	49	8	5	13	44	9	239
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	248	10	23	237	13	2	1	3	12	2	63
Total Analysis Volume [veh/h]	25	993	39	93	947	52	8	5	14	47	10	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	35	35	6	38	38	3	3	15	15
g / C, Green / Cycle	0.04	0.47	0.47	0.08	0.51	0.51	0.04	0.04	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.03	0.05	0.19	0.19	0.01	0.01	0.03	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1746	1530	1714	1539
c, Capacity [veh/h]	67	2299	717	138	1750	895	72	63	337	302
d1, Uniform Delay [s]	35.21	13.29	10.87	33.56	11.14	11.15	34.79	34.85	24.94	29.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.46	0.59	0.14	5.56	0.62	1.22	1.19	1.76	0.19	7.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

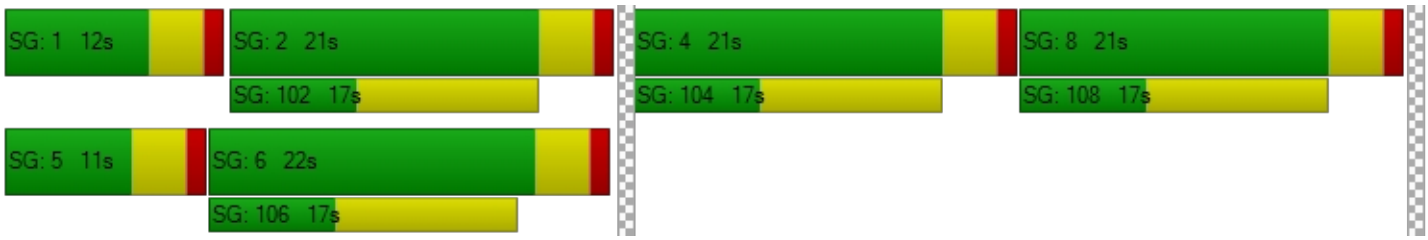
X, volume / capacity	0.37	0.43	0.05	0.67	0.38	0.38	0.18	0.22	0.14	0.87
d, Delay for Lane Group [s/veh]	38.66	13.88	11.02	39.12	11.77	12.37	35.98	36.61	25.13	36.91
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	3.04	0.31	1.75	2.86	3.08	0.25	0.28	0.67	4.90
50th-Percentile Queue Length [ft/ln]	11.77	76.10	7.75	43.72	71.42	76.88	6.27	6.89	16.66	122.56
95th-Percentile Queue Length [veh/ln]	0.85	5.48	0.56	3.15	5.14	5.54	0.45	0.50	1.20	8.53
95th-Percentile Queue Length [ft/ln]	21.18	136.98	13.95	78.69	128.55	138.38	11.29	12.41	29.99	213.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.66	13.88	11.02	39.12	11.95	12.37	35.98	35.98	36.61	25.13	36.91	36.91
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	14.36			14.28			36.31			35.13		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	17.15											
Intersection LOS	B											
Intersection V/C	0.489											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.617

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	8	0	0	0	3	0	8	8	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	452	16	84	459	304	236	226	39	71	292	193
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	116	4	22	118	78	61	58	10	18	75	50
Total Analysis Volume [veh/h]	56	465	16	87	473	313	243	233	40	73	301	199
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	23	23	6	24	24	12	20	20	5	14	14
g / C, Green / Cycle	0.07	0.32	0.32	0.08	0.34	0.34	0.17	0.29	0.29	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.01	0.03	0.10	0.20	0.14	0.07	0.03	0.04	0.17	0.13
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1576	492	277	1649	515	288	993	443	133	359	305
d1, Uniform Delay [s]	31.52	17.87	16.35	30.31	17.12	19.45	28.32	19.01	18.20	31.21	27.04	25.89
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.00	0.48	0.12	0.64	0.44	5.27	6.61	0.12	0.09	3.48	5.27	2.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

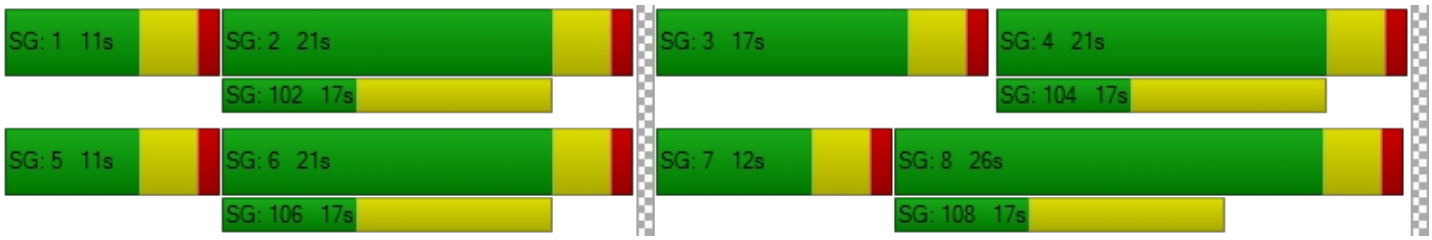
X, volume / capacity	0.48	0.30	0.03	0.31	0.29	0.61	0.84	0.23	0.09	0.55	0.84	0.65
d, Delay for Lane Group [s/veh]	34.51	18.35	16.47	30.95	17.56	24.72	34.93	19.13	18.28	34.69	32.31	28.25
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	1.68	0.17	0.64	1.62	4.24	4.05	1.27	0.42	1.23	4.88	2.95
50th-Percentile Queue Length [ft/ln]	23.24	41.96	4.22	16.08	40.38	106.12	101.23	31.82	10.59	30.70	121.89	73.83
95th-Percentile Queue Length [veh/ln]	1.67	3.02	0.30	1.16	2.91	7.62	7.29	2.29	0.76	2.21	8.50	5.32
95th-Percentile Queue Length [ft/ln]	41.84	75.53	7.59	28.95	72.68	190.59	182.22	57.27	19.06	55.26	212.42	132.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	18.35	16.47	30.95	17.56	24.72	34.93	19.13	18.28	34.69	32.31	28.25
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	19.98			21.46			26.51			31.21		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	24.42											
Intersection LOS	C											
Intersection V/C	0.617											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.153

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	39	14	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	2	37	0	39	14	284	5	7	521	12
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	10	0	10	4	75	1	2	138	3
Total Analysis Volume [veh/h]	11	0	2	39	0	41	15	300	5	7	551	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.15	0.00	0.08	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	21.46	19.05	10.59	22.21	21.34	14.82	8.59	0.00	0.00	7.86	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.16	0.87	0.87	0.87	0.04	0.02	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.99	3.99	3.99	21.85	21.85	21.85	1.05	0.52	0.00	0.42	0.42	0.42
d_A, Approach Delay [s/veh]	19.79			18.42			0.40			0.10		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.95											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.355

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	231	2	32	248	23	33	41	21	21	123	30
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	70	1	10	75	7	10	12	6	6	37	9
Total Analysis Volume [veh/h]	28	279	2	39	300	28	40	50	25	25	149	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	546	591	592	551	598	610	574	593
Degree of Utilization, x	0.05	0.24	0.24	0.07	0.27	0.27	0.20	0.35

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	0.92	0.92	0.23	1.11	1.08	0.74	1.60
95th-Percentile Queue Length [ft]	4.05	23.00	22.96	5.69	27.77	27.03	18.56	39.89
Approach Delay [s/veh]	10.58			10.74			10.84	12.38
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.05							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.308

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	4	33	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	156	10	40	153	90	59	192	51	19	415	46
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	46	3	12	45	26	17	56	15	6	121	13
Total Analysis Volume [veh/h]	76	182	12	47	179	105	69	224	60	22	485	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	28	28	6	26	26	7	16	16	4	12	12
g / C, Green / Cycle	0.11	0.40	0.40	0.09	0.38	0.38	0.11	0.23	0.23	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.01	0.01	0.05	0.07	0.04	0.07	0.04	0.01	0.14	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	374	1368	611	293	1285	574	184	799	357	89	609	272
d1, Uniform Delay [s]	28.33	13.39	12.78	29.65	14.48	14.74	29.15	22.10	21.50	31.98	27.68	24.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.20	0.06	0.25	0.23	0.70	1.26	0.19	0.22	1.42	2.44	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.13	0.02	0.16	0.14	0.18	0.37	0.28	0.17	0.25	0.80	0.20
d, Delay for Lane Group [s/veh]	28.60	13.59	12.84	29.90	14.71	15.44	30.41	22.29	21.72	33.40	30.12	24.99
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.54	0.79	0.11	0.34	0.83	1.05	1.04	1.36	0.72	0.36	3.66	0.71
50th-Percentile Queue Length [ft/ln]	13.49	19.87	2.63	8.60	20.72	26.32	26.07	33.93	17.96	9.07	91.58	17.79
95th-Percentile Queue Length [veh/ln]	0.97	1.43	0.19	0.62	1.49	1.90	1.88	2.44	1.29	0.65	6.59	1.28
95th-Percentile Queue Length [ft/ln]	24.28	35.76	4.73	15.48	37.30	47.38	46.93	61.08	32.32	16.32	164.84	32.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.60	13.59	12.84	29.90	14.71	15.44	30.41	22.29	21.72	33.40	30.12	24.99
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.78			17.10			23.78			29.76		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.46											
Intersection LOS	C											
Intersection V/C	0.308											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	29	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	13	34	233	412	141
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	4	10	67	118	41
Total Analysis Volume [veh/h]	97	15	39	268	474	162
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.03	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	23.12	17.79	8.92	0.00	0.00	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.54	1.54	0.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	38.60	38.60	3.18	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	22.41		1.13		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.71					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	5	14	11	4	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	216	19	129	287	44	42	220	59	23	479	165
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	57	5	34	76	12	11	58	16	6	126	43
Total Analysis Volume [veh/h]	58	227	20	136	302	46	44	232	62	24	504	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	21	0	17	26	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	6	26	26	18	18	18	18	18	18
g / C, Green / Cycle	0.07	0.39	0.39	0.11	0.43	0.43	0.30	0.30	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.07	0.08	0.10	0.10	0.05	0.13	0.04	0.02	0.28	0.11
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1718	909	1800	1530	1167	1800	1530
c, Capacity [veh/h]	128	710	690	182	767	732	120	540	459	311	540	459
d1, Uniform Delay [s]	26.67	11.86	11.87	26.09	10.99	11.00	30.08	16.92	15.36	21.48	20.47	16.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.50	0.54	0.56	5.94	0.70	0.75	1.86	0.54	0.13	0.10	9.21	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

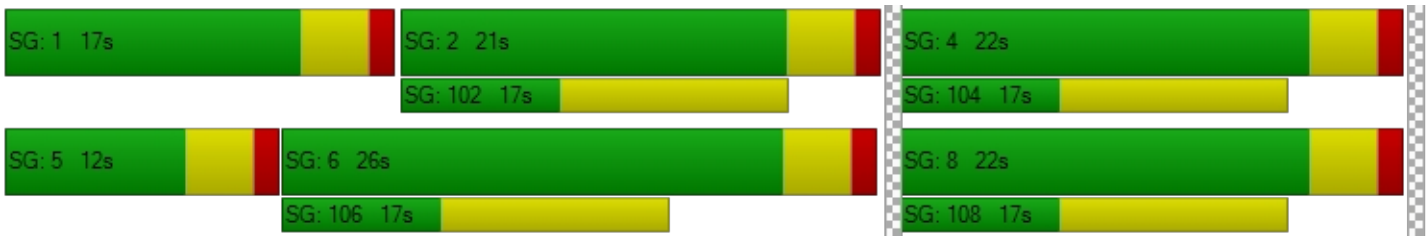
X, volume / capacity	0.45	0.18	0.18	0.75	0.23	0.23	0.37	0.43	0.14	0.08	0.93	0.38
d, Delay for Lane Group [s/veh]	29.17	12.40	12.44	32.03	11.69	11.75	31.95	17.46	15.50	21.58	29.68	17.15
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	0.95	0.94	1.95	1.28	1.25	0.63	2.18	0.53	0.26	6.90	1.61
50th-Percentile Queue Length [ft/ln]	19.74	23.74	23.48	48.65	32.08	31.20	15.74	54.56	13.17	6.45	172.61	40.37
95th-Percentile Queue Length [veh/ln]	1.42	1.71	1.69	3.50	2.31	2.25	1.13	3.93	0.95	0.46	11.21	2.91
95th-Percentile Queue Length [ft/ln]	35.53	42.72	42.27	87.57	57.75	56.17	28.33	98.22	23.70	11.62	280.34	72.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.17	12.42	12.44	32.03	11.72	11.75	31.95	17.46	15.50	21.58	29.68	17.15
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	15.60			17.43			18.99			26.30		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.82											
Intersection LOS	C											
Intersection V/C	0.495											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 3 Existing Plus Project MD
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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	4	0	4	0	0	0	3	1	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**133**	**646**	**72**	**271**	**665**	**42**	**57**	**581**	**191**	**35**	**241**	**132**	**3066**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	23	0	0	8	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**24**	**939**	**37**	**88**	**896**	**49**	**8**	**5**	**13**	**44**	**9**	**239**	**2351**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	3	8	0	0	0	3	0	8	8	23	53
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**54**	**452**	**16**	**84**	**459**	**304**	**236**	**226**	**39**	**71**	**292**	**193**	**2426**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	37	0	39	14	0	0	0	0	12	102
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**10**	**0**	**2**	**37**	**0**	**39**	**14**	**284**	**5**	**7**	**521**	**12**	**931**

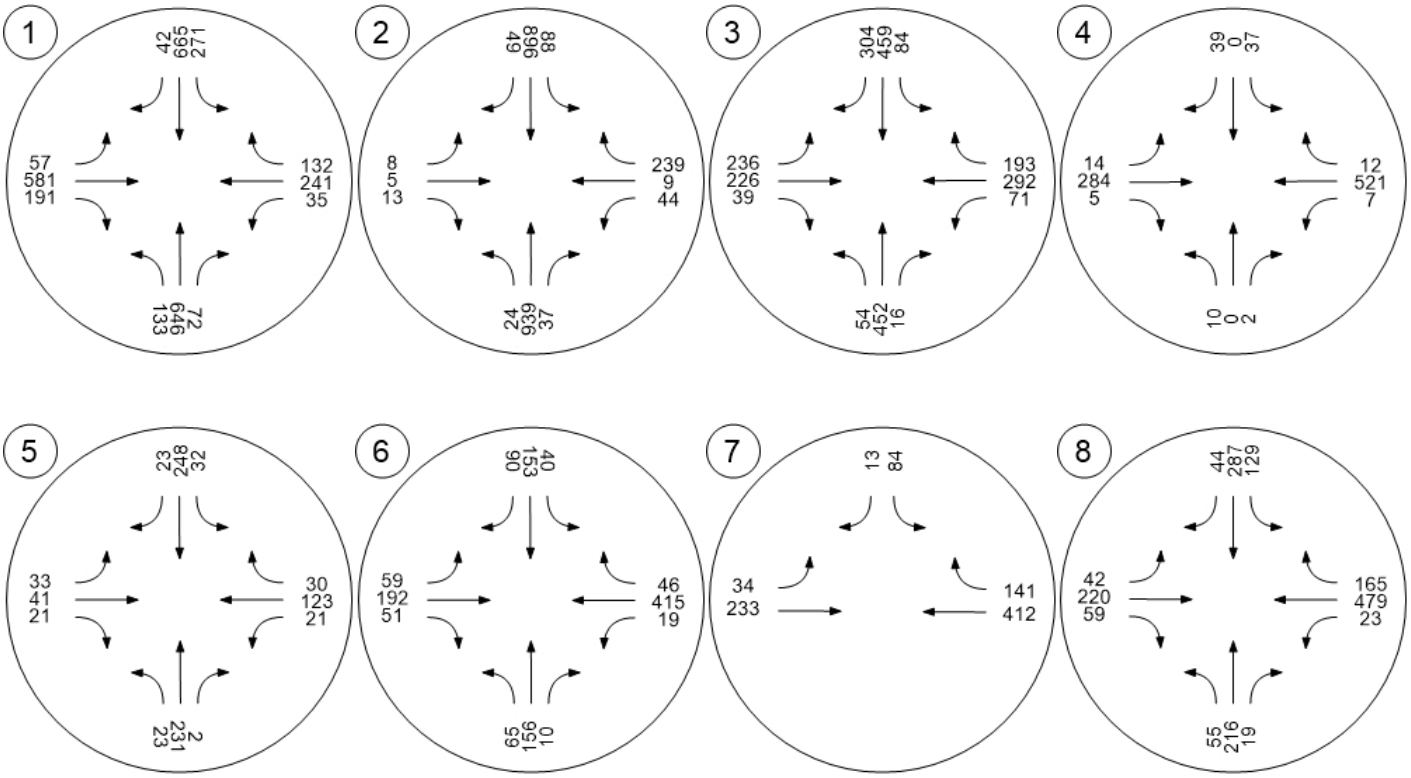
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	1	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**23**	**231**	**2**	**32**	**248**	**23**	**33**	**41**	**21**	**21**	**123**	**30**	**828**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	4	33	0	0	11	0	49
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**65**	**156**	**10**	**40**	**153**	**90**	**59**	**192**	**51**	**19**	**415**	**46**	**1296**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	4	29	10	0	44
		Other	0	0	0	0	0	0	0
		Future Total	**84**	**13**	**34**	**233**	**412**	**141**	**917**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	5	14	11	4	0	4	0	39
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**55**	**216**	**19**	**129**	**287**	**44**	**42**	**220**	**59**	**23**	**479**	**165**	**1738**

Traffic Volume - Future Total Volume



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Scenario 3 Existing Plus Project MD
1/17/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Right	0.605	26.0	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.408	13.4	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.447	21.6	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.122	24.9	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.276	10.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.226	22.8	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.058	17.4	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.401	18.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	8	3	0	13	0	0	0	8	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	784	43	232	693	60	64	443	163	40	606	318
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	207	11	61	183	16	17	117	43	11	160	84
Total Analysis Volume [veh/h]	269	826	45	244	730	63	67	467	172	42	639	335
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	22	0	11	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	7	17	17	5	21	21	4	20	20
g / C, Green / Cycle	0.11	0.26	0.26	0.11	0.26	0.26	0.08	0.33	0.33	0.06	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.08	0.17	0.03	0.07	0.15	0.04	0.04	0.14	0.11	0.02	0.29	0.29
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	359	1299	405	354	1292	403	130	1114	498	98	552	489
d1, Uniform Delay [s]	28.16	21.13	18.10	28.01	20.72	18.39	28.90	17.14	16.68	29.61	21.90	21.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.16	2.39	0.55	2.38	1.79	0.82	3.15	0.25	0.41	2.91	11.62	12.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.64	0.11	0.69	0.56	0.16	0.52	0.42	0.35	0.43	0.94	0.94
d, Delay for Lane Group [s/veh]	31.32	23.52	18.66	30.39	22.51	19.21	32.05	17.39	17.09	32.51	33.53	34.70
Lane Group LOS	C	C	B	C	C	B	C	B	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.99	3.51	0.51	1.77	3.00	0.73	1.03	2.36	1.72	0.66	8.25	7.47
50th-Percentile Queue Length [ft/ln]	49.84	87.69	12.83	44.31	75.05	18.33	25.72	59.11	43.10	16.47	206.36	186.78
95th-Percentile Queue Length [veh/ln]	3.59	6.31	0.92	3.19	5.40	1.32	1.85	4.26	3.10	1.19	12.97	11.95
95th-Percentile Queue Length [ft/ln]	89.71	157.85	23.10	79.76	135.09	32.99	46.29	106.41	77.58	29.65	324.16	298.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.32	23.52	18.66	30.39	22.51	19.21	32.05	17.39	17.09	32.51	33.75	34.70
Movement LOS	C	C	B	C	C	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	25.17			24.16			18.71			34.01		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	26.04											
Intersection LOS	C											
Intersection V/C	0.605											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	956	49	138	1190	23	10	11	18	28	3	99
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	261	13	38	325	6	3	3	5	8	1	27
Total Analysis Volume [veh/h]	15	1044	53	151	1299	25	11	12	20	31	3	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	40	40	8	46	46	4	4	7	7
g / C, Green / Cycle	0.03	0.53	0.53	0.11	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.03	0.09	0.25	0.25	0.01	0.01	0.02	0.07
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	45	2589	808	184	2087	1086	99	86	164	147
d1, Uniform Delay [s]	35.95	10.63	8.67	32.84	7.70	7.70	33.90	33.90	31.28	33.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.36	0.47	0.16	8.85	0.62	1.18	1.19	1.36	0.55	7.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

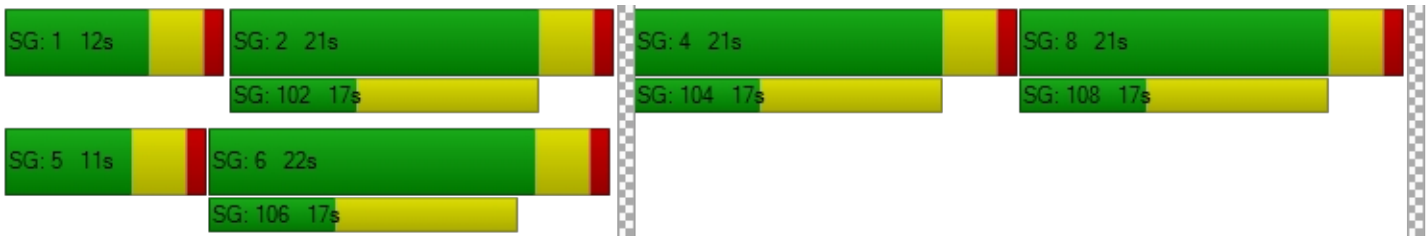
X, volume / capacity	0.34	0.40	0.07	0.82	0.42	0.42	0.23	0.23	0.19	0.75
d, Delay for Lane Group [s/veh]	40.31	11.10	8.83	41.69	8.31	8.88	35.09	35.26	31.83	40.71
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.30	2.68	0.35	2.94	2.84	3.13	0.43	0.38	0.52	2.17
50th-Percentile Queue Length [ft/ln]	7.51	66.93	8.84	73.61	71.03	78.16	10.74	9.44	12.88	54.21
95th-Percentile Queue Length [veh/ln]	0.54	4.82	0.64	5.30	5.11	5.63	0.77	0.68	0.93	3.90
95th-Percentile Queue Length [ft/ln]	13.53	120.47	15.91	132.49	127.86	140.69	19.33	17.00	23.19	97.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.31	11.10	8.83	41.69	8.50	8.88	35.09	35.09	35.26	31.83	40.71	40.71
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.39			11.90			35.17			38.77		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	13.43											
Intersection LOS	B											
Intersection V/C	0.408											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	25	0	0	0	8	0	5	5	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	565	75	251	643	159	166	119	16	139	195	185
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	145	19	65	165	41	43	31	4	36	50	48
Total Analysis Volume [veh/h]	43	581	77	258	662	164	171	122	16	143	201	190
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	8	12	12	7	10	10
g / C, Green / Cycle	0.06	0.36	0.36	0.11	0.41	0.41	0.12	0.18	0.18	0.11	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.05	0.08	0.14	0.11	0.10	0.04	0.01	0.08	0.11	0.12
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	104	1779	555	359	2010	627	212	609	272	183	289	246
d1, Uniform Delay [s]	29.55	15.03	13.95	28.17	13.13	12.72	27.84	22.89	22.31	28.42	25.89	26.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.49	0.52	2.72	0.44	1.01	7.04	0.16	0.09	7.11	3.01	5.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.33	0.14	0.72	0.33	0.26	0.81	0.20	0.06	0.78	0.70	0.77
d, Delay for Lane Group [s/veh]	32.17	15.52	14.48	30.88	13.57	13.74	34.88	23.05	22.40	35.52	28.90	31.41
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	1.78	0.71	1.83	1.77	1.39	2.71	0.71	0.19	2.33	2.87	2.88
50th-Percentile Queue Length [ft/ln]	16.47	44.39	17.65	45.80	44.27	34.82	67.71	17.87	4.65	58.25	71.85	71.88
95th-Percentile Queue Length [veh/ln]	1.19	3.20	1.27	3.30	3.19	2.51	4.88	1.29	0.33	4.19	5.17	5.18
95th-Percentile Queue Length [ft/ln]	29.65	79.89	31.76	82.44	79.68	62.67	121.88	32.17	8.37	104.85	129.34	129.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.17	15.52	14.48	30.88	13.57	13.74	34.88	23.05	22.40	35.52	28.90	31.41
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.43			17.72			29.56			31.57		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.58											
Intersection LOS	C											
Intersection V/C	0.447											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.122

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	24	0	26	41	0	0	0	0	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	8	24	0	26	41	425	33	9	416	42
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	6	0	7	11	111	9	2	109	11
Total Analysis Volume [veh/h]	14	0	8	25	0	27	43	444	34	9	434	44
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.01	0.12	0.00	0.04	0.04	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	24.30	22.34	12.06	24.88	23.66	13.20	8.42	0.00	0.00	8.32	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.27	0.59	0.59	0.59	0.12	0.06	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	6.75	6.75	6.75	14.72	14.72	14.72	2.92	1.46	0.00	0.62	0.62	0.62
d_A, Approach Delay [s/veh]	19.85			18.82			0.70			0.15		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.71											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.276

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	4	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	289	11	67	279	18	19	74	23	5	62	22
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	83	3	19	80	5	5	21	7	1	18	6
Total Analysis Volume [veh/h]	58	330	13	77	319	21	22	85	26	6	71	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	571	620	626	572	623	632	583	582
Degree of Utilization, x	0.10	0.28	0.27	0.13	0.27	0.27	0.23	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.34	1.12	1.11	0.46	1.11	1.08	0.87	0.63
95th-Percentile Queue Length [ft]	8.44	28.08	27.74	11.57	27.64	27.08	21.86	15.79
Approach Delay [s/veh]	10.52			10.45			11.00	10.50
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	10.55							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.226

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	3	21	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	236	14	59	160	53	31	301	114	7	332	50
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	62	4	16	42	14	8	79	30	2	87	13
Total Analysis Volume [veh/h]	87	249	15	62	169	56	33	317	120	7	350	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	32	32	7	31	31	5	14	14	1	10	10
g / C, Green / Cycle	0.12	0.46	0.46	0.10	0.44	0.44	0.07	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.01	0.02	0.05	0.04	0.02	0.09	0.08	0.00	0.10	0.03
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	394	1566	699	340	1511	674	120	661	295	35	490	219
d1, Uniform Delay [s]	28.04	11.17	10.46	28.85	11.55	11.40	30.98	25.21	24.83	33.87	28.73	26.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.22	0.06	0.25	0.15	0.24	1.22	0.54	0.90	2.84	1.95	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.16	0.02	0.18	0.11	0.08	0.27	0.48	0.41	0.20	0.71	0.24
d, Delay for Lane Group [s/veh]	28.32	11.39	10.52	29.11	11.70	11.64	32.20	25.75	25.73	36.71	30.68	27.29
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.61	0.95	0.11	0.45	0.66	0.46	0.52	2.13	1.63	0.13	2.65	0.74
50th-Percentile Queue Length [ft/ln]	15.34	23.84	2.83	11.13	16.49	11.40	13.09	53.35	40.69	3.37	66.19	18.57
95th-Percentile Queue Length [veh/ln]	1.10	1.72	0.20	0.80	1.19	0.82	0.94	3.84	2.93	0.24	4.77	1.34
95th-Percentile Queue Length [ft/ln]	27.62	42.91	5.10	20.04	29.69	20.53	23.56	96.03	73.25	6.07	119.14	33.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.32	11.39	10.52	29.11	11.70	11.64	32.20	25.75	25.73	36.71	30.68	27.29
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.55			15.45			26.20			30.34		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.82											
Intersection LOS	C											
Intersection V/C	0.226											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.058

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	18	34	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	11	10	381	388	14
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	108	110	4
Total Analysis Volume [veh/h]	18	12	11	431	438	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.44	11.62	8.25	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.29	6.29	0.75	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.11		0.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.59					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	17	7	8	3	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	292	55	125	278	37	36	310	56	22	305	170
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	79	15	34	75	10	10	84	15	6	83	46
Total Analysis Volume [veh/h]	52	317	60	136	302	40	39	336	61	24	331	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	26	26	6	28	28	16	16	16	16	16	16
g / C, Green / Cycle	0.07	0.43	0.43	0.11	0.46	0.46	0.27	0.27	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.08	0.10	0.10	0.04	0.19	0.04	0.02	0.18	0.12
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1728	1066	1800	1530	1061	1800	1530
c, Capacity [veh/h]	120	768	727	182	834	800	198	481	409	194	481	409
d1, Uniform Delay [s]	26.84	11.07	11.09	26.09	9.59	9.60	26.83	19.85	16.82	26.62	19.78	18.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.46	0.78	0.84	5.94	0.57	0.60	0.48	1.84	0.17	0.28	1.76	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

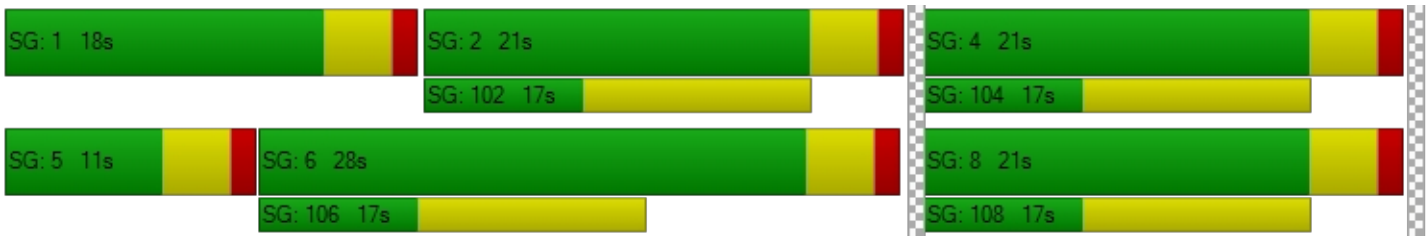
X, volume / capacity	0.43	0.25	0.25	0.75	0.21	0.21	0.20	0.70	0.15	0.12	0.69	0.45
d, Delay for Lane Group [s/veh]	29.30	11.85	11.93	32.03	10.16	10.20	27.31	21.69	16.98	26.91	21.54	19.13
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.71	1.40	1.36	1.95	1.12	1.09	0.50	3.74	0.56	0.30	3.66	1.85
50th-Percentile Queue Length [ft/ln]	17.80	35.10	34.09	48.65	27.98	27.30	12.50	93.38	13.89	7.59	91.50	46.36
95th-Percentile Queue Length [veh/ln]	1.28	2.53	2.45	3.50	2.01	1.97	0.90	6.72	1.00	0.55	6.59	3.34
95th-Percentile Queue Length [ft/ln]	32.04	63.18	61.35	87.57	50.36	49.15	22.50	168.08	24.99	13.66	164.70	83.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.30	11.88	11.93	32.03	10.18	10.20	27.31	21.69	16.98	26.91	21.54	19.13
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	14.00			16.40			21.54			20.95		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.35											
Intersection LOS	B											
Intersection V/C	0.401											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: C:\...\PM Ep_MD.pdf

Scenario 3 Existing Plus Project MD
1/17/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	8	3	0	13	0	0	0	8	4	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**255**	**784**	**43**	**232**	**693**	**60**	**64**	**443**	**163**	**40**	**606**	**318**	**3701**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	16	0	0	25	0	0	0	0	0	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**956**	**49**	**138**	**1190**	**23**	**10**	**11**	**18**	**28**	**3**	**99**	**2539**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	8	25	0	0	0	8	0	5	5	16	67
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**42**	**565**	**75**	**251**	**643**	**159**	**166**	**119**	**16**	**139**	**195**	**185**	**2555**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	24	0	26	41	0	0	0	0	42	133
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**13**	**0**	**8**	**24**	**0**	**26**	**41**	**425**	**33**	**9**	**416**	**42**	**1037**

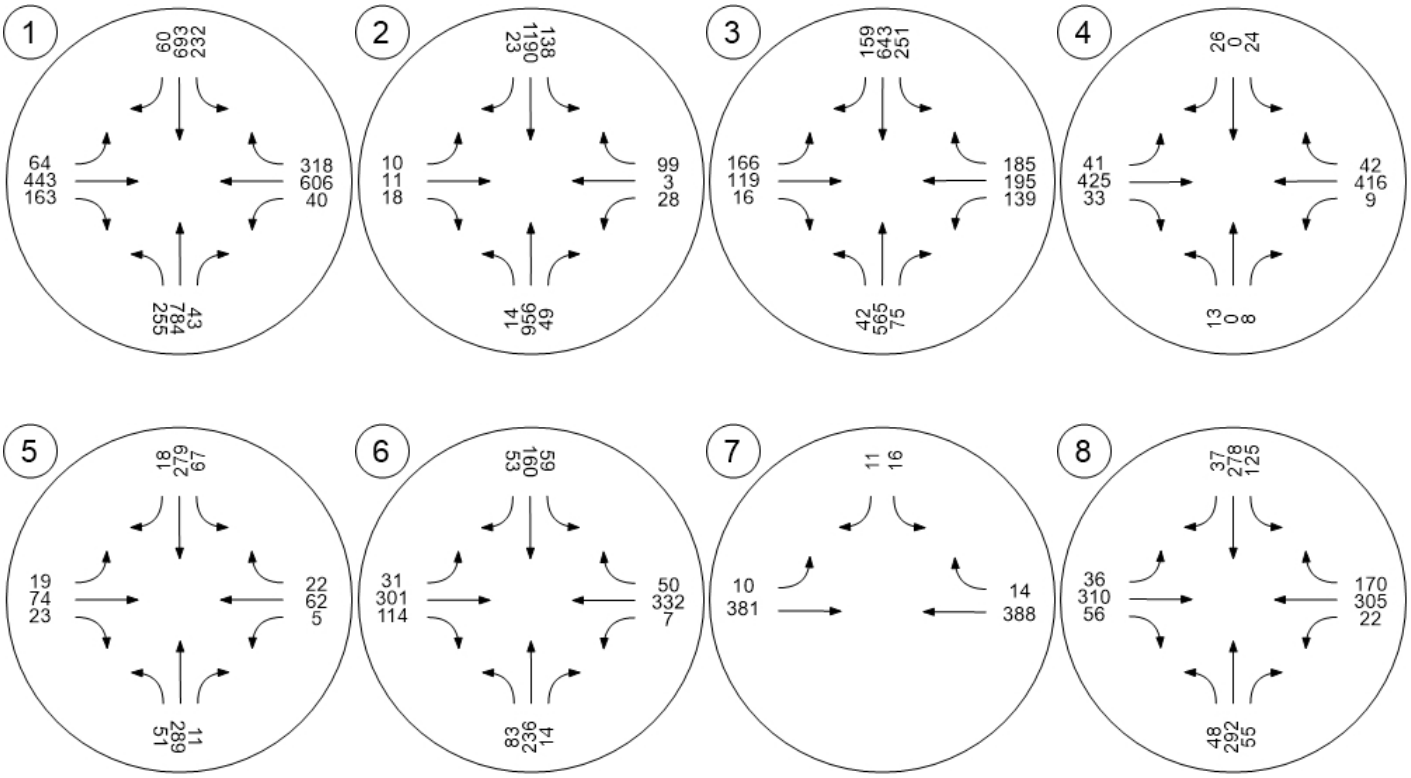
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	4	0	0	0	0	0	0	0	7
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**51**	**289**	**11**	**67**	**279**	**18**	**19**	**74**	**23**	**5**	**62**	**22**	**920**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	4	3	21	0	0	38	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**83**	**236**	**14**	**59**	**160**	**53**	**31**	**301**	**114**	**7**	**332**	**50**	**1440**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	3	18	34	0	59
		Other	0	0	0	0	0	0	0
		Future Total	**16**	**11**	**10**	**381**	**388**	**14**	**820**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	17	7	8	3	0	13	0	52
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**48**	**292**	**55**	**125**	**278**	**37**	**36**	**310**	**56**	**22**	**305**	**170**	**1734**

Traffic Volume - Future Total Volume



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Report File: C:\...\AM Ep_MD_Improvements.pdf

Scenario 3 Existing Plus Project MD - Improvements
1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.494	21.7	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.489	17.2	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.617	24.4	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.131	19.0	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.355	11.0	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.308	23.5	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.325	23.1	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.495	20.8	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.494

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	4	0	4	0	0	0	3	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	646	72	271	665	42	57	581	191	35	241	132
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	174	19	73	179	11	15	156	51	9	65	35
Total Analysis Volume [veh/h]	143	695	77	291	715	45	61	625	205	38	259	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	8	24	24	5	15	15	4	14	14
g / C, Green / Cycle	0.10	0.36	0.36	0.12	0.37	0.37	0.07	0.23	0.23	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.05	0.09	0.15	0.03	0.04	0.18	0.13	0.02	0.12	0.12
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	336	1743	544	392	1824	569	127	774	346	96	374	330
d1, Uniform Delay [s]	27.56	15.80	14.28	27.84	15.07	13.26	29.01	23.92	22.58	29.75	23.19	23.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	0.68	0.55	2.80	0.63	0.27	2.79	2.05	1.63	2.64	1.32	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.40	0.14	0.74	0.39	0.08	0.48	0.81	0.59	0.40	0.56	0.58
d, Delay for Lane Group [s/veh]	28.41	16.48	14.82	30.64	15.70	13.53	31.79	25.97	24.21	32.40	24.51	24.91
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.99	2.29	0.74	2.13	2.28	0.40	0.93	4.21	2.63	0.60	2.69	2.50
50th-Percentile Queue Length [ft/ln]	24.74	57.20	18.41	53.30	56.90	10.08	23.34	105.30	65.70	14.91	67.20	62.42
95th-Percentile Queue Length [veh/ln]	1.78	4.12	1.33	3.84	4.10	0.73	1.68	7.58	4.73	1.07	4.84	4.49
95th-Percentile Queue Length [ft/ln]	44.53	102.97	33.14	95.95	102.41	18.15	42.02	189.45	118.26	26.84	120.96	112.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.41	16.48	14.82	30.64	15.70	13.53	31.79	25.97	24.21	32.40	24.58	24.91
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.21			19.75			25.97			25.37		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.75											
Intersection LOS	C											
Intersection V/C	0.494											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.489

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	939	37	88	896	49	8	5	13	44	9	239
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	248	10	23	237	13	2	1	3	12	2	63
Total Analysis Volume [veh/h]	25	993	39	93	947	52	8	5	14	47	10	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	35	35	6	38	38	3	3	15	15
g / C, Green / Cycle	0.04	0.47	0.47	0.08	0.51	0.51	0.04	0.04	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.03	0.05	0.19	0.19	0.01	0.01	0.03	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1746	1530	1714	1539
c, Capacity [veh/h]	67	2299	717	138	1750	895	72	63	337	302
d1, Uniform Delay [s]	35.21	13.29	10.87	33.56	11.14	11.15	34.79	34.85	24.94	29.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.46	0.59	0.14	5.56	0.62	1.22	1.19	1.76	0.19	7.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

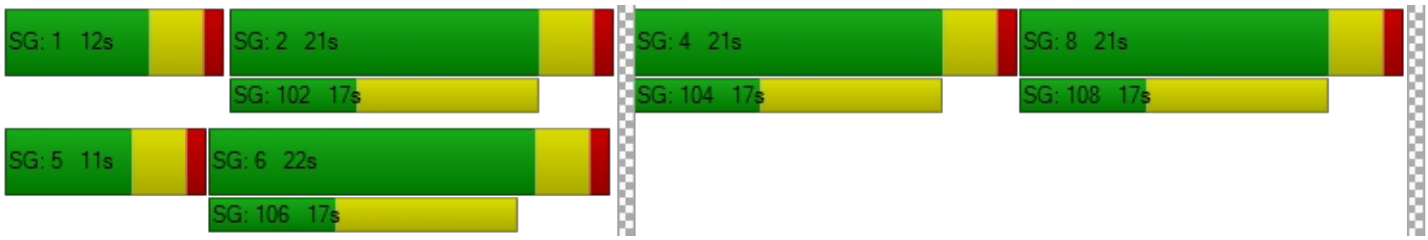
X, volume / capacity	0.37	0.43	0.05	0.67	0.38	0.38	0.18	0.22	0.14	0.87
d, Delay for Lane Group [s/veh]	38.66	13.88	11.02	39.12	11.77	12.37	35.98	36.61	25.13	36.91
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	3.04	0.31	1.75	2.86	3.08	0.25	0.28	0.67	4.90
50th-Percentile Queue Length [ft/ln]	11.77	76.10	7.75	43.72	71.42	76.88	6.27	6.89	16.66	122.56
95th-Percentile Queue Length [veh/ln]	0.85	5.48	0.56	3.15	5.14	5.54	0.45	0.50	1.20	8.53
95th-Percentile Queue Length [ft/ln]	21.18	136.98	13.95	78.69	128.55	138.38	11.29	12.41	29.99	213.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.66	13.88	11.02	39.12	11.95	12.37	35.98	35.98	36.61	25.13	36.91	36.91
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	14.36			14.28			36.31			35.13		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	17.15											
Intersection LOS	B											
Intersection V/C	0.489											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.617

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	8	0	0	0	3	0	8	8	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	452	16	84	459	304	236	226	39	71	292	193
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	116	4	22	118	78	61	58	10	18	75	50
Total Analysis Volume [veh/h]	56	465	16	87	473	313	243	233	40	73	301	199
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	23	23	6	24	24	12	20	20	5	14	14
g / C, Green / Cycle	0.07	0.32	0.32	0.08	0.34	0.34	0.17	0.29	0.29	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.01	0.03	0.10	0.20	0.14	0.07	0.03	0.04	0.17	0.13
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1576	492	277	1649	515	288	993	443	133	359	305
d1, Uniform Delay [s]	31.52	17.87	16.35	30.31	17.12	19.45	28.32	19.01	18.20	31.21	27.04	25.89
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.00	0.48	0.12	0.64	0.44	5.27	6.61	0.12	0.09	3.48	5.27	2.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

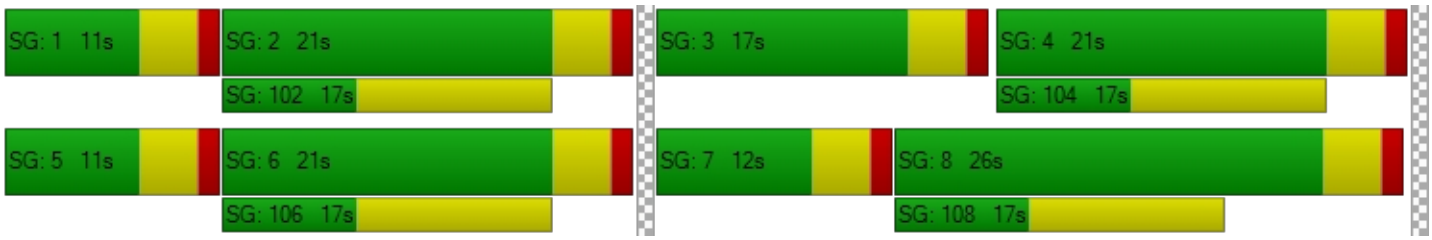
X, volume / capacity	0.48	0.30	0.03	0.31	0.29	0.61	0.84	0.23	0.09	0.55	0.84	0.65
d, Delay for Lane Group [s/veh]	34.51	18.35	16.47	30.95	17.56	24.72	34.93	19.13	18.28	34.69	32.31	28.25
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	1.68	0.17	0.64	1.62	4.24	4.05	1.27	0.42	1.23	4.88	2.95
50th-Percentile Queue Length [ft/ln]	23.24	41.96	4.22	16.08	40.38	106.12	101.23	31.82	10.59	30.70	121.89	73.83
95th-Percentile Queue Length [veh/ln]	1.67	3.02	0.30	1.16	2.91	7.62	7.29	2.29	0.76	2.21	8.50	5.32
95th-Percentile Queue Length [ft/ln]	41.84	75.53	7.59	28.95	72.68	190.59	182.22	57.27	19.06	55.26	212.42	132.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	18.35	16.47	30.95	17.56	24.72	34.93	19.13	18.28	34.69	32.31	28.25
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	19.98			21.46			26.51			31.21		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	24.42											
Intersection LOS	C											
Intersection V/C	0.617											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.131

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	39	14	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	2	37	0	39	14	284	5	7	521	12
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	10	0	10	4	75	1	2	138	3
Total Analysis Volume [veh/h]	11	0	2	39	0	41	15	300	5	7	551	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.13	0.00	0.06	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	15.66	18.62	9.45	19.04	20.17	11.94	8.59	0.00	0.00	7.86	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.68	0.68	0.68	0.04	0.00	0.00	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.62	2.62	2.62	17.09	17.09	17.09	1.12	0.00	0.00	0.42	0.00	0.00
d_A, Approach Delay [s/veh]	14.71			15.40			0.40			0.10		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	1.63											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.355

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	231	2	32	248	23	33	41	21	21	123	30
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	70	1	10	75	7	10	12	6	6	37	9
Total Analysis Volume [veh/h]	28	279	2	39	300	28	40	50	25	25	149	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	546	591	592	551	598	610	574	593
Degree of Utilization, x	0.05	0.24	0.24	0.07	0.27	0.27	0.20	0.35

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	0.92	0.92	0.23	1.11	1.08	0.74	1.60
95th-Percentile Queue Length [ft]	4.05	23.00	22.96	5.69	27.77	27.03	18.56	39.89
Approach Delay [s/veh]	10.58			10.74			10.84	12.38
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.05							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.308

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	4	33	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	156	10	40	153	90	59	192	51	19	415	46
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	46	3	12	45	26	17	56	15	6	121	13
Total Analysis Volume [veh/h]	76	182	12	47	179	105	69	224	60	22	485	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	28	28	6	26	26	7	16	16	4	12	12
g / C, Green / Cycle	0.11	0.40	0.40	0.09	0.38	0.38	0.11	0.23	0.23	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.01	0.01	0.05	0.07	0.04	0.07	0.04	0.01	0.14	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	374	1368	611	293	1285	574	184	799	357	89	609	272
d1, Uniform Delay [s]	28.33	13.39	12.78	29.65	14.48	14.74	29.15	22.10	21.50	31.98	27.68	24.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.20	0.06	0.25	0.23	0.70	1.26	0.19	0.22	1.42	2.44	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.13	0.02	0.16	0.14	0.18	0.37	0.28	0.17	0.25	0.80	0.20
d, Delay for Lane Group [s/veh]	28.60	13.59	12.84	29.90	14.71	15.44	30.41	22.29	21.72	33.40	30.12	24.99
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.54	0.79	0.11	0.34	0.83	1.05	1.04	1.36	0.72	0.36	3.66	0.71
50th-Percentile Queue Length [ft/ln]	13.49	19.87	2.63	8.60	20.72	26.32	26.07	33.93	17.96	9.07	91.58	17.79
95th-Percentile Queue Length [veh/ln]	0.97	1.43	0.19	0.62	1.49	1.90	1.88	2.44	1.29	0.65	6.59	1.28
95th-Percentile Queue Length [ft/ln]	24.28	35.76	4.73	15.48	37.30	47.38	46.93	61.08	32.32	16.32	164.84	32.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.60	13.59	12.84	29.90	14.71	15.44	30.41	22.29	21.72	33.40	30.12	24.99
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.78			17.10			23.78			29.76		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.46											
Intersection LOS	C											
Intersection V/C	0.308											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	29	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	13	34	233	412	141
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	4	10	67	118	41
Total Analysis Volume [veh/h]	97	15	39	268	474	162
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.03	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	23.12	17.79	8.92	0.00	0.00	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.54	1.54	0.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	38.60	38.60	3.18	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	22.41		1.13		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.71					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	5	14	11	4	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	216	19	129	287	44	42	220	59	23	479	165
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	57	5	34	76	12	11	58	16	6	126	43
Total Analysis Volume [veh/h]	58	227	20	136	302	46	44	232	62	24	504	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	21	0	17	26	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	6	26	26	18	18	18	18	18	18
g / C, Green / Cycle	0.07	0.39	0.39	0.11	0.43	0.43	0.30	0.30	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.07	0.08	0.10	0.10	0.05	0.13	0.04	0.02	0.28	0.11
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1718	909	1800	1530	1167	1800	1530
c, Capacity [veh/h]	128	710	690	182	767	732	120	540	459	311	540	459
d1, Uniform Delay [s]	26.67	11.86	11.87	26.09	10.99	11.00	30.08	16.92	15.36	21.48	20.47	16.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.50	0.54	0.56	5.94	0.70	0.75	1.86	0.54	0.13	0.10	9.21	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

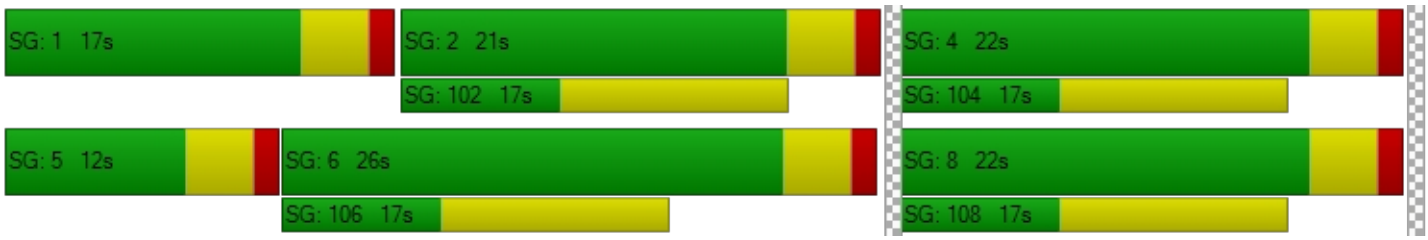
X, volume / capacity	0.45	0.18	0.18	0.75	0.23	0.23	0.37	0.43	0.14	0.08	0.93	0.38
d, Delay for Lane Group [s/veh]	29.17	12.40	12.44	32.03	11.69	11.75	31.95	17.46	15.50	21.58	29.68	17.15
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	0.95	0.94	1.95	1.28	1.25	0.63	2.18	0.53	0.26	6.90	1.61
50th-Percentile Queue Length [ft/ln]	19.74	23.74	23.48	48.65	32.08	31.20	15.74	54.56	13.17	6.45	172.61	40.37
95th-Percentile Queue Length [veh/ln]	1.42	1.71	1.69	3.50	2.31	2.25	1.13	3.93	0.95	0.46	11.21	2.91
95th-Percentile Queue Length [ft/ln]	35.53	42.72	42.27	87.57	57.75	56.17	28.33	98.22	23.70	11.62	280.34	72.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.17	12.42	12.44	32.03	11.72	11.75	31.95	17.46	15.50	21.58	29.68	17.15
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	15.60			17.43			18.99			26.30		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.82											
Intersection LOS	C											
Intersection V/C	0.495											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: C:\...\AM Ep_MD_Improvements.pdf

Scenario 3 Existing Plus Project MD - Improvements
1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	4	0	4	0	0	0	3	1	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**133**	**646**	**72**	**271**	**665**	**42**	**57**	**581**	**191**	**35**	**241**	**132**	**3066**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	23	0	0	8	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**24**	**939**	**37**	**88**	**896**	**49**	**8**	**5**	**13**	**44**	**9**	**239**	**2351**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	3	8	0	0	0	3	0	8	8	23	53
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**54**	**452**	**16**	**84**	**459**	**304**	**236**	**226**	**39**	**71**	**292**	**193**	**2426**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	37	0	39	14	0	0	0	0	12	102
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**10**	**0**	**2**	**37**	**0**	**39**	**14**	**284**	**5**	**7**	**521**	**12**	**931**

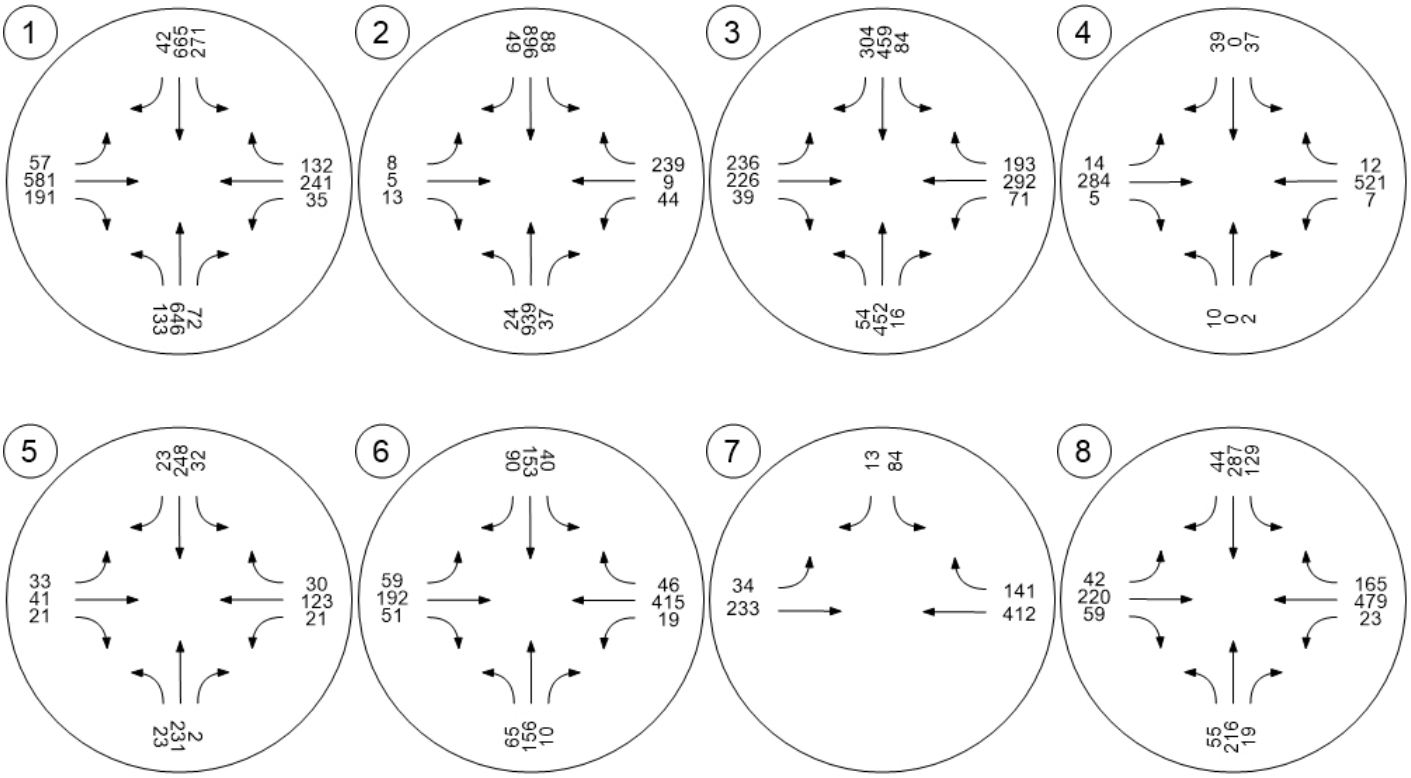
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	1	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**23**	**231**	**2**	**32**	**248**	**23**	**33**	**41**	**21**	**21**	**123**	**30**	**828**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	4	33	0	0	11	0	49
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**65**	**156**	**10**	**40**	**153**	**90**	**59**	**192**	**51**	**19**	**415**	**46**	**1296**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	4	29	10	0	44
		Other	0	0	0	0	0	0	0
		Future Total	**84**	**13**	**34**	**233**	**412**	**141**	**917**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	5	14	11	4	0	4	0	39
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**55**	**216**	**19**	**129**	**287**	**44**	**42**	**220**	**59**	**23**	**479**	**165**	**1738**

Traffic Volume - Future Total Volume



TTM 37884

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Report File: C:\...\PM Ep_MD_Improvements.pdf

Scenario 3 Existing Plus Project MD - Improvements
1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Right	0.605	26.0	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.408	13.4	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.447	21.6	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.091	19.4	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.276	10.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.226	22.8	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.058	17.4	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.401	18.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	8	3	0	13	0	0	0	8	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	784	43	232	693	60	64	443	163	40	606	318
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	207	11	61	183	16	17	117	43	11	160	84
Total Analysis Volume [veh/h]	269	826	45	244	730	63	67	467	172	42	639	335
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	22	0	11	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	7	17	17	5	21	21	4	20	20
g / C, Green / Cycle	0.11	0.26	0.26	0.11	0.26	0.26	0.08	0.33	0.33	0.06	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.08	0.17	0.03	0.07	0.15	0.04	0.04	0.14	0.11	0.02	0.29	0.29
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	359	1299	405	354	1292	403	130	1114	498	98	552	489
d1, Uniform Delay [s]	28.16	21.13	18.10	28.01	20.72	18.39	28.90	17.14	16.68	29.61	21.90	21.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.16	2.39	0.55	2.38	1.79	0.82	3.15	0.25	0.41	2.91	11.62	12.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.64	0.11	0.69	0.56	0.16	0.52	0.42	0.35	0.43	0.94	0.94
d, Delay for Lane Group [s/veh]	31.32	23.52	18.66	30.39	22.51	19.21	32.05	17.39	17.09	32.51	33.53	34.70
Lane Group LOS	C	C	B	C	C	B	C	B	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.99	3.51	0.51	1.77	3.00	0.73	1.03	2.36	1.72	0.66	8.25	7.47
50th-Percentile Queue Length [ft/ln]	49.84	87.69	12.83	44.31	75.05	18.33	25.72	59.11	43.10	16.47	206.36	186.78
95th-Percentile Queue Length [veh/ln]	3.59	6.31	0.92	3.19	5.40	1.32	1.85	4.26	3.10	1.19	12.97	11.95
95th-Percentile Queue Length [ft/ln]	89.71	157.85	23.10	79.76	135.09	32.99	46.29	106.41	77.58	29.65	324.16	298.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.32	23.52	18.66	30.39	22.51	19.21	32.05	17.39	17.09	32.51	33.75	34.70
Movement LOS	C	C	B	C	C	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	25.17			24.16			18.71			34.01		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	26.04											
Intersection LOS	C											
Intersection V/C	0.605											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	956	49	138	1190	23	10	11	18	28	3	99
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	261	13	38	325	6	3	3	5	8	1	27
Total Analysis Volume [veh/h]	15	1044	53	151	1299	25	11	12	20	31	3	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	40	40	8	46	46	4	4	7	7
g / C, Green / Cycle	0.03	0.53	0.53	0.11	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.03	0.09	0.25	0.25	0.01	0.01	0.02	0.07
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	45	2589	808	184	2087	1086	99	86	164	147
d1, Uniform Delay [s]	35.95	10.63	8.67	32.84	7.70	7.70	33.90	33.90	31.28	33.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.36	0.47	0.16	8.85	0.62	1.18	1.19	1.36	0.55	7.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

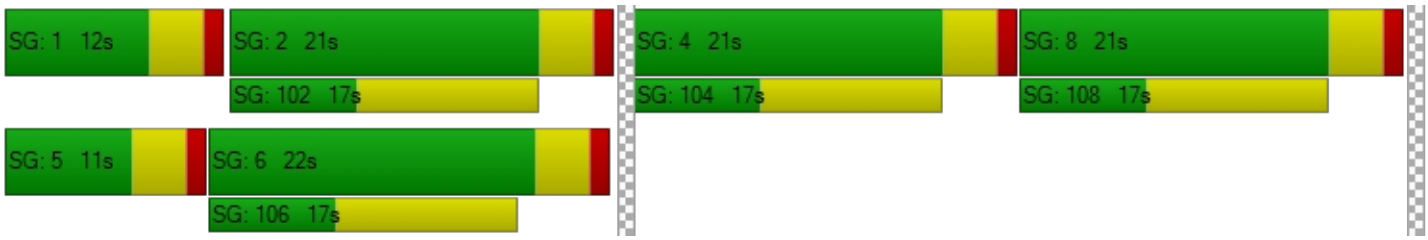
X, volume / capacity	0.34	0.40	0.07	0.82	0.42	0.42	0.23	0.23	0.19	0.75
d, Delay for Lane Group [s/veh]	40.31	11.10	8.83	41.69	8.31	8.88	35.09	35.26	31.83	40.71
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.30	2.68	0.35	2.94	2.84	3.13	0.43	0.38	0.52	2.17
50th-Percentile Queue Length [ft/ln]	7.51	66.93	8.84	73.61	71.03	78.16	10.74	9.44	12.88	54.21
95th-Percentile Queue Length [veh/ln]	0.54	4.82	0.64	5.30	5.11	5.63	0.77	0.68	0.93	3.90
95th-Percentile Queue Length [ft/ln]	13.53	120.47	15.91	132.49	127.86	140.69	19.33	17.00	23.19	97.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.31	11.10	8.83	41.69	8.50	8.88	35.09	35.09	35.26	31.83	40.71	40.71
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.39			11.90			35.17			38.77		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	13.43											
Intersection LOS	B											
Intersection V/C	0.408											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	25	0	0	0	8	0	5	5	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	565	75	251	643	159	166	119	16	139	195	185
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	145	19	65	165	41	43	31	4	36	50	48
Total Analysis Volume [veh/h]	43	581	77	258	662	164	171	122	16	143	201	190
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	8	12	12	7	10	10
g / C, Green / Cycle	0.06	0.36	0.36	0.11	0.41	0.41	0.12	0.18	0.18	0.11	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.05	0.08	0.14	0.11	0.10	0.04	0.01	0.08	0.11	0.12
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	104	1779	555	359	2010	627	212	609	272	183	289	246
d1, Uniform Delay [s]	29.55	15.03	13.95	28.17	13.13	12.72	27.84	22.89	22.31	28.42	25.89	26.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.49	0.52	2.72	0.44	1.01	7.04	0.16	0.09	7.11	3.01	5.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.33	0.14	0.72	0.33	0.26	0.81	0.20	0.06	0.78	0.70	0.77
d, Delay for Lane Group [s/veh]	32.17	15.52	14.48	30.88	13.57	13.74	34.88	23.05	22.40	35.52	28.90	31.41
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	1.78	0.71	1.83	1.77	1.39	2.71	0.71	0.19	2.33	2.87	2.88
50th-Percentile Queue Length [ft/ln]	16.47	44.39	17.65	45.80	44.27	34.82	67.71	17.87	4.65	58.25	71.85	71.88
95th-Percentile Queue Length [veh/ln]	1.19	3.20	1.27	3.30	3.19	2.51	4.88	1.29	0.33	4.19	5.17	5.18
95th-Percentile Queue Length [ft/ln]	29.65	79.89	31.76	82.44	79.68	62.67	121.88	32.17	8.37	104.85	129.34	129.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.17	15.52	14.48	30.88	13.57	13.74	34.88	23.05	22.40	35.52	28.90	31.41
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.43			17.72			29.56			31.57		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.58											
Intersection LOS	C											
Intersection V/C	0.447											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.091

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	24	0	26	41	0	0	0	0	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	8	24	0	26	41	425	33	9	416	42
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	6	0	7	11	111	9	2	109	11
Total Analysis Volume [veh/h]	14	0	8	25	0	27	43	444	34	9	434	44
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.01	0.09	0.00	0.04	0.04	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	19.12	22.03	10.37	19.36	22.49	10.94	8.42	0.00	0.00	8.32	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.20	0.43	0.43	0.43	0.12	0.00	0.00	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.99	4.99	4.99	10.72	10.72	10.72	3.06	0.00	0.00	0.62	0.00	0.00
d_A, Approach Delay [s/veh]	15.94			14.99			0.70			0.15		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	1.45											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.276

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	4	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	289	11	67	279	18	19	74	23	5	62	22
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	83	3	19	80	5	5	21	7	1	18	6
Total Analysis Volume [veh/h]	58	330	13	77	319	21	22	85	26	6	71	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	571	620	626	572	623	632	583	582
Degree of Utilization, x	0.10	0.28	0.27	0.13	0.27	0.27	0.23	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.34	1.12	1.11	0.46	1.11	1.08	0.87	0.63
95th-Percentile Queue Length [ft]	8.44	28.08	27.74	11.57	27.64	27.08	21.86	15.79
Approach Delay [s/veh]	10.52			10.45			11.00	10.50
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	10.55							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.226

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	3	21	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	236	14	59	160	53	31	301	114	7	332	50
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	62	4	16	42	14	8	79	30	2	87	13
Total Analysis Volume [veh/h]	87	249	15	62	169	56	33	317	120	7	350	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	32	32	7	31	31	5	14	14	1	10	10
g / C, Green / Cycle	0.12	0.46	0.46	0.10	0.44	0.44	0.07	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.01	0.02	0.05	0.04	0.02	0.09	0.08	0.00	0.10	0.03
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	394	1566	699	340	1511	674	120	661	295	35	490	219
d1, Uniform Delay [s]	28.04	11.17	10.46	28.85	11.55	11.40	30.98	25.21	24.83	33.87	28.73	26.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.22	0.06	0.25	0.15	0.24	1.22	0.54	0.90	2.84	1.95	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.16	0.02	0.18	0.11	0.08	0.27	0.48	0.41	0.20	0.71	0.24
d, Delay for Lane Group [s/veh]	28.32	11.39	10.52	29.11	11.70	11.64	32.20	25.75	25.73	36.71	30.68	27.29
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.61	0.95	0.11	0.45	0.66	0.46	0.52	2.13	1.63	0.13	2.65	0.74
50th-Percentile Queue Length [ft/ln]	15.34	23.84	2.83	11.13	16.49	11.40	13.09	53.35	40.69	3.37	66.19	18.57
95th-Percentile Queue Length [veh/ln]	1.10	1.72	0.20	0.80	1.19	0.82	0.94	3.84	2.93	0.24	4.77	1.34
95th-Percentile Queue Length [ft/ln]	27.62	42.91	5.10	20.04	29.69	20.53	23.56	96.03	73.25	6.07	119.14	33.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.32	11.39	10.52	29.11	11.70	11.64	32.20	25.75	25.73	36.71	30.68	27.29
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.55			15.45			26.20			30.34		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.82											
Intersection LOS	C											
Intersection V/C	0.226											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.058

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	18	34	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	11	10	381	388	14
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	108	110	4
Total Analysis Volume [veh/h]	18	12	11	431	438	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.44	11.62	8.25	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.29	6.29	0.75	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.11		0.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.59					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	17	7	8	3	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	292	55	125	278	37	36	310	56	22	305	170
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	79	15	34	75	10	10	84	15	6	83	46
Total Analysis Volume [veh/h]	52	317	60	136	302	40	39	336	61	24	331	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	26	26	6	28	28	16	16	16	16	16	16
g / C, Green / Cycle	0.07	0.43	0.43	0.11	0.46	0.46	0.27	0.27	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.08	0.10	0.10	0.04	0.19	0.04	0.02	0.18	0.12
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1728	1066	1800	1530	1061	1800	1530
c, Capacity [veh/h]	120	768	727	182	834	800	198	481	409	194	481	409
d1, Uniform Delay [s]	26.84	11.07	11.09	26.09	9.59	9.60	26.83	19.85	16.82	26.62	19.78	18.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.46	0.78	0.84	5.94	0.57	0.60	0.48	1.84	0.17	0.28	1.76	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

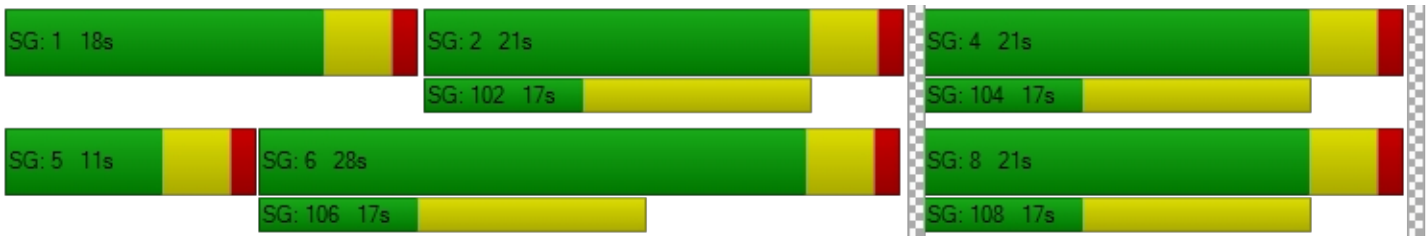
X, volume / capacity	0.43	0.25	0.25	0.75	0.21	0.21	0.20	0.70	0.15	0.12	0.69	0.45
d, Delay for Lane Group [s/veh]	29.30	11.85	11.93	32.03	10.16	10.20	27.31	21.69	16.98	26.91	21.54	19.13
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.71	1.40	1.36	1.95	1.12	1.09	0.50	3.74	0.56	0.30	3.66	1.85
50th-Percentile Queue Length [ft/ln]	17.80	35.10	34.09	48.65	27.98	27.30	12.50	93.38	13.89	7.59	91.50	46.36
95th-Percentile Queue Length [veh/ln]	1.28	2.53	2.45	3.50	2.01	1.97	0.90	6.72	1.00	0.55	6.59	3.34
95th-Percentile Queue Length [ft/ln]	32.04	63.18	61.35	87.57	50.36	49.15	22.50	168.08	24.99	13.66	164.70	83.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.30	11.88	11.93	32.03	10.18	10.20	27.31	21.69	16.98	26.91	21.54	19.13
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	14.00			16.40			21.54			20.95		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.35											
Intersection LOS	B											
Intersection V/C	0.401											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: C:\...\PM Ep_MD_Improvements.pdf

Scenario 3 Existing Plus Project MD - Improvements
1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	8	3	0	13	0	0	0	8	4	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**255**	**784**	**43**	**232**	**693**	**60**	**64**	**443**	**163**	**40**	**606**	**318**	**3701**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	16	0	0	25	0	0	0	0	0	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**956**	**49**	**138**	**1190**	**23**	**10**	**11**	**18**	**28**	**3**	**99**	**2539**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	8	25	0	0	0	8	0	5	5	16	67
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**42**	**565**	**75**	**251**	**643**	**159**	**166**	**119**	**16**	**139**	**195**	**185**	**2555**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	24	0	26	41	0	0	0	0	42	133
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**13**	**0**	**8**	**24**	**0**	**26**	**41**	**425**	**33**	**9**	**416**	**42**	**1037**

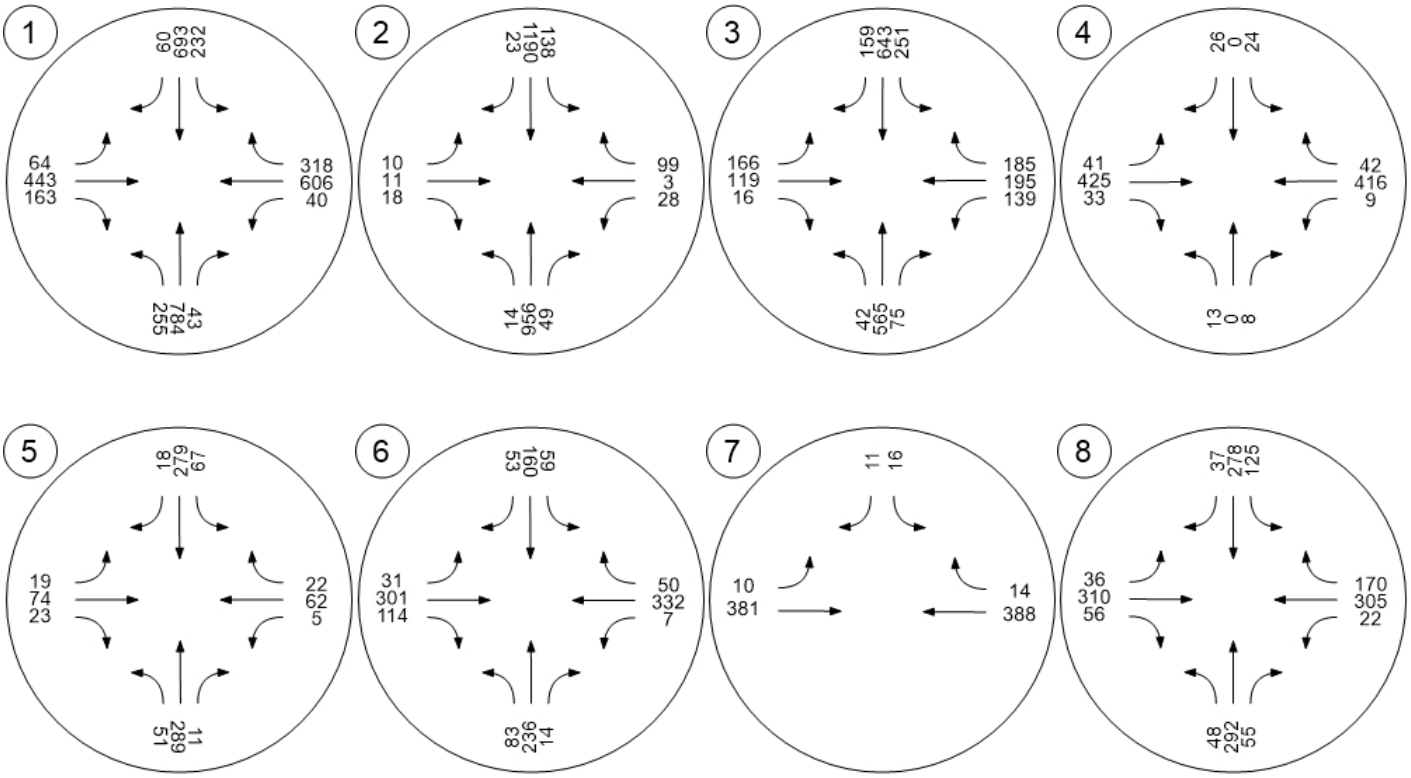
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	4	0	0	0	0	0	0	0	7
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**51**	**289**	**11**	**67**	**279**	**18**	**19**	**74**	**23**	**5**	**62**	**22**	**920**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	4	3	21	0	0	38	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**83**	**236**	**14**	**59**	**160**	**53**	**31**	**301**	**114**	**7**	**332**	**50**	**1440**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	3	18	34	0	59
		Other	0	0	0	0	0	0	0
		Future Total	**16**	**11**	**10**	**381**	**388**	**14**	**820**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	17	7	8	3	0	13	0	52
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**48**	**292**	**55**	**125**	**278**	**37**	**36**	**310**	**56**	**22**	**305**	**170**	**1734**

Traffic Volume - Future Total Volume



Opening Year (2022) Without Project

TTM 37884

Vistro File: C:\...\AM - Midigation.vistro
Report File: C:\...\AM OY.pdf

Scenario 4 Opening Year (2022) Without Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.540	22.3	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.532	18.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.672	25.5	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.042	18.1	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.401	11.7	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.330	23.5	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.370	25.2	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.543	20.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	699	75	298	727	46	63	639	207	37	265	145
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	188	20	80	195	12	17	172	56	10	71	39
Total Analysis Volume [veh/h]	148	752	81	320	782	49	68	687	223	40	285	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	23	23	5	16	16	4	14	14
g / C, Green / Cycle	0.10	0.33	0.33	0.12	0.35	0.35	0.08	0.24	0.24	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.04	0.15	0.05	0.10	0.16	0.03	0.04	0.20	0.15	0.02	0.13	0.13
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	339	1620	506	412	1729	540	134	832	371	99	400	354
d1, Uniform Delay [s]	27.56	17.28	15.45	27.72	16.27	14.13	28.87	23.41	21.91	29.67	22.65	22.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.96	0.68	3.17	0.86	0.33	2.93	2.16	1.56	2.63	1.32	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.46	0.16	0.78	0.45	0.09	0.51	0.83	0.60	0.40	0.58	0.59
d, Delay for Lane Group [s/veh]	28.45	18.24	16.13	30.88	17.13	14.46	31.80	25.57	23.47	32.30	23.97	24.35
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.03	2.67	0.83	2.36	2.66	0.46	1.04	4.60	2.81	0.63	2.93	2.70
50th-Percentile Queue Length [ft/ln]	25.63	66.77	20.63	58.94	66.46	11.54	25.97	115.06	70.15	15.64	73.18	67.56
95th-Percentile Queue Length [veh/ln]	1.85	4.81	1.49	4.24	4.79	0.83	1.87	8.12	5.05	1.13	5.27	4.86
95th-Percentile Queue Length [ft/ln]	46.14	120.19	37.14	106.10	119.63	20.76	46.75	203.01	126.27	28.15	131.72	121.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.45	18.24	16.13	30.88	17.13	14.46	31.80	25.57	23.47	32.30	24.04	24.35
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.60			20.84			25.52			24.83		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.31											
Intersection LOS	C											
Intersection V/C	0.540											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.532

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	1008	41	97	977	54	9	6	14	48	10	263
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	266	11	26	258	14	2	2	4	13	3	70
Total Analysis Volume [veh/h]	27	1066	43	103	1033	57	10	6	15	51	11	278
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	34	34	6	37	37	3	3	16	16
g / C, Green / Cycle	0.04	0.45	0.45	0.08	0.49	0.49	0.04	0.04	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.03	0.06	0.21	0.21	0.01	0.01	0.03	0.19
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1745	1530	1714	1539
c, Capacity [veh/h]	71	2189	683	143	1674	856	79	69	363	326
d1, Uniform Delay [s]	35.08	14.70	11.84	33.59	12.44	12.45	34.54	34.56	24.04	28.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.38	0.78	0.18	6.72	0.81	1.58	1.24	1.53	0.17	8.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

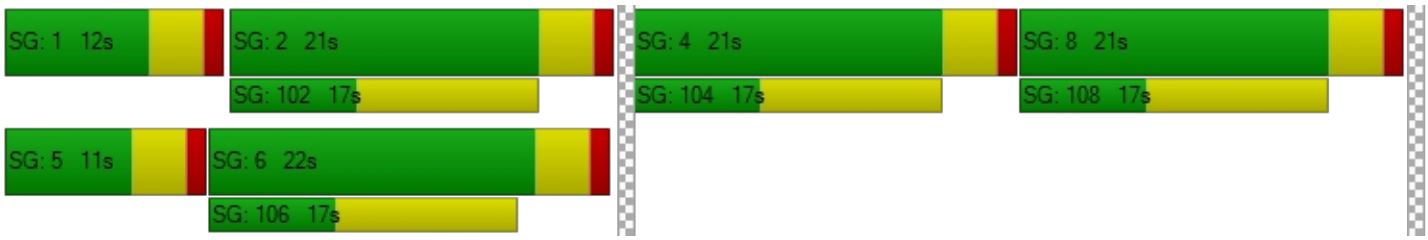
X, volume / capacity	0.38	0.49	0.06	0.72	0.43	0.43	0.20	0.22	0.14	0.89
d, Delay for Lane Group [s/veh]	38.46	15.48	12.02	40.31	13.25	14.03	35.78	36.10	24.22	36.77
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.50	3.56	0.37	1.97	3.42	3.68	0.31	0.29	0.71	5.39
50th-Percentile Queue Length [ft/ln]	12.61	89.02	9.13	49.28	85.44	92.05	7.65	7.27	17.66	134.78
95th-Percentile Queue Length [veh/ln]	0.91	6.41	0.66	3.55	6.15	6.63	0.55	0.52	1.27	9.20
95th-Percentile Queue Length [ft/ln]	22.70	160.24	16.43	88.71	153.79	165.69	13.76	13.09	31.79	229.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.46	15.48	12.02	40.31	13.49	14.03	35.78	35.78	36.10	24.22	36.77	36.77
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	15.90			15.83			35.93			34.88		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	18.49											
Intersection LOS	B											
Intersection V/C	0.532											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.672

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	497	14	84	505	334	260	245	43	69	312	187
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	128	4	22	130	86	67	63	11	18	80	48
Total Analysis Volume [veh/h]	61	512	14	87	520	344	268	252	44	71	321	193
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	25	0	13	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	6	22	22	13	22	22	5	15	15
g / C, Green / Cycle	0.07	0.30	0.30	0.08	0.31	0.31	0.18	0.31	0.31	0.08	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.01	0.03	0.11	0.22	0.16	0.07	0.03	0.04	0.18	0.13
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	123	1467	458	277	1526	476	312	1072	479	132	374	318
d1, Uniform Delay [s]	31.40	19.26	17.41	30.31	18.65	21.51	27.87	17.90	17.08	31.24	26.83	25.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.11	0.66	0.12	0.64	0.61	9.18	6.90	0.11	0.08	3.40	5.76	1.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

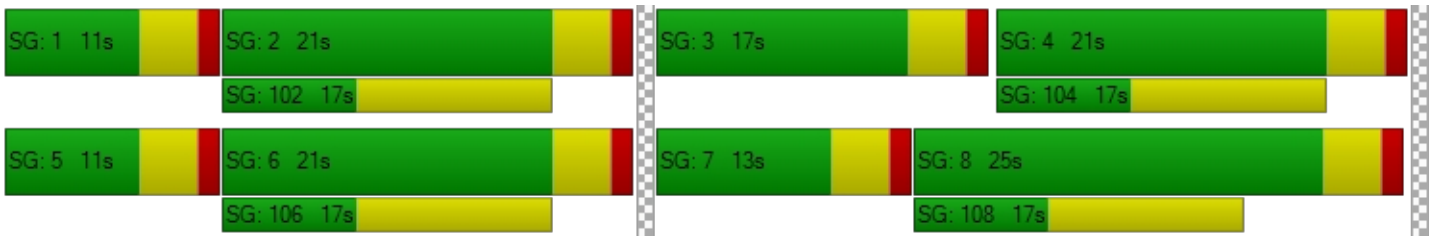
X, volume / capacity	0.50	0.35	0.03	0.31	0.34	0.72	0.86	0.24	0.09	0.54	0.86	0.61
d, Delay for Lane Group [s/veh]	34.51	19.92	17.53	30.95	19.26	30.68	34.77	18.01	17.16	34.64	32.59	27.09
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.01	1.96	0.15	0.64	1.90	5.37	4.46	1.32	0.45	1.19	5.23	2.79
50th-Percentile Queue Length [ft/ln]	25.28	49.08	3.87	16.08	47.58	134.32	111.51	33.02	11.14	29.84	130.86	69.65
95th-Percentile Queue Length [veh/ln]	1.82	3.53	0.28	1.16	3.43	9.17	7.92	2.38	0.80	2.15	8.99	5.01
95th-Percentile Queue Length [ft/ln]	45.50	88.34	6.96	28.95	85.65	229.35	198.11	59.44	20.04	53.72	224.67	125.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	19.92	17.53	30.95	19.26	30.68	34.77	18.01	17.16	34.64	32.59	27.09
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.38			24.46			25.91			31.03		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.52											
Intersection LOS	C											
Intersection V/C	0.672											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	10	2	284	5	7	521
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	2	312	6	8	573
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	82	2	2	151
Total Analysis Volume [veh/h]	12	2	330	6	8	606
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	18.06	10.56	0.00	0.00	7.94	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.48	3.48	0.00	0.00	0.49	0.49
d_A, Approach Delay [s/veh]	16.99		0.00		0.10	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.31					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	250	2	35	272	25	36	45	23	23	135	33
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	76	1	11	82	8	11	14	7	7	41	10
Total Analysis Volume [veh/h]	30	302	2	42	329	30	44	54	28	28	163	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	528	570	571	535	579	590	556	577
Degree of Utilization, x	0.06	0.27	0.27	0.08	0.31	0.30	0.23	0.40

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.18	1.07	1.07	0.25	1.32	1.28	0.86	1.92
95th-Percentile Queue Length [ft]	4.51	26.69	26.64	6.37	32.88	32.02	21.60	48.03
Approach Delay [s/veh]	11.16			11.41			11.35	13.36
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.74							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.330

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	172	11	44	168	98	61	175	56	21	444	51
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	50	3	13	49	29	18	51	16	6	130	15
Total Analysis Volume [veh/h]	84	201	13	51	196	114	71	204	65	25	519	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	27	27	6	25	25	8	17	17	4	13	13
g / C, Green / Cycle	0.12	0.39	0.39	0.09	0.36	0.36	0.11	0.24	0.24	0.06	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.01	0.02	0.06	0.07	0.04	0.06	0.04	0.01	0.15	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	389	1315	587	307	1231	549	187	819	366	98	642	287
d1, Uniform Delay [s]	28.11	14.17	13.45	29.41	15.31	15.59	29.10	21.63	21.24	31.68	27.34	24.14
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.25	0.07	0.25	0.28	0.86	1.27	0.16	0.23	1.35	2.48	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.15	0.02	0.17	0.16	0.21	0.38	0.25	0.18	0.25	0.81	0.21
d, Delay for Lane Group [s/veh]	28.39	14.42	13.52	29.66	15.58	16.45	30.37	21.79	21.47	33.03	29.81	24.50
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.59	0.92	0.12	0.37	0.95	1.20	1.07	1.21	0.77	0.41	3.90	0.78
50th-Percentile Queue Length [ft/ln]	14.84	22.95	2.96	9.28	23.69	29.93	26.80	30.37	19.31	10.17	97.60	19.52
95th-Percentile Queue Length [veh/ln]	1.07	1.65	0.21	0.67	1.71	2.16	1.93	2.19	1.39	0.73	7.03	1.41
95th-Percentile Queue Length [ft/ln]	26.71	41.30	5.33	16.70	42.63	53.88	48.24	54.66	34.76	18.31	175.69	35.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.39	14.42	13.52	29.66	15.58	16.45	30.37	21.79	21.47	33.03	29.81	24.50
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.32			17.84			23.52			29.42		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.50											
Intersection LOS	C											
Intersection V/C	0.330											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.370

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	13	33	224	442	155
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	4	9	64	127	45
Total Analysis Volume [veh/h]	106	15	38	257	508	178
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.37	0.03	0.04	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	25.23	19.78	9.09	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.84	1.84	0.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	46.12	46.12	3.24	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	24.56		1.17		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	3.01					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	238	21	142	316	43	31	230	61	25	523	182
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	63	6	37	83	11	8	61	16	7	138	48
Total Analysis Volume [veh/h]	62	251	22	149	333	45	33	242	64	26	551	192
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	7	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.36	0.36	0.11	0.39	0.39	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.08	0.09	0.11	0.11	0.04	0.13	0.04	0.02	0.31	0.13
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1726	870	1800	1530	1156	1800	1530
c, Capacity [veh/h]	133	640	622	192	702	673	123	600	510	347	600	510
d1, Uniform Delay [s]	26.57	13.52	13.54	25.99	12.53	12.54	30.07	15.46	13.96	19.88	19.28	15.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.55	0.77	0.80	6.63	0.96	1.02	1.16	0.44	0.11	0.09	9.12	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.21	0.22	0.78	0.27	0.28	0.27	0.40	0.13	0.08	0.92	0.38
d, Delay for Lane Group [s/veh]	29.11	14.29	14.34	32.62	13.49	13.56	31.23	15.90	14.07	19.97	28.40	15.76
Lane Group LOS	C	B	B	C	B	B	C	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.84	1.17	1.16	2.16	1.56	1.52	0.47	2.12	0.51	0.26	7.34	1.68
50th-Percentile Queue Length [ft/ln]	21.04	29.31	28.97	53.90	38.98	37.95	11.63	53.10	12.64	6.62	183.59	41.89
95th-Percentile Queue Length [veh/ln]	1.51	2.11	2.09	3.88	2.81	2.73	0.84	3.82	0.91	0.48	11.79	3.02
95th-Percentile Queue Length [ft/ln]	37.87	52.76	52.15	97.02	70.16	68.31	20.93	95.58	22.75	11.91	294.70	75.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.11	14.31	14.34	32.62	13.52	13.56	31.23	15.90	14.07	19.97	28.40	15.76
Movement LOS	C	B	B	C	B	B	C	B	B	B	C	B
d_A, Approach Delay [s/veh]	17.06			18.92			17.05			24.96		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.64											
Intersection LOS	C											
Intersection V/C	0.543											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Scenario 4 Opening Year (2022) Without Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**138**	**699**	**75**	**298**	**727**	**46**	**63**	**639**	**207**	**37**	**265**	**145**	**3339**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**26**	**1008**	**41**	**97**	**977**	**54**	**9**	**6**	**14**	**48**	**10**	**263**	**2553**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**497**	**14**	**84**	**505**	**334**	**260**	**245**	**43**	**69**	**312**	**187**	**2609**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	2	284	5	7	521	829
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**11**	**2**	**312**	**6**	**8**	**573**	**912**

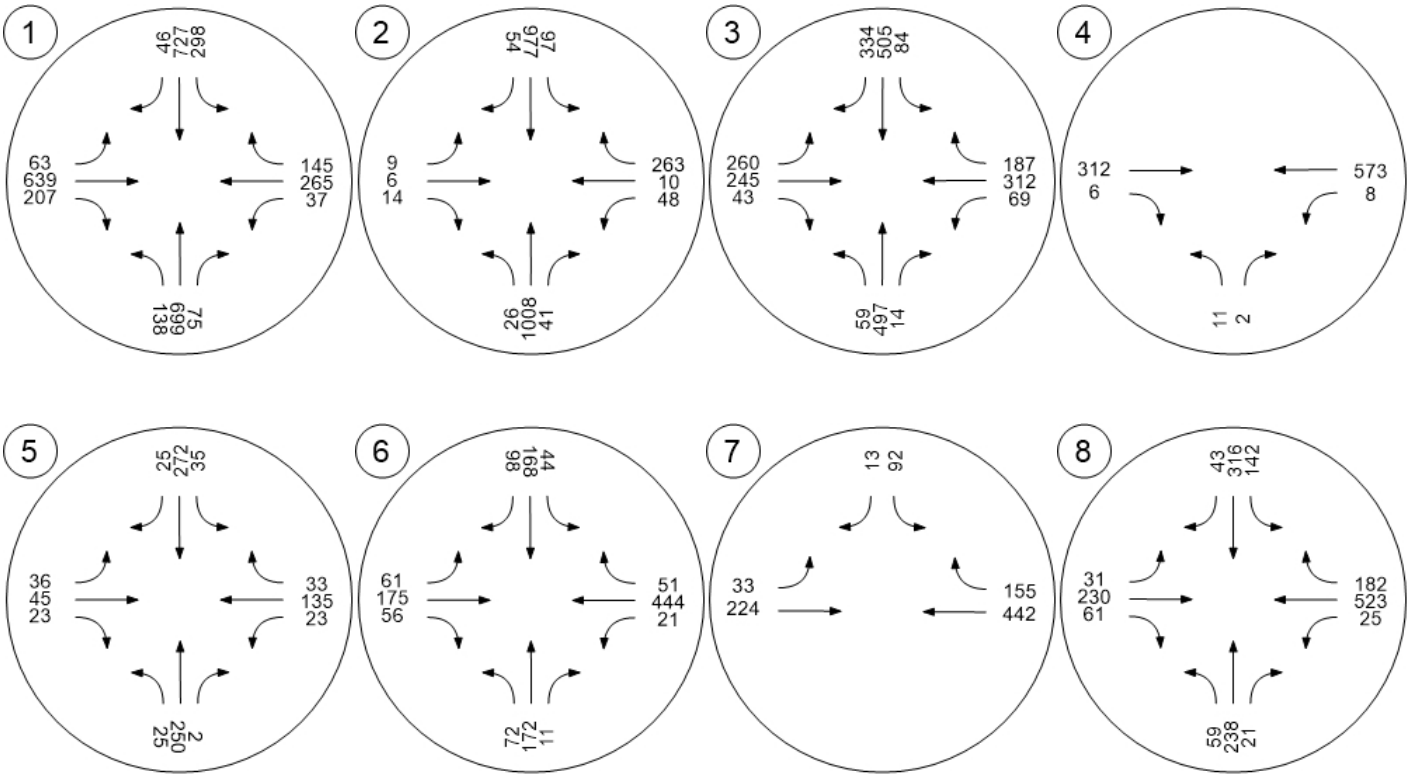
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**25**	**250**	**2**	**35**	**272**	**25**	**36**	**45**	**23**	**23**	**135**	**33**	**904**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**72**	**172**	**11**	**44**	**168**	**98**	**61**	**175**	**56**	**21**	**444**	**51**	**1373**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**92**	**13**	**33**	**224**	**442**	**155**	**959**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**238**	**21**	**142**	**316**	**43**	**31**	**230**	**61**	**25**	**523**	**182**	**1871**

Traffic Volume - Future Total Volume



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Scenario 4 Opening Year (2022) Without Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	NB Left	0.662	29.0	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.443	14.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.471	22.0	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.055	19.0	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.310	11.1	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.232	22.7	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.066	17.8	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.436	18.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	29.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	275	854	44	255	748	66	70	487	171	40	667	350
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	225	12	67	197	17	18	128	45	11	176	92
Total Analysis Volume [veh/h]	290	900	46	269	788	70	74	513	180	42	703	369
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	27	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	7	18	18	5	25	25	4	24	24
g / C, Green / Cycle	0.10	0.25	0.25	0.10	0.25	0.25	0.08	0.36	0.36	0.06	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.03	0.08	0.16	0.05	0.04	0.15	0.12	0.02	0.32	0.32
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	333	1249	390	333	1249	390	131	1236	552	96	612	542
d1, Uniform Delay [s]	31.06	23.83	20.06	30.85	23.18	20.39	31.21	16.83	16.22	31.98	22.27	22.29
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.26	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.98	3.62	0.62	4.63	2.43	1.01	3.76	0.22	0.34	3.09	13.63	15.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

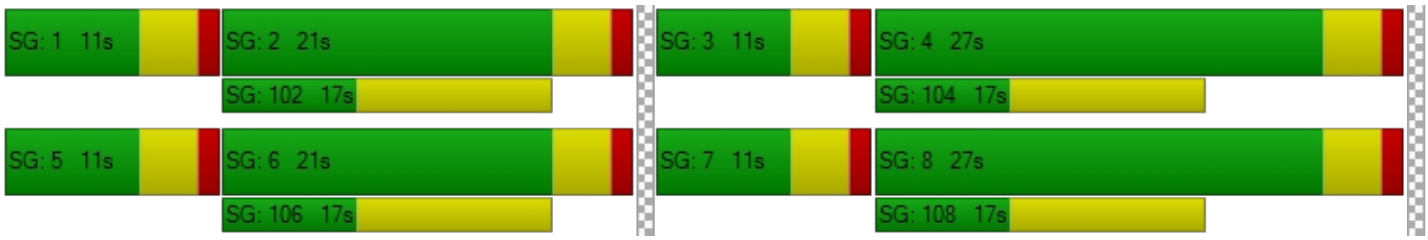
X, volume / capacity	0.87	0.72	0.12	0.81	0.63	0.18	0.56	0.42	0.33	0.44	0.93	0.93
d, Delay for Lane Group [s/veh]	38.04	27.44	20.67	35.48	25.61	21.39	34.96	17.06	16.56	35.07	35.90	37.59
Lane Group LOS	D	C	C	D	C	C	C	B	B	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.54	4.44	0.59	2.25	3.70	0.91	1.25	2.71	1.86	0.72	10.00	9.13
50th-Percentile Queue Length [ft/ln]	63.43	110.95	14.64	56.35	92.62	22.79	31.26	67.76	46.48	17.99	249.94	228.20
95th-Percentile Queue Length [veh/ln]	4.57	7.89	1.05	4.06	6.67	1.64	2.25	4.88	3.35	1.30	15.18	14.08
95th-Percentile Queue Length [ft/ln]	114.17	197.32	26.35	101.43	166.71	41.03	56.27	121.97	83.67	32.39	379.58	352.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.04	27.44	20.67	35.48	25.61	21.39	34.96	17.06	16.56	35.07	36.22	37.59
Movement LOS	D	C	C	D	C	C	C	B	B	D	D	D
d_A, Approach Delay [s/veh]	29.68			27.70			18.67			36.63		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	28.99											
Intersection LOS	C											
Intersection V/C	0.662											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	1034	54	152	1282	25	11	12	20	31	3	109
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	282	15	41	350	7	3	3	5	8	1	30
Total Analysis Volume [veh/h]	16	1129	59	166	1400	27	12	13	22	34	3	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	14	24	0	0	21	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	42	42	9	49	49	5	5	8	8
g / C, Green / Cycle	0.03	0.52	0.52	0.12	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.23	0.04	0.10	0.27	0.27	0.01	0.01	0.02	0.08
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	46	2558	798	202	2099	1092	101	88	177	159
d1, Uniform Delay [s]	38.27	11.91	9.53	34.52	8.29	8.29	36.09	36.09	32.86	34.99
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.35	0.55	0.18	8.10	0.69	1.33	1.26	1.46	0.52	7.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

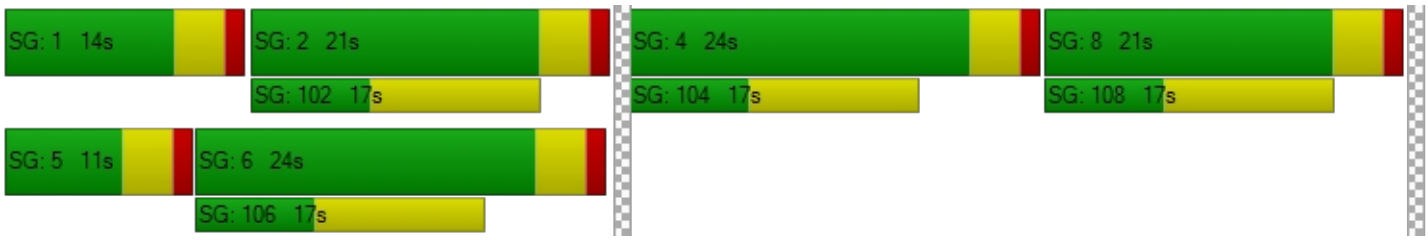
X, volume / capacity	0.34	0.44	0.07	0.82	0.45	0.45	0.25	0.25	0.19	0.77
d, Delay for Lane Group [s/veh]	42.62	12.46	9.71	42.62	8.98	9.62	37.34	37.56	33.38	42.59
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	3.35	0.44	3.41	3.45	3.79	0.50	0.44	0.60	2.54
50th-Percentile Queue Length [ft/ln]	8.52	83.86	11.11	85.17	86.35	94.65	12.49	11.11	15.05	63.42
95th-Percentile Queue Length [veh/ln]	0.61	6.04	0.80	6.13	6.22	6.81	0.90	0.80	1.08	4.57
95th-Percentile Queue Length [ft/ln]	15.33	150.95	20.00	153.30	155.42	170.37	22.48	20.00	27.08	114.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.62	12.46	9.71	42.62	9.19	9.62	37.34	37.34	37.56	33.38	42.59	42.59
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.73			12.68			37.44			40.58		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	14.54											
Intersection LOS	B											
Intersection V/C	0.443											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.471

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	622	74	249	707	175	183	122	18	147	209	186
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	160	19	64	182	45	47	31	5	38	54	48
Total Analysis Volume [veh/h]	47	640	76	256	727	180	188	126	19	151	215	191
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	8	11	11	7	10	10
g / C, Green / Cycle	0.06	0.36	0.36	0.11	0.41	0.41	0.12	0.17	0.17	0.11	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.05	0.08	0.15	0.12	0.11	0.04	0.01	0.09	0.12	0.12
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	110	1774	554	359	1988	620	212	595	265	192	291	247
d1, Uniform Delay [s]	29.40	15.29	13.99	28.15	13.54	13.07	28.14	23.15	22.58	28.23	26.06	26.22
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.63	0.57	0.52	2.65	0.52	1.18	11.55	0.18	0.11	7.00	3.68	5.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.36	0.14	0.71	0.37	0.29	0.89	0.21	0.07	0.79	0.74	0.77
d, Delay for Lane Group [s/veh]	32.03	15.86	14.51	30.80	14.06	14.25	39.69	23.32	22.69	35.24	29.75	31.33
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.72	1.99	0.70	1.81	2.00	1.57	3.23	0.74	0.22	2.45	3.13	2.89
50th-Percentile Queue Length [ft/ln]	17.91	49.81	17.46	45.36	50.10	39.30	80.74	18.61	5.58	61.18	78.35	72.15
95th-Percentile Queue Length [veh/ln]	1.29	3.59	1.26	3.27	3.61	2.83	5.81	1.34	0.40	4.40	5.64	5.19
95th-Percentile Queue Length [ft/ln]	32.23	89.65	31.42	81.65	90.19	70.73	145.33	33.50	10.04	110.12	141.03	129.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.03	15.86	14.51	30.80	14.06	14.25	39.69	23.32	22.69	35.24	29.75	31.33
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.72			17.78			32.53			31.78		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.00											
Intersection LOS	C											
Intersection V/C	0.471											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.055

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	13	8	425	33	9	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	9	468	36	10	458
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	2	122	9	3	120
Total Analysis Volume [veh/h]	15	9	489	38	10	478
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.02	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	18.98	11.97	0.00	0.00	8.46	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	5.64	5.64	0.00	0.00	0.72	0.72
d_A, Approach Delay [s/veh]	16.35		0.00		0.17	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.310

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	315	12	74	303	20	21	81	25	6	68	24
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	90	3	21	87	6	6	23	7	2	19	7
Total Analysis Volume [veh/h]	64	360	14	85	346	23	24	93	29	7	78	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	555	603	607	557	604	613	568	566
Degree of Utilization, x	0.12	0.31	0.31	0.15	0.31	0.30	0.26	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	1.32	1.30	0.54	1.29	1.26	1.02	0.73
95th-Percentile Queue Length [ft]	9.71	32.94	32.53	13.39	32.18	31.53	25.46	18.27
Approach Delay [s/veh]	11.11			11.01			11.52	10.93
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.10							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.232

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	260	15	65	176	54	31	308	125	8	323	55
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	68	4	17	46	14	8	81	33	2	85	14
Total Analysis Volume [veh/h]	96	274	16	68	185	57	33	325	132	8	340	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	32	32	7	31	31	5	13	13	2	10	10
g / C, Green / Cycle	0.12	0.45	0.45	0.11	0.44	0.44	0.07	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.05	0.04	0.02	0.09	0.09	0.00	0.10	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	408	1551	692	356	1497	668	120	652	291	39	490	219
d1, Uniform Delay [s]	27.85	11.45	10.64	28.61	11.78	11.57	30.98	25.44	25.20	33.72	28.65	26.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.25	0.06	0.26	0.17	0.25	1.22	0.59	1.10	2.60	1.78	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.18	0.02	0.19	0.12	0.09	0.27	0.50	0.45	0.21	0.69	0.27
d, Delay for Lane Group [s/veh]	28.15	11.69	10.70	28.87	11.95	11.82	32.20	26.03	26.30	36.32	30.42	27.46
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.67	1.07	0.12	0.49	0.73	0.47	0.52	2.20	1.82	0.15	2.56	0.82
50th-Percentile Queue Length [ft/ln]	16.87	26.80	3.06	12.14	18.35	11.74	13.09	55.12	45.51	3.77	63.91	20.42
95th-Percentile Queue Length [veh/ln]	1.21	1.93	0.22	0.87	1.32	0.85	0.94	3.97	3.28	0.27	4.60	1.47
95th-Percentile Queue Length [ft/ln]	30.37	48.25	5.51	21.85	33.04	21.14	23.56	99.21	81.91	6.78	115.04	36.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.15	11.69	10.70	28.87	11.95	11.82	32.20	26.03	26.30	36.32	30.42	27.46
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.75			15.63			26.52			30.12		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.71											
Intersection LOS	C											
Intersection V/C	0.232											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.066

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	8	8	399	389	15
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	2	2	113	110	4
Total Analysis Volume [veh/h]	20	9	9	451	440	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.81	11.74	8.26	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.26	0.26	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.56	6.56	0.61	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.93		0.16		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.436

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	321	61	138	306	22	32	332	58	24	321	187
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	87	17	37	83	6	9	90	16	7	87	51
Total Analysis Volume [veh/h]	52	348	66	150	332	24	35	360	63	26	348	203
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	25	25	7	27	27	16	16	16	16	16	16
g / C, Green / Cycle	0.07	0.41	0.41	0.11	0.46	0.46	0.27	0.27	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.12	0.09	0.10	0.10	0.03	0.20	0.04	0.03	0.19	0.13
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1758	1049	1800	1530	1038	1800	1530
c, Capacity [veh/h]	120	742	702	194	820	801	194	495	421	185	495	421
d1, Uniform Delay [s]	26.84	11.77	11.80	25.92	9.90	9.91	26.87	19.77	16.49	27.08	19.60	18.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.46	0.96	1.04	6.39	0.61	0.63	0.44	2.06	0.16	0.34	1.84	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

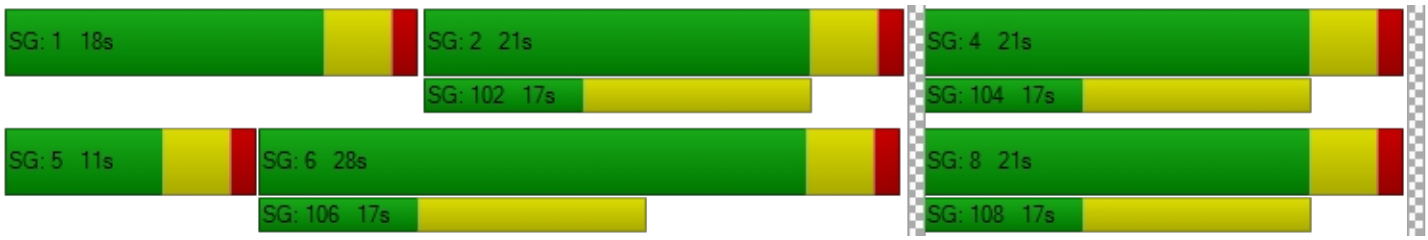
X, volume / capacity	0.43	0.28	0.29	0.77	0.22	0.22	0.18	0.73	0.15	0.14	0.70	0.48
d, Delay for Lane Group [s/veh]	29.30	12.74	12.84	32.31	10.52	10.54	27.31	21.83	16.65	27.42	21.44	19.09
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.71	1.63	1.58	2.16	1.19	1.17	0.45	4.03	0.57	0.33	3.84	2.05
50th-Percentile Queue Length [ft/ln]	17.80	40.77	39.50	53.92	29.73	29.30	11.22	100.76	14.15	8.35	96.12	51.23
95th-Percentile Queue Length [veh/ln]	1.28	2.94	2.84	3.88	2.14	2.11	0.81	7.26	1.02	0.60	6.92	3.69
95th-Percentile Queue Length [ft/ln]	32.04	73.38	71.10	97.05	53.52	52.73	20.20	181.38	25.48	15.03	173.01	92.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.30	12.78	12.84	32.31	10.53	10.54	27.31	21.83	16.65	27.42	21.44	19.09
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	14.63			16.99			21.53			20.88		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.60											
Intersection LOS	B											
Intersection V/C	0.436											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 4 Opening Year (2022) Without Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**275**	**854**	**44**	**255**	**748**	**66**	**70**	**487**	**171**	**40**	**667**	**350**	**4027**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**1034**	**54**	**152**	**1282**	**25**	**11**	**12**	**20**	**31**	**3**	**109**	**2748**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**46**	**622**	**74**	**249**	**707**	**175**	**183**	**122**	**18**	**147**	**209**	**186**	**2738**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	8	425	33	9	416	904
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**14**	**9**	**468**	**36**	**10**	**458**	**995**

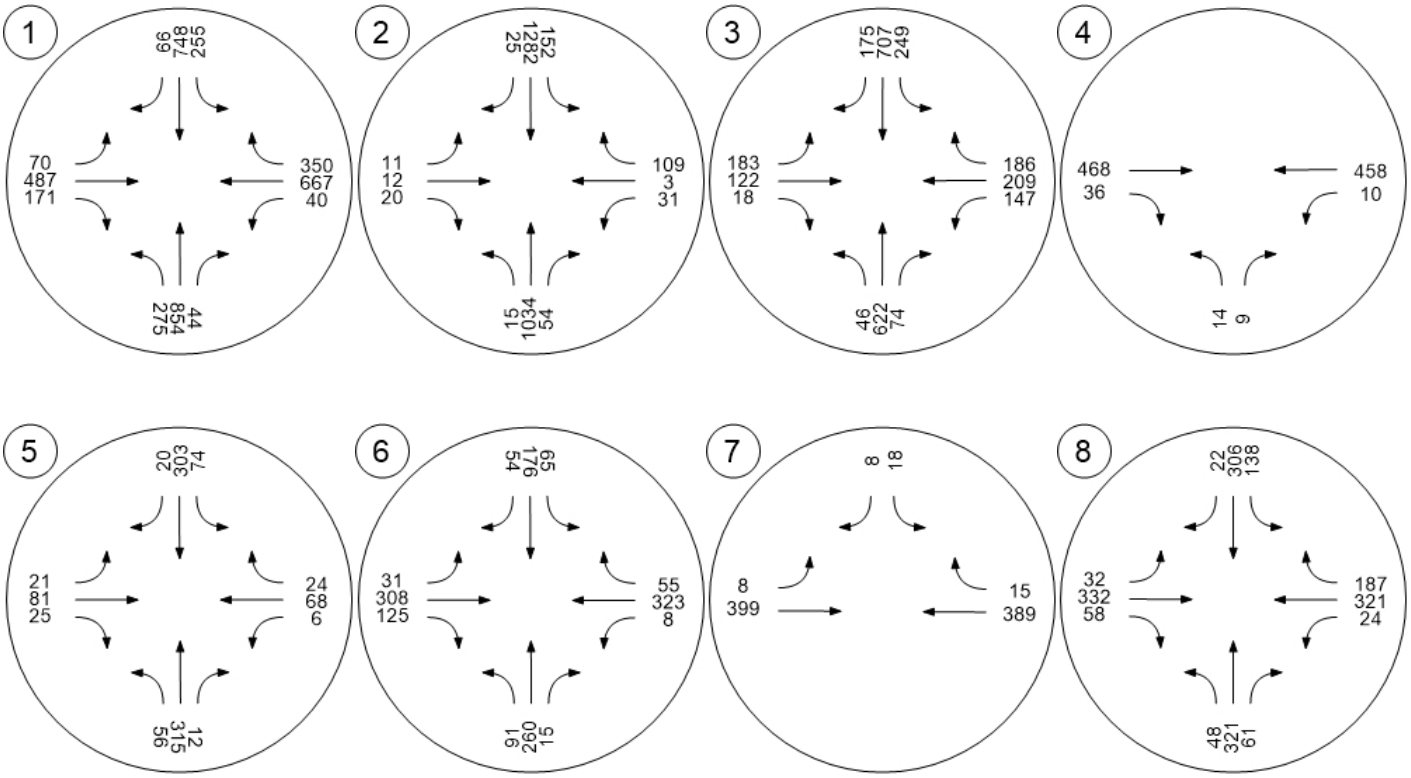
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**56**	**315**	**12**	**74**	**303**	**20**	**21**	**81**	**25**	**6**	**68**	**24**	**1005**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**91**	**260**	**15**	**65**	**176**	**54**	**31**	**308**	**125**	**8**	**323**	**55**	**1511**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**18**	**8**	**8**	**399**	**389**	**15**	**837**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**48**	**321**	**61**	**138**	**306**	**22**	**32**	**332**	**58**	**24**	**321**	**187**	**1850**

Traffic Volume - Future Total Volume



Opening Year (2022) With Project – Proposed Project

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Scenario 5 Opening Year (2022) With Project
1/17/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.542	22.4	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.536	18.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.675	25.8	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.133	23.8	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.401	11.8	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.338	23.5	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.392	27.3	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.545	20.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.542

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	9	3	0	3	0	0	0	2	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	708	78	298	730	46	63	639	209	38	265	145
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	190	21	80	196	12	17	172	56	10	71	39
Total Analysis Volume [veh/h]	155	761	84	320	785	49	68	687	225	41	285	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	23	23	5	16	16	4	15	15
g / C, Green / Cycle	0.10	0.33	0.33	0.12	0.35	0.35	0.08	0.24	0.24	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.05	0.10	0.16	0.03	0.04	0.20	0.15	0.02	0.13	0.13
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	341	1616	504	412	1721	537	134	832	371	101	401	355
d1, Uniform Delay [s]	27.57	17.36	15.52	27.72	16.37	14.20	28.87	23.42	21.95	29.63	22.60	22.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.94	0.99	0.71	3.17	0.87	0.34	2.93	2.16	1.60	2.63	1.30	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.47	0.17	0.78	0.46	0.09	0.51	0.83	0.61	0.41	0.57	0.59
d, Delay for Lane Group [s/veh]	28.51	18.35	16.23	30.88	17.24	14.54	31.80	25.58	23.55	32.25	23.91	24.28
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	2.72	0.86	2.36	2.68	0.46	1.04	4.60	2.84	0.64	2.92	2.70
50th-Percentile Queue Length [ft/ln]	26.90	67.88	21.49	58.94	67.04	11.58	25.97	115.09	70.95	16.00	73.05	67.42
95th-Percentile Queue Length [veh/ln]	1.94	4.89	1.55	4.24	4.83	0.83	1.87	8.12	5.11	1.15	5.26	4.85
95th-Percentile Queue Length [ft/ln]	48.41	122.19	38.69	106.10	120.68	20.85	46.75	203.06	127.71	28.80	131.49	121.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.51	18.35	16.23	30.88	17.24	14.54	31.80	25.58	23.55	32.25	23.98	24.28
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.75			20.91			25.54			24.78		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.36											
Intersection LOS	C											
Intersection V/C	0.542											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	1026	41	97	983	54	9	6	14	48	10	263
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	271	11	26	260	14	2	2	4	13	3	70
Total Analysis Volume [veh/h]	27	1085	43	103	1039	57	10	6	15	51	11	278
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	34	34	6	37	37	3	3	16	16
g / C, Green / Cycle	0.04	0.45	0.45	0.08	0.49	0.49	0.04	0.04	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.03	0.06	0.21	0.21	0.01	0.01	0.03	0.19
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1745	1530	1714	1539
c, Capacity [veh/h]	71	2189	683	143	1674	856	79	69	363	326
d1, Uniform Delay [s]	35.08	14.78	11.84	33.59	12.46	12.46	34.54	34.56	24.04	28.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.38	0.80	0.18	6.72	0.82	1.60	1.24	1.53	0.17	8.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

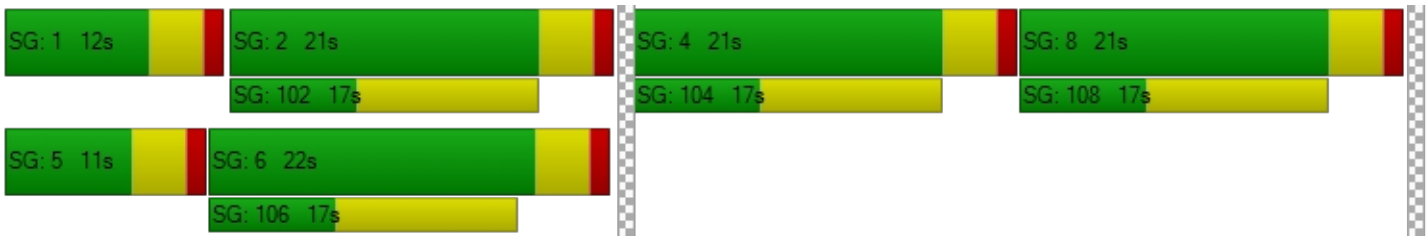
X, volume / capacity	0.38	0.50	0.06	0.72	0.43	0.43	0.20	0.22	0.14	0.89
d, Delay for Lane Group [s/veh]	38.46	15.58	12.02	40.31	13.28	14.06	35.78	36.10	24.22	36.77
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.50	3.64	0.37	1.97	3.44	3.71	0.31	0.29	0.71	5.39
50th-Percentile Queue Length [ft/ln]	12.61	91.11	9.13	49.28	86.04	92.72	7.65	7.27	17.66	134.78
95th-Percentile Queue Length [veh/ln]	0.91	6.56	0.66	3.55	6.20	6.68	0.55	0.52	1.27	9.20
95th-Percentile Queue Length [ft/ln]	22.70	163.99	16.43	88.71	154.88	166.89	13.76	13.09	31.79	229.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.46	15.58	12.02	40.31	13.52	14.06	35.78	35.78	36.10	24.22	36.77	36.77
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	15.98			15.84			35.93			34.88		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	18.51											
Intersection LOS	B											
Intersection V/C	0.536											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	6	0	0	0	2	0	6	6	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	497	16	90	505	334	260	247	43	75	318	205
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	128	4	23	130	86	67	64	11	19	82	53
Total Analysis Volume [veh/h]	61	512	16	93	520	344	268	254	44	77	327	211
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	6	22	22	13	22	22	6	15	15
g / C, Green / Cycle	0.07	0.30	0.30	0.08	0.31	0.31	0.18	0.31	0.31	0.08	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.01	0.03	0.11	0.22	0.16	0.07	0.03	0.04	0.18	0.14
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	123	1442	450	284	1510	471	312	1074	479	136	380	323
d1, Uniform Delay [s]	31.40	19.54	17.69	30.23	18.82	21.70	27.87	17.89	17.06	31.17	26.73	25.37
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.11	0.69	0.15	0.66	0.62	9.57	6.90	0.11	0.08	3.64	5.82	2.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

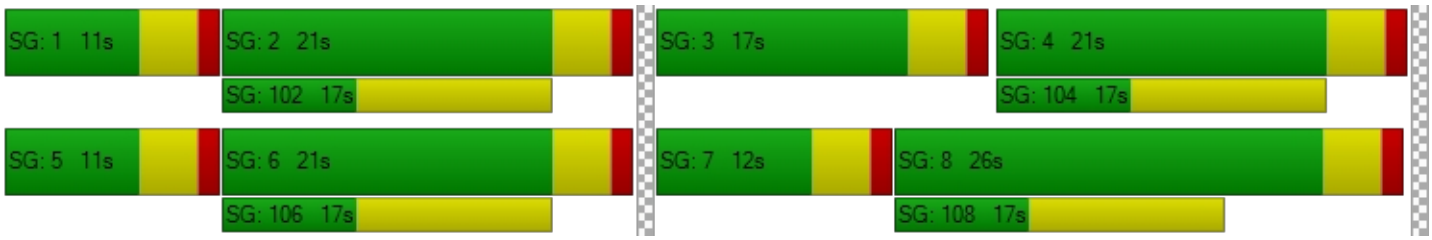
X, volume / capacity	0.50	0.35	0.04	0.33	0.34	0.73	0.86	0.24	0.09	0.57	0.86	0.65
d, Delay for Lane Group [s/veh]	34.51	20.23	17.83	30.90	19.44	31.27	34.77	18.01	17.14	34.81	32.54	27.61
Lane Group LOS	C	C	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.01	1.98	0.18	0.69	1.92	5.44	4.46	1.33	0.45	1.30	5.33	3.09
50th-Percentile Queue Length [ft/ln]	25.28	49.62	4.48	17.17	47.91	135.98	111.51	33.28	11.13	32.44	133.26	77.26
95th-Percentile Queue Length [veh/ln]	1.82	3.57	0.32	1.24	3.45	9.26	7.92	2.40	0.80	2.34	9.12	5.56
95th-Percentile Queue Length [ft/ln]	45.50	89.31	8.06	30.91	86.25	231.60	198.11	59.90	20.03	58.38	227.92	139.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	20.23	17.83	30.90	19.44	31.27	34.77	18.01	17.14	34.81	32.54	27.61
Movement LOS	C	C	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.64			24.80			25.88			31.14		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.77											
Intersection LOS	C											
Intersection V/C	0.675											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	30	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	2	28	0	30	10	312	6	8	573	10
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	7	0	8	3	82	2	2	151	3
Total Analysis Volume [veh/h]	12	0	2	30	0	32	11	330	6	8	606	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.13	0.00	0.06	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	23.37	20.73	11.03	23.76	22.53	15.04	8.74	0.00	0.00	7.94	0.00	0.00
Movement LOS	C	C	B	C	C	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.19	0.72	0.72	0.72	0.03	0.02	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	4.81	4.81	4.81	18.04	18.04	18.04	0.78	0.39	0.00	0.49	0.49	0.49
d_A, Approach Delay [s/veh]	21.61			19.26			0.28			0.10		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.58											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	253	2	35	273	25	36	45	23	23	135	33
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	76	1	11	83	8	11	14	7	7	41	10
Total Analysis Volume [veh/h]	30	306	2	42	330	30	44	54	28	28	163	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	527	570	571	534	578	589	555	575
Degree of Utilization, x	0.06	0.27	0.27	0.08	0.31	0.31	0.23	0.40

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.18	1.09	1.09	0.26	1.32	1.29	0.87	1.93
95th-Percentile Queue Length [ft]	4.51	27.18	27.13	6.38	33.07	32.20	21.65	48.15
Approach Delay [s/veh]	11.20			11.44			11.37	13.39
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.77							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.338

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	3	25	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	172	11	44	168	99	64	200	56	21	453	51
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	50	3	13	49	29	19	58	16	6	132	15
Total Analysis Volume [veh/h]	84	201	13	51	196	116	75	234	65	25	529	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	27	27	6	25	25	8	17	17	4	13	13
g / C, Green / Cycle	0.12	0.38	0.38	0.09	0.36	0.36	0.11	0.24	0.24	0.06	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.01	0.02	0.06	0.08	0.04	0.07	0.04	0.01	0.15	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	389	1297	579	307	1212	541	191	837	374	98	651	291
d1, Uniform Delay [s]	28.11	14.42	13.69	29.41	15.56	15.87	28.99	21.53	20.95	31.68	27.25	23.98
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.25	0.07	0.25	0.29	0.90	1.30	0.18	0.22	1.35	2.51	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.15	0.02	0.17	0.16	0.21	0.39	0.28	0.17	0.25	0.81	0.21
d, Delay for Lane Group [s/veh]	28.39	14.67	13.76	29.66	15.85	16.78	30.30	21.71	21.17	33.03	29.76	24.33
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.59	0.93	0.12	0.37	0.96	1.24	1.13	1.39	0.76	0.41	3.98	0.78
50th-Percentile Queue Length [ft/ln]	14.84	23.24	3.00	9.28	23.98	30.90	28.26	34.84	19.12	10.17	99.43	19.42
95th-Percentile Queue Length [veh/ln]	1.07	1.67	0.22	0.67	1.73	2.22	2.04	2.51	1.38	0.73	7.16	1.40
95th-Percentile Queue Length [ft/ln]	26.71	41.84	5.40	16.70	43.16	55.62	50.88	62.70	34.41	18.31	178.97	34.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.39	14.67	13.76	29.66	15.85	16.78	30.30	21.71	21.17	33.03	29.76	24.33
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.50			18.08			23.34			29.36		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.55											
Intersection LOS	C											
Intersection V/C	0.338											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.392

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	22	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	14	36	246	450	155
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	4	10	71	129	45
Total Analysis Volume [veh/h]	106	16	41	283	517	178
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.39	0.03	0.05	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	27.26	21.12	9.14	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.02	2.02	0.14	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	50.39	50.39	3.53	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	26.45		1.16		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.16					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	4	10	9	3	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	238	21	142	316	47	41	239	64	25	526	182
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	63	6	37	83	12	11	63	17	7	138	48
Total Analysis Volume [veh/h]	63	251	22	149	333	49	43	252	67	26	554	192
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	7	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.36	0.36	0.11	0.39	0.39	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.08	0.09	0.11	0.11	0.05	0.14	0.04	0.02	0.31	0.13
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1721	868	1800	1530	1146	1800	1530
c, Capacity [veh/h]	134	640	622	192	701	670	121	600	510	339	600	510
d1, Uniform Delay [s]	26.54	13.52	13.54	25.99	12.57	12.59	30.08	15.56	13.99	20.14	19.33	15.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.56	0.77	0.80	6.63	0.98	1.04	1.75	0.47	0.12	0.10	9.66	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.21	0.22	0.78	0.28	0.28	0.35	0.42	0.13	0.08	0.92	0.38
d, Delay for Lane Group [s/veh]	29.10	14.29	14.34	32.62	13.56	13.63	31.83	16.03	14.11	20.23	28.99	15.76
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	1.17	1.16	2.16	1.58	1.54	0.61	2.23	0.53	0.27	7.48	1.68
50th-Percentile Queue Length [ft/ln]	21.36	29.31	28.97	53.90	39.59	38.46	15.34	55.69	13.26	6.68	187.01	41.89
95th-Percentile Queue Length [veh/ln]	1.54	2.11	2.09	3.88	2.85	2.77	1.10	4.01	0.95	0.48	11.97	3.02
95th-Percentile Queue Length [ft/ln]	38.45	52.76	52.15	97.02	71.26	69.22	27.61	100.25	23.87	12.03	299.15	75.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.10	14.31	14.34	32.62	13.59	13.63	31.83	16.03	14.11	20.23	28.99	15.76
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	17.09			18.93			17.55			25.41		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.87											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Scenario 5 Opening Year (2022) With Project
1/17/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	9	3	0	3	0	0	0	2	1	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**144**	**708**	**78**	**298**	**730**	**46**	**63**	**639**	**209**	**38**	**265**	**145**	**3363**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	18	0	0	6	0	0	0	0	0	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**26**	**1026**	**41**	**97**	**983**	**54**	**9**	**6**	**14**	**48**	**10**	**263**	**2577**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	2	6	0	0	0	2	0	6	6	18	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**497**	**16**	**90**	**505**	**334**	**260**	**247**	**43**	**75**	**318**	**205**	**2649**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	28	0	30	10	0	0	0	0	10	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**11**	**0**	**2**	**28**	**0**	**30**	**10**	**312**	**6**	**8**	**573**	**10**	**990**

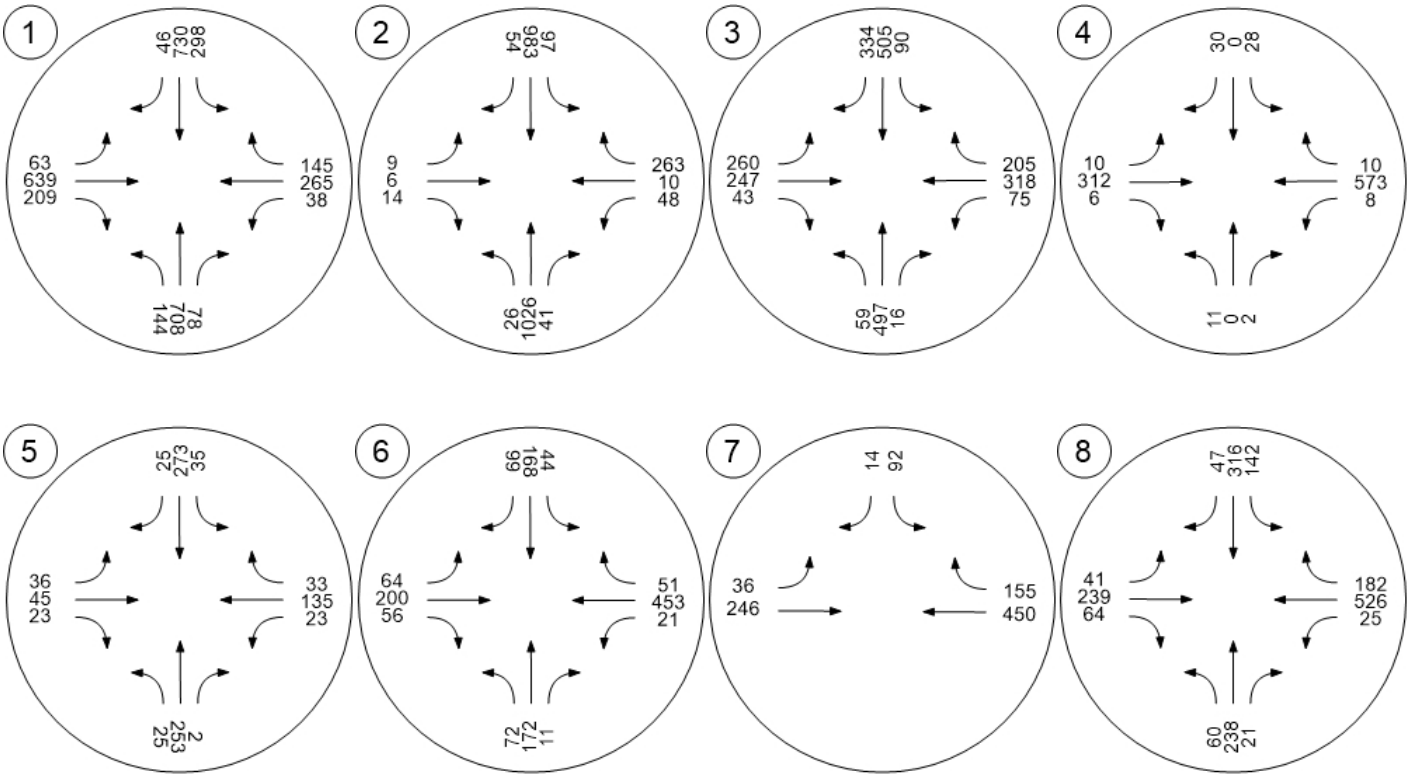
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	1	0	0	0	0	0	0	0	4
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**25**	**253**	**2**	**35**	**273**	**25**	**36**	**45**	**23**	**23**	**135**	**33**	**908**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	3	25	0	0	9	0	38
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**72**	**172**	**11**	**44**	**168**	**99**	**64**	**200**	**56**	**21**	**453**	**51**	**1411**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	3	22	8	0	34
		Other	0	0	0	0	0	0	0
		Future Total	**92**	**14**	**36**	**246**	**450**	**155**	**993**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	4	10	9	3	0	3	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**60**	**238**	**21**	**142**	**316**	**47**	**41**	**239**	**64**	**25**	**526**	**182**	**1901**

Traffic Volume - Future Total Volume



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Scenario 5 Opening Year (2022) With Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	NB Left	0.663	29.1	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.446	14.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.486	22.3	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.102	26.4	D
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.313	11.1	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.243	23.0	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.071	18.8	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.440	18.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	2	0	10	0	0	0	6	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	279	860	46	255	758	66	70	487	177	43	667	350
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	227	12	67	200	17	18	128	47	11	176	92
Total Analysis Volume [veh/h]	294	906	48	269	799	70	74	513	187	45	703	369
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	27	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	7	18	18	5	25	25	4	24	24
g / C, Green / Cycle	0.10	0.25	0.25	0.10	0.25	0.25	0.08	0.36	0.36	0.06	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.03	0.08	0.16	0.05	0.04	0.15	0.12	0.03	0.32	0.32
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	333	1249	390	333	1249	390	131	1227	548	101	612	542
d1, Uniform Delay [s]	31.10	23.86	20.08	30.85	23.24	20.39	31.21	16.97	16.43	31.87	22.27	22.29
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.26	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.63	3.70	0.65	4.63	2.52	1.01	3.76	0.23	0.37	3.10	13.62	15.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

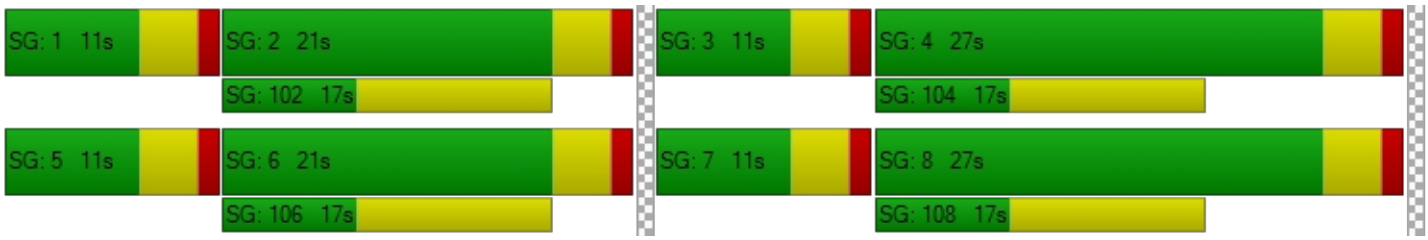
X, volume / capacity	0.88	0.73	0.12	0.81	0.64	0.18	0.56	0.42	0.34	0.45	0.93	0.93
d, Delay for Lane Group [s/veh]	38.73	27.56	20.73	35.48	25.76	21.39	34.96	17.19	16.80	34.97	35.89	37.59
Lane Group LOS	D	C	C	D	C	C	C	B	B	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.60	4.48	0.61	2.25	3.77	0.91	1.25	2.73	1.95	0.77	10.00	9.13
50th-Percentile Queue Length [ft/ln]	65.02	112.01	15.31	56.35	94.31	22.79	31.26	68.14	48.84	19.20	249.88	228.22
95th-Percentile Queue Length [veh/ln]	4.68	7.95	1.10	4.06	6.79	1.64	2.25	4.91	3.52	1.38	15.18	14.08
95th-Percentile Queue Length [ft/ln]	117.03	198.80	27.55	101.43	169.76	41.03	56.27	122.65	87.90	34.56	379.50	352.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.73	27.56	20.73	35.48	25.76	21.39	34.96	17.19	16.80	34.97	36.22	37.59
Movement LOS	D	C	C	D	C	C	C	B	B	C	D	D
d_A, Approach Delay [s/veh]	29.93			27.79			18.80			36.62		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	29.09											
Intersection LOS	C											
Intersection V/C	0.663											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.446

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	19	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	1046	54	152	1301	25	11	12	20	31	3	109
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	285	15	41	355	7	3	3	5	8	1	30
Total Analysis Volume [veh/h]	16	1142	59	166	1420	27	12	13	22	34	3	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	14	24	0	0	21	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	42	42	9	49	49	5	5	8	8
g / C, Green / Cycle	0.03	0.52	0.52	0.12	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.23	0.04	0.10	0.28	0.28	0.01	0.01	0.02	0.08
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	46	2558	798	202	2099	1092	101	88	177	159
d1, Uniform Delay [s]	38.27	11.95	9.53	34.52	8.34	8.34	36.09	36.09	32.86	34.99
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.35	0.57	0.18	8.10	0.71	1.36	1.26	1.46	0.52	7.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

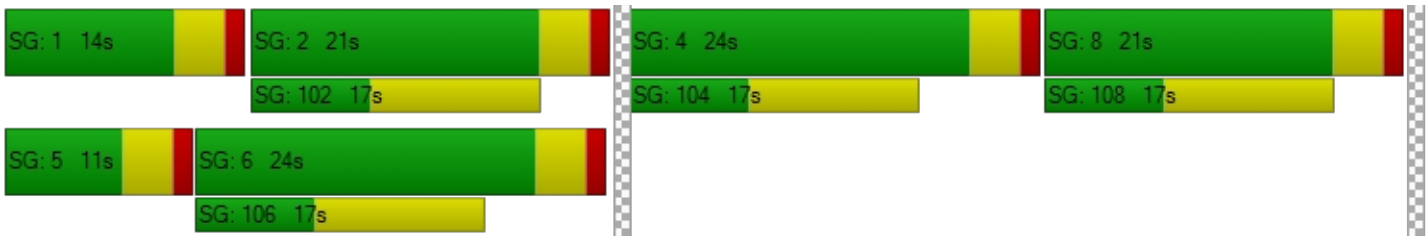
X, volume / capacity	0.34	0.45	0.07	0.82	0.45	0.45	0.25	0.25	0.19	0.77
d, Delay for Lane Group [s/veh]	42.62	12.52	9.71	42.62	9.04	9.70	37.34	37.56	33.38	42.59
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	3.41	0.44	3.41	3.52	3.86	0.50	0.44	0.60	2.54
50th-Percentile Queue Length [ft/ln]	8.52	85.14	11.11	85.17	88.05	96.55	12.49	11.11	15.05	63.42
95th-Percentile Queue Length [veh/ln]	0.61	6.13	0.80	6.13	6.34	6.95	0.90	0.80	1.08	4.57
95th-Percentile Queue Length [ft/ln]	15.33	153.25	20.00	153.30	158.48	173.80	22.48	20.00	27.08	114.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.62	12.52	9.71	42.62	9.26	9.70	37.34	37.34	37.56	33.38	42.59	42.59
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.78			12.70			37.44			40.58		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	14.55											
Intersection LOS	B											
Intersection V/C	0.446											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	19	0	0	0	6	0	4	4	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	622	80	268	707	175	183	128	18	151	213	198
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	160	21	69	182	45	47	33	5	39	55	51
Total Analysis Volume [veh/h]	47	640	82	276	727	180	188	132	19	155	219	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	23	23	7	26	26	8	12	12	7	11	11
g / C, Green / Cycle	0.06	0.35	0.35	0.11	0.40	0.40	0.12	0.18	0.18	0.11	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.05	0.08	0.15	0.12	0.11	0.04	0.01	0.09	0.12	0.13
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	110	1730	540	362	1948	608	212	614	274	196	305	260
d1, Uniform Delay [s]	29.40	15.73	14.45	28.28	13.92	13.43	28.14	22.87	22.27	28.14	25.62	25.97
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.63	0.61	0.60	3.36	0.55	1.24	11.55	0.17	0.11	6.96	3.15	5.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.37	0.15	0.76	0.37	0.30	0.89	0.22	0.07	0.79	0.72	0.79
d, Delay for Lane Group [s/veh]	32.03	16.34	15.04	31.64	14.47	14.67	39.69	23.05	22.38	35.10	28.77	31.18
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.72	2.04	0.77	1.99	2.05	1.61	3.23	0.77	0.22	2.51	3.13	3.08
50th-Percentile Queue Length [ft/ln]	17.91	50.92	19.35	49.80	51.24	40.20	80.74	19.34	5.52	62.65	78.17	76.89
95th-Percentile Queue Length [veh/ln]	1.29	3.67	1.39	3.59	3.69	2.89	5.81	1.39	0.40	4.51	5.63	5.54
95th-Percentile Queue Length [ft/ln]	32.23	91.65	34.84	89.64	92.23	72.36	145.33	34.82	9.93	112.76	140.71	138.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.03	16.34	15.04	31.64	14.47	14.67	39.69	23.05	22.38	35.10	28.77	31.18
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.16			18.50			32.24			31.32		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.35											
Intersection LOS	C											
Intersection V/C	0.486											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.102

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	20	31	0	0	0	0	32
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	9	18	0	20	31	468	36	10	458	32
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	2	5	0	5	8	122	9	3	120	8
Total Analysis Volume [veh/h]	15	0	9	19	0	21	32	489	38	10	478	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.02	0.10	0.00	0.04	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	26.13	23.84	12.73	26.42	24.80	13.22	8.49	0.00	0.00	8.46	0.00	0.00
Movement LOS	D	C	B	D	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.32	0.48	0.48	0.48	0.09	0.04	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.96	7.96	7.96	11.90	11.90	11.90	2.25	1.12	0.00	0.72	0.72	0.72
d_A, Approach Delay [s/veh]	21.11			19.49			0.49			0.16		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.44											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	317	12	74	306	20	21	81	25	6	68	24
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	91	3	21	87	6	6	23	7	2	19	7
Total Analysis Volume [veh/h]	64	362	14	85	350	23	24	93	29	7	78	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	555	602	607	557	603	613	567	565
Degree of Utilization, x	0.12	0.31	0.31	0.15	0.31	0.30	0.26	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	1.33	1.31	0.54	1.31	1.28	1.02	0.73
95th-Percentile Queue Length [ft]	9.72	33.24	32.83	13.40	32.71	32.05	25.52	18.31
Approach Delay [s/veh]	11.14			11.05			11.54	10.94
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.14							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.243

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	2	16	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	260	15	65	176	57	33	324	125	8	352	55
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	68	4	17	46	15	9	85	33	2	93	14
Total Analysis Volume [veh/h]	96	274	16	68	185	60	35	341	132	8	371	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	32	32	7	30	30	5	14	14	2	10	10
g / C, Green / Cycle	0.12	0.45	0.45	0.11	0.43	0.43	0.07	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.05	0.04	0.02	0.10	0.09	0.00	0.11	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	408	1534	685	356	1481	661	125	669	299	39	497	222
d1, Uniform Delay [s]	27.85	11.65	10.83	28.61	11.98	11.80	30.83	25.27	24.90	33.72	28.80	26.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.25	0.06	0.26	0.17	0.27	1.21	0.60	1.03	2.60	2.27	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.18	0.02	0.19	0.12	0.09	0.28	0.51	0.44	0.21	0.75	0.26
d, Delay for Lane Group [s/veh]	28.15	11.90	10.89	28.87	12.15	12.07	32.03	25.87	25.93	36.32	31.07	27.32
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.67	1.09	0.12	0.49	0.74	0.50	0.55	2.31	1.80	0.15	2.83	0.81
50th-Percentile Queue Length [ft/ln]	16.87	27.13	3.10	12.14	18.57	12.54	13.81	57.73	45.11	3.77	70.87	20.36
95th-Percentile Queue Length [veh/ln]	1.21	1.95	0.22	0.87	1.34	0.90	0.99	4.16	3.25	0.27	5.10	1.47
95th-Percentile Queue Length [ft/ln]	30.37	48.84	5.58	21.85	33.42	22.57	24.86	103.91	81.19	6.78	127.57	36.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.15	11.90	10.89	28.87	12.15	12.07	32.03	25.87	25.93	36.32	31.07	27.32
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.90			15.77			26.31			30.67		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.02											
Intersection LOS	C											
Intersection V/C	0.243											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.071

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	14	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	11	10	413	415	15
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	117	117	4
Total Analysis Volume [veh/h]	20	12	11	467	469	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.81	12.11	8.34	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.30	0.30	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.48	7.48	0.77	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.30		0.19		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.62					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.440

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	13	6	6	2	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	321	61	138	306	35	38	338	60	24	331	187
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	87	17	37	83	9	10	92	16	7	90	51
Total Analysis Volume [veh/h]	55	348	66	150	332	38	41	367	65	26	359	203
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	17	17	17	17	17	17
g / C, Green / Cycle	0.07	0.40	0.40	0.11	0.45	0.45	0.28	0.28	0.28	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.12	0.09	0.10	0.11	0.04	0.20	0.04	0.03	0.20	0.13
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1736	1039	1800	1530	1031	1800	1530
c, Capacity [veh/h]	124	727	687	194	801	772	194	510	434	188	510	434
d1, Uniform Delay [s]	26.75	12.11	12.14	25.92	10.35	10.36	27.01	19.40	16.13	26.91	19.30	17.81
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.48	1.01	1.09	6.39	0.69	0.72	0.54	1.93	0.16	0.33	1.79	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

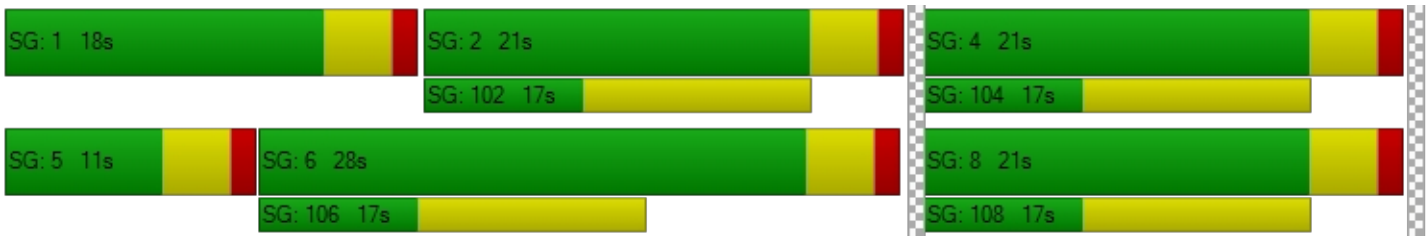
X, volume / capacity	0.44	0.29	0.29	0.77	0.23	0.24	0.21	0.72	0.15	0.14	0.70	0.47
d, Delay for Lane Group [s/veh]	29.23	13.12	13.23	32.31	11.04	11.08	27.55	21.33	16.29	27.24	21.08	18.60
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.75	1.67	1.62	2.16	1.30	1.27	0.53	4.04	0.57	0.33	3.92	2.01
50th-Percentile Queue Length [ft/ln]	18.77	41.87	40.56	53.92	32.40	31.66	13.22	100.95	14.34	8.30	97.90	50.16
95th-Percentile Queue Length [veh/ln]	1.35	3.01	2.92	3.88	2.33	2.28	0.95	7.27	1.03	0.60	7.05	3.61
95th-Percentile Queue Length [ft/ln]	33.78	75.37	73.01	97.05	58.32	56.99	23.80	181.71	25.81	14.94	176.21	90.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.23	13.17	13.23	32.31	11.05	11.08	27.55	21.33	16.29	27.24	21.08	18.60
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	15.06			17.19			21.18			20.50		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.57											
Intersection LOS	B											
Intersection V/C	0.440											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 5 Opening Year (2022) With Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	6	2	0	10	0	0	0	6	3	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**279**	**860**	**46**	**255**	**758**	**66**	**70**	**487**	**177**	**43**	**667**	**350**	**4058**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	12	0	0	19	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**1046**	**54**	**152**	**1301**	**25**	**11**	**12**	**20**	**31**	**3**	**109**	**2779**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	6	19	0	0	0	6	0	4	4	12	51
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**46**	**622**	**80**	**268**	**707**	**175**	**183**	**128**	**18**	**151**	**213**	**198**	**2789**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	18	0	20	31	0	0	0	0	32	101
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**0**	**9**	**18**	**0**	**20**	**31**	**468**	**36**	**10**	**458**	**32**	**1096**

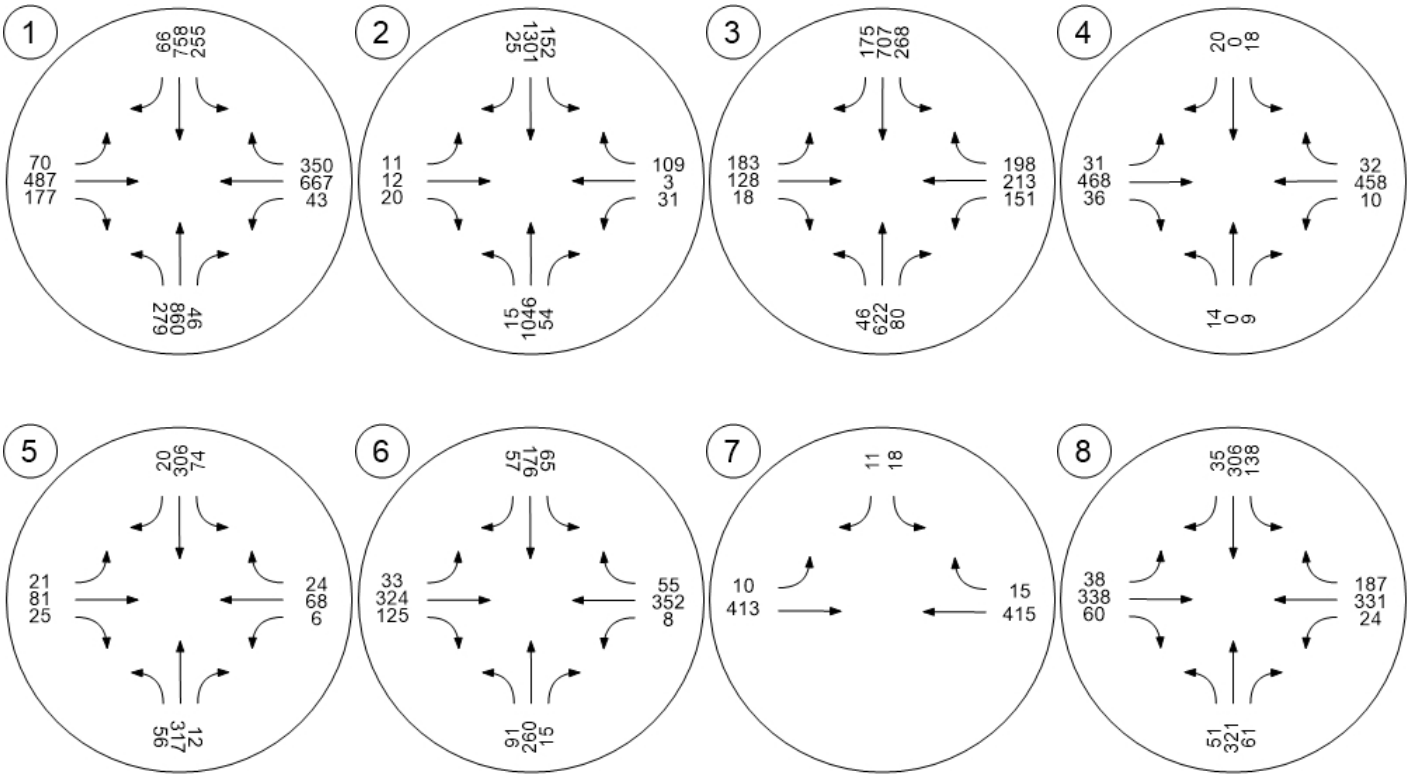
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	0	3	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**56**	**317**	**12**	**74**	**306**	**20**	**21**	**81**	**25**	**6**	**68**	**24**	**1010**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	3	2	16	0	0	29	0	50
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**91**	**260**	**15**	**65**	**176**	**57**	**33**	**324**	**125**	**8**	**352**	**55**	**1561**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	14	26	0	45
		Other	0	0	0	0	0	0	0
		Future Total	**18**	**11**	**10**	**413**	**415**	**15**	**882**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	13	6	6	2	0	10	0	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**51**	**321**	**61**	**138**	**306**	**35**	**38**	**338**	**60**	**24**	**331**	**187**	**1890**

Traffic Volume - Future Total Volume



TTM 37884

Vistro File: C:\...\AM - Mitigation.vistro

Scenario 5 Opening Year (2022) With Project - Improvements

Report File: C:\...\AM OYp_Improvements.pdf

1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.542	22.4	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.536	18.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.675	25.8	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.112	20.1	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.401	11.8	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.338	23.5	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.392	27.3	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.545	20.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.542

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	9	3	0	3	0	0	0	2	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	708	78	298	730	46	63	639	209	38	265	145
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	190	21	80	196	12	17	172	56	10	71	39
Total Analysis Volume [veh/h]	155	761	84	320	785	49	68	687	225	41	285	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	23	23	5	16	16	4	15	15
g / C, Green / Cycle	0.10	0.33	0.33	0.12	0.35	0.35	0.08	0.24	0.24	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.05	0.10	0.16	0.03	0.04	0.20	0.15	0.02	0.13	0.13
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	341	1616	504	412	1721	537	134	832	371	101	401	355
d1, Uniform Delay [s]	27.57	17.36	15.52	27.72	16.37	14.20	28.87	23.42	21.95	29.63	22.60	22.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.94	0.99	0.71	3.17	0.87	0.34	2.93	2.16	1.60	2.63	1.30	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.47	0.17	0.78	0.46	0.09	0.51	0.83	0.61	0.41	0.57	0.59
d, Delay for Lane Group [s/veh]	28.51	18.35	16.23	30.88	17.24	14.54	31.80	25.58	23.55	32.25	23.91	24.28
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	2.72	0.86	2.36	2.68	0.46	1.04	4.60	2.84	0.64	2.92	2.70
50th-Percentile Queue Length [ft/ln]	26.90	67.88	21.49	58.94	67.04	11.58	25.97	115.09	70.95	16.00	73.05	67.42
95th-Percentile Queue Length [veh/ln]	1.94	4.89	1.55	4.24	4.83	0.83	1.87	8.12	5.11	1.15	5.26	4.85
95th-Percentile Queue Length [ft/ln]	48.41	122.19	38.69	106.10	120.68	20.85	46.75	203.06	127.71	28.80	131.49	121.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.51	18.35	16.23	30.88	17.24	14.54	31.80	25.58	23.55	32.25	23.98	24.28
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.75			20.91			25.54			24.78		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.36											
Intersection LOS	C											
Intersection V/C	0.542											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	1026	41	97	983	54	9	6	14	48	10	263
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	271	11	26	260	14	2	2	4	13	3	70
Total Analysis Volume [veh/h]	27	1085	43	103	1039	57	10	6	15	51	11	278
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	34	34	6	37	37	3	3	16	16
g / C, Green / Cycle	0.04	0.45	0.45	0.08	0.49	0.49	0.04	0.04	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.03	0.06	0.21	0.21	0.01	0.01	0.03	0.19
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1745	1530	1714	1539
c, Capacity [veh/h]	71	2189	683	143	1674	856	79	69	363	326
d1, Uniform Delay [s]	35.08	14.78	11.84	33.59	12.46	12.46	34.54	34.56	24.04	28.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.38	0.80	0.18	6.72	0.82	1.60	1.24	1.53	0.17	8.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

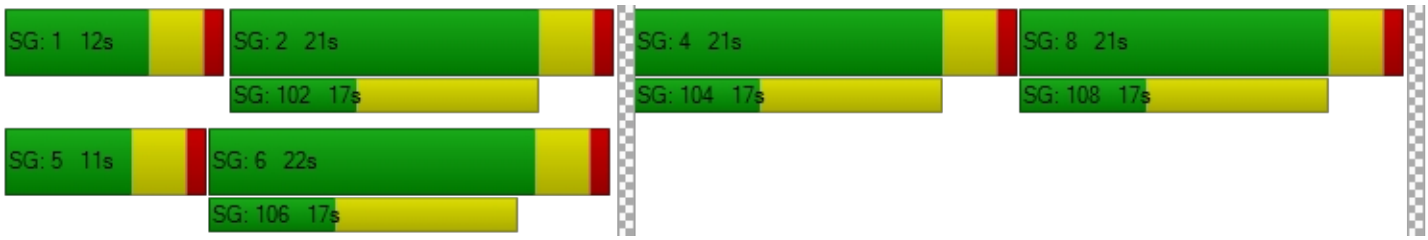
X, volume / capacity	0.38	0.50	0.06	0.72	0.43	0.43	0.20	0.22	0.14	0.89
d, Delay for Lane Group [s/veh]	38.46	15.58	12.02	40.31	13.28	14.06	35.78	36.10	24.22	36.77
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.50	3.64	0.37	1.97	3.44	3.71	0.31	0.29	0.71	5.39
50th-Percentile Queue Length [ft/ln]	12.61	91.11	9.13	49.28	86.04	92.72	7.65	7.27	17.66	134.78
95th-Percentile Queue Length [veh/ln]	0.91	6.56	0.66	3.55	6.20	6.68	0.55	0.52	1.27	9.20
95th-Percentile Queue Length [ft/ln]	22.70	163.99	16.43	88.71	154.88	166.89	13.76	13.09	31.79	229.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.46	15.58	12.02	40.31	13.52	14.06	35.78	35.78	36.10	24.22	36.77	36.77
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	15.98			15.84			35.93			34.88		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	18.51											
Intersection LOS	B											
Intersection V/C	0.536											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	6	0	0	0	2	0	6	6	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	497	16	90	505	334	260	247	43	75	318	205
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	128	4	23	130	86	67	64	11	19	82	53
Total Analysis Volume [veh/h]	61	512	16	93	520	344	268	254	44	77	327	211
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	6	22	22	13	22	22	6	15	15
g / C, Green / Cycle	0.07	0.30	0.30	0.08	0.31	0.31	0.18	0.31	0.31	0.08	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.01	0.03	0.11	0.22	0.16	0.07	0.03	0.04	0.18	0.14
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	123	1442	450	284	1510	471	312	1074	479	136	380	323
d1, Uniform Delay [s]	31.40	19.54	17.69	30.23	18.82	21.70	27.87	17.89	17.06	31.17	26.73	25.37
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.11	0.69	0.15	0.66	0.62	9.57	6.90	0.11	0.08	3.64	5.82	2.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

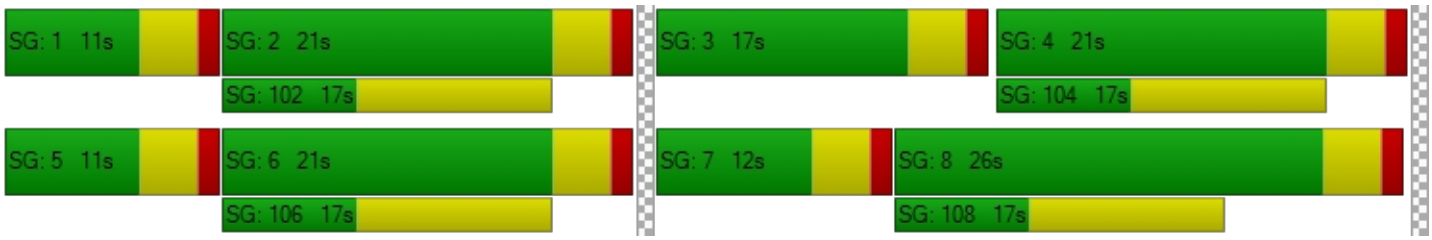
X, volume / capacity	0.50	0.35	0.04	0.33	0.34	0.73	0.86	0.24	0.09	0.57	0.86	0.65
d, Delay for Lane Group [s/veh]	34.51	20.23	17.83	30.90	19.44	31.27	34.77	18.01	17.14	34.81	32.54	27.61
Lane Group LOS	C	C	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.01	1.98	0.18	0.69	1.92	5.44	4.46	1.33	0.45	1.30	5.33	3.09
50th-Percentile Queue Length [ft/ln]	25.28	49.62	4.48	17.17	47.91	135.98	111.51	33.28	11.13	32.44	133.26	77.26
95th-Percentile Queue Length [veh/ln]	1.82	3.57	0.32	1.24	3.45	9.26	7.92	2.40	0.80	2.34	9.12	5.56
95th-Percentile Queue Length [ft/ln]	45.50	89.31	8.06	30.91	86.25	231.60	198.11	59.90	20.03	58.38	227.92	139.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	20.23	17.83	30.90	19.44	31.27	34.77	18.01	17.14	34.81	32.54	27.61
Movement LOS	C	C	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.64			24.80			25.88			31.14		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.77											
Intersection LOS	C											
Intersection V/C	0.675											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	20.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.112

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	30	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	2	28	0	30	10	312	6	8	573	10
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	7	0	8	3	82	2	2	151	3
Total Analysis Volume [veh/h]	12	0	2	30	0	32	11	330	6	8	606	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.11	0.00	0.05	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	16.53	20.13	9.64	20.12	21.38	11.90	8.74	0.00	0.00	7.94	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.12	0.55	0.55	0.55	0.03	0.00	0.00	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.07	3.07	3.07	13.87	13.87	13.87	0.86	0.00	0.00	0.49	0.00	0.00
d_A, Approach Delay [s/veh]	15.54			15.88			0.28			0.10		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.30											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	253	2	35	273	25	36	45	23	23	135	33
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	76	1	11	83	8	11	14	7	7	41	10
Total Analysis Volume [veh/h]	30	306	2	42	330	30	44	54	28	28	163	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	527	570	571	534	578	589	555	575
Degree of Utilization, x	0.06	0.27	0.27	0.08	0.31	0.31	0.23	0.40

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.18	1.09	1.09	0.26	1.32	1.29	0.87	1.93
95th-Percentile Queue Length [ft]	4.51	27.18	27.13	6.38	33.07	32.20	21.65	48.15
Approach Delay [s/veh]	11.20			11.44			11.37	13.39
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.77							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.338

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	3	25	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	172	11	44	168	99	64	200	56	21	453	51
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	50	3	13	49	29	19	58	16	6	132	15
Total Analysis Volume [veh/h]	84	201	13	51	196	116	75	234	65	25	529	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	27	27	6	25	25	8	17	17	4	13	13
g / C, Green / Cycle	0.12	0.38	0.38	0.09	0.36	0.36	0.11	0.24	0.24	0.06	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.01	0.02	0.06	0.08	0.04	0.07	0.04	0.01	0.15	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	389	1297	579	307	1212	541	191	837	374	98	651	291
d1, Uniform Delay [s]	28.11	14.42	13.69	29.41	15.56	15.87	28.99	21.53	20.95	31.68	27.25	23.98
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.25	0.07	0.25	0.29	0.90	1.30	0.18	0.22	1.35	2.51	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.15	0.02	0.17	0.16	0.21	0.39	0.28	0.17	0.25	0.81	0.21
d, Delay for Lane Group [s/veh]	28.39	14.67	13.76	29.66	15.85	16.78	30.30	21.71	21.17	33.03	29.76	24.33
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.59	0.93	0.12	0.37	0.96	1.24	1.13	1.39	0.76	0.41	3.98	0.78
50th-Percentile Queue Length [ft/ln]	14.84	23.24	3.00	9.28	23.98	30.90	28.26	34.84	19.12	10.17	99.43	19.42
95th-Percentile Queue Length [veh/ln]	1.07	1.67	0.22	0.67	1.73	2.22	2.04	2.51	1.38	0.73	7.16	1.40
95th-Percentile Queue Length [ft/ln]	26.71	41.84	5.40	16.70	43.16	55.62	50.88	62.70	34.41	18.31	178.97	34.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.39	14.67	13.76	29.66	15.85	16.78	30.30	21.71	21.17	33.03	29.76	24.33
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.50			18.08			23.34			29.36		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.55											
Intersection LOS	C											
Intersection V/C	0.338											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.392

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	22	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	14	36	246	450	155
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	4	10	71	129	45
Total Analysis Volume [veh/h]	106	16	41	283	517	178
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.39	0.03	0.05	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	27.26	21.12	9.14	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.02	2.02	0.14	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	50.39	50.39	3.53	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	26.45		1.16		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.16					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	4	10	9	3	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	238	21	142	316	47	41	239	64	25	526	182
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	63	6	37	83	12	11	63	17	7	138	48
Total Analysis Volume [veh/h]	63	251	22	149	333	49	43	252	67	26	554	192
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	7	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.36	0.36	0.11	0.39	0.39	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.08	0.09	0.11	0.11	0.05	0.14	0.04	0.02	0.31	0.13
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1721	868	1800	1530	1146	1800	1530
c, Capacity [veh/h]	134	640	622	192	701	670	121	600	510	339	600	510
d1, Uniform Delay [s]	26.54	13.52	13.54	25.99	12.57	12.59	30.08	15.56	13.99	20.14	19.33	15.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.56	0.77	0.80	6.63	0.98	1.04	1.75	0.47	0.12	0.10	9.66	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.21	0.22	0.78	0.28	0.28	0.35	0.42	0.13	0.08	0.92	0.38
d, Delay for Lane Group [s/veh]	29.10	14.29	14.34	32.62	13.56	13.63	31.83	16.03	14.11	20.23	28.99	15.76
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	1.17	1.16	2.16	1.58	1.54	0.61	2.23	0.53	0.27	7.48	1.68
50th-Percentile Queue Length [ft/ln]	21.36	29.31	28.97	53.90	39.59	38.46	15.34	55.69	13.26	6.68	187.01	41.89
95th-Percentile Queue Length [veh/ln]	1.54	2.11	2.09	3.88	2.85	2.77	1.10	4.01	0.95	0.48	11.97	3.02
95th-Percentile Queue Length [ft/ln]	38.45	52.76	52.15	97.02	71.26	69.22	27.61	100.25	23.87	12.03	299.15	75.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.10	14.31	14.34	32.62	13.59	13.63	31.83	16.03	14.11	20.23	28.99	15.76
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	17.09			18.93			17.55			25.41		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.87											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TTM 37884

Vistro File: C:\...\AM - Mitigation.vistro

Scenario 5 Opening Year (2022) With Project - Improvements

Report File: C:\...\AM OYp_Improvements.pdf

1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	9	3	0	3	0	0	0	2	1	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**144**	**708**	**78**	**298**	**730**	**46**	**63**	**639**	**209**	**38**	**265**	**145**	**3363**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	18	0	0	6	0	0	0	0	0	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**26**	**1026**	**41**	**97**	**983**	**54**	**9**	**6**	**14**	**48**	**10**	**263**	**2577**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	2	6	0	0	0	2	0	6	6	18	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**497**	**16**	**90**	**505**	**334**	**260**	**247**	**43**	**75**	**318**	**205**	**2649**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	28	0	30	10	0	0	0	0	10	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**11**	**0**	**2**	**28**	**0**	**30**	**10**	**312**	**6**	**8**	**573**	**10**	**990**

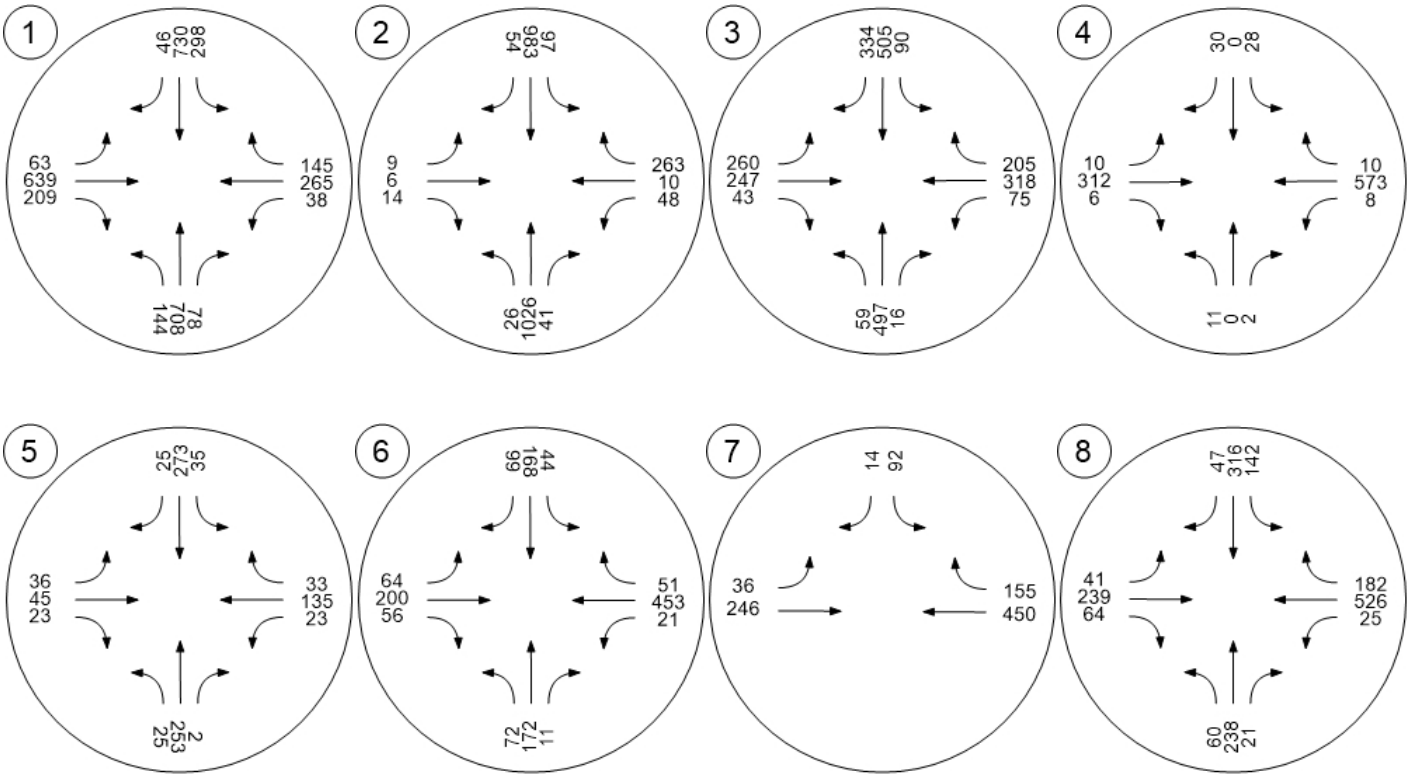
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	1	0	0	0	0	0	0	0	4
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**25**	**253**	**2**	**35**	**273**	**25**	**36**	**45**	**23**	**23**	**135**	**33**	**908**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	3	25	0	0	9	0	38
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**72**	**172**	**11**	**44**	**168**	**99**	**64**	**200**	**56**	**21**	**453**	**51**	**1411**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	3	22	8	0	34
		Other	0	0	0	0	0	0	0
		Future Total	**92**	**14**	**36**	**246**	**450**	**155**	**993**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	4	10	9	3	0	3	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**60**	**238**	**21**	**142**	**316**	**47**	**41**	**239**	**64**	**25**	**526**	**182**	**1901**

Traffic Volume - Future Total Volume



TTM 37884

Vistro File: C:\...\PM - Mitigation.vistro

Scenario 5 Opening Year (2022) With Project - Improvements

Report File: C:\...\PM OYp_Improvements.pdf

1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	NB Left	0.663	29.1	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.446	14.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.486	22.3	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.060	20.2	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.313	11.1	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.243	23.0	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.071	18.8	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.440	18.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	2	0	10	0	0	0	6	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	279	860	46	255	758	66	70	487	177	43	667	350
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	227	12	67	200	17	18	128	47	11	176	92
Total Analysis Volume [veh/h]	294	906	48	269	799	70	74	513	187	45	703	369
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	27	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	7	18	18	5	25	25	4	24	24
g / C, Green / Cycle	0.10	0.25	0.25	0.10	0.25	0.25	0.08	0.36	0.36	0.06	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.03	0.08	0.16	0.05	0.04	0.15	0.12	0.03	0.32	0.32
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	333	1249	390	333	1249	390	131	1227	548	101	612	542
d1, Uniform Delay [s]	31.10	23.86	20.08	30.85	23.24	20.39	31.21	16.97	16.43	31.87	22.27	22.29
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.26	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.63	3.70	0.65	4.63	2.52	1.01	3.76	0.23	0.37	3.10	13.62	15.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

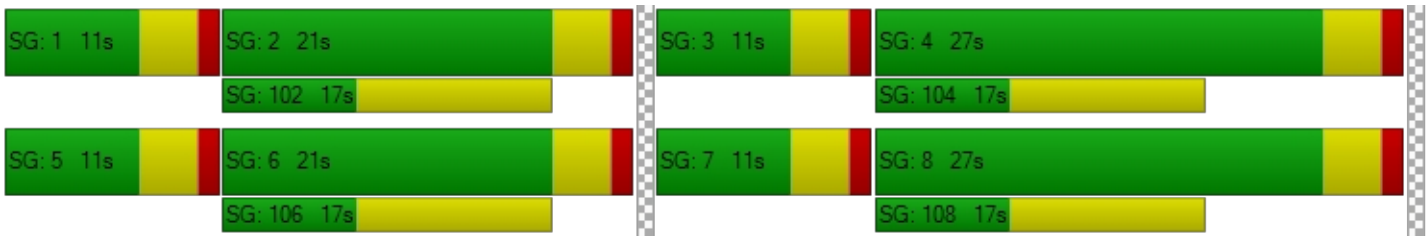
X, volume / capacity	0.88	0.73	0.12	0.81	0.64	0.18	0.56	0.42	0.34	0.45	0.93	0.93
d, Delay for Lane Group [s/veh]	38.73	27.56	20.73	35.48	25.76	21.39	34.96	17.19	16.80	34.97	35.89	37.59
Lane Group LOS	D	C	C	D	C	C	C	B	B	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.60	4.48	0.61	2.25	3.77	0.91	1.25	2.73	1.95	0.77	10.00	9.13
50th-Percentile Queue Length [ft/ln]	65.02	112.01	15.31	56.35	94.31	22.79	31.26	68.14	48.84	19.20	249.88	228.22
95th-Percentile Queue Length [veh/ln]	4.68	7.95	1.10	4.06	6.79	1.64	2.25	4.91	3.52	1.38	15.18	14.08
95th-Percentile Queue Length [ft/ln]	117.03	198.80	27.55	101.43	169.76	41.03	56.27	122.65	87.90	34.56	379.50	352.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.73	27.56	20.73	35.48	25.76	21.39	34.96	17.19	16.80	34.97	36.22	37.59
Movement LOS	D	C	C	D	C	C	C	B	B	C	D	D
d_A, Approach Delay [s/veh]	29.93			27.79			18.80			36.62		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	29.09											
Intersection LOS	C											
Intersection V/C	0.663											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.446

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	19	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	1046	54	152	1301	25	11	12	20	31	3	109
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	285	15	41	355	7	3	3	5	8	1	30
Total Analysis Volume [veh/h]	16	1142	59	166	1420	27	12	13	22	34	3	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	14	24	0	0	21	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	42	42	9	49	49	5	5	8	8
g / C, Green / Cycle	0.03	0.52	0.52	0.12	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.23	0.04	0.10	0.28	0.28	0.01	0.01	0.02	0.08
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	46	2558	798	202	2099	1092	101	88	177	159
d1, Uniform Delay [s]	38.27	11.95	9.53	34.52	8.34	8.34	36.09	36.09	32.86	34.99
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.35	0.57	0.18	8.10	0.71	1.36	1.26	1.46	0.52	7.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

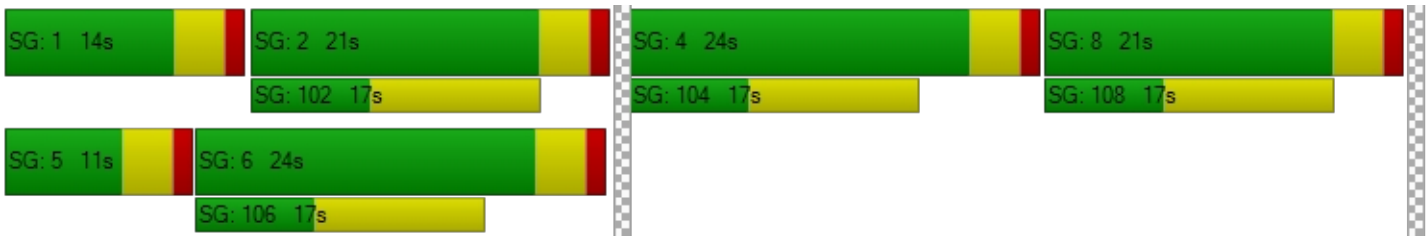
X, volume / capacity	0.34	0.45	0.07	0.82	0.45	0.45	0.25	0.25	0.19	0.77
d, Delay for Lane Group [s/veh]	42.62	12.52	9.71	42.62	9.04	9.70	37.34	37.56	33.38	42.59
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	3.41	0.44	3.41	3.52	3.86	0.50	0.44	0.60	2.54
50th-Percentile Queue Length [ft/ln]	8.52	85.14	11.11	85.17	88.05	96.55	12.49	11.11	15.05	63.42
95th-Percentile Queue Length [veh/ln]	0.61	6.13	0.80	6.13	6.34	6.95	0.90	0.80	1.08	4.57
95th-Percentile Queue Length [ft/ln]	15.33	153.25	20.00	153.30	158.48	173.80	22.48	20.00	27.08	114.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.62	12.52	9.71	42.62	9.26	9.70	37.34	37.34	37.56	33.38	42.59	42.59
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.78			12.70			37.44			40.58		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	14.55											
Intersection LOS	B											
Intersection V/C	0.446											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	19	0	0	0	6	0	4	4	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	622	80	268	707	175	183	128	18	151	213	198
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	160	21	69	182	45	47	33	5	39	55	51
Total Analysis Volume [veh/h]	47	640	82	276	727	180	188	132	19	155	219	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	23	23	7	26	26	8	12	12	7	11	11
g / C, Green / Cycle	0.06	0.35	0.35	0.11	0.40	0.40	0.12	0.18	0.18	0.11	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.05	0.08	0.15	0.12	0.11	0.04	0.01	0.09	0.12	0.13
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	110	1730	540	362	1948	608	212	614	274	196	305	260
d1, Uniform Delay [s]	29.40	15.73	14.45	28.28	13.92	13.43	28.14	22.87	22.27	28.14	25.62	25.97
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.63	0.61	0.60	3.36	0.55	1.24	11.55	0.17	0.11	6.96	3.15	5.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.37	0.15	0.76	0.37	0.30	0.89	0.22	0.07	0.79	0.72	0.79
d, Delay for Lane Group [s/veh]	32.03	16.34	15.04	31.64	14.47	14.67	39.69	23.05	22.38	35.10	28.77	31.18
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.72	2.04	0.77	1.99	2.05	1.61	3.23	0.77	0.22	2.51	3.13	3.08
50th-Percentile Queue Length [ft/ln]	17.91	50.92	19.35	49.80	51.24	40.20	80.74	19.34	5.52	62.65	78.17	76.89
95th-Percentile Queue Length [veh/ln]	1.29	3.67	1.39	3.59	3.69	2.89	5.81	1.39	0.40	4.51	5.63	5.54
95th-Percentile Queue Length [ft/ln]	32.23	91.65	34.84	89.64	92.23	72.36	145.33	34.82	9.93	112.76	140.71	138.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.03	16.34	15.04	31.64	14.47	14.67	39.69	23.05	22.38	35.10	28.77	31.18
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.16			18.50			32.24			31.32		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.35											
Intersection LOS	C											
Intersection V/C	0.486											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	20.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.060

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	20	31	0	0	0	0	32
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	9	18	0	20	31	468	36	10	458	32
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	2	5	0	5	8	122	9	3	120	8
Total Analysis Volume [veh/h]	15	0	9	19	0	21	32	489	38	10	478	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.07	0.00	0.03	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	20.22	23.42	10.70	20.00	23.68	10.83	8.49	0.00	0.00	8.46	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.23	0.34	0.34	0.34	0.09	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.79	5.79	5.79	8.43	8.43	8.43	2.32	0.00	0.00	0.72	0.00	0.00
d_A, Approach Delay [s/veh]	16.65			15.19			0.49			0.16		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.19											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	317	12	74	306	20	21	81	25	6	68	24
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	91	3	21	87	6	6	23	7	2	19	7
Total Analysis Volume [veh/h]	64	362	14	85	350	23	24	93	29	7	78	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	555	602	607	557	603	613	567	565
Degree of Utilization, x	0.12	0.31	0.31	0.15	0.31	0.30	0.26	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	1.33	1.31	0.54	1.31	1.28	1.02	0.73
95th-Percentile Queue Length [ft]	9.72	33.24	32.83	13.40	32.71	32.05	25.52	18.31
Approach Delay [s/veh]	11.14			11.05			11.54	10.94
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.14							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.243

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	2	16	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	260	15	65	176	57	33	324	125	8	352	55
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	68	4	17	46	15	9	85	33	2	93	14
Total Analysis Volume [veh/h]	96	274	16	68	185	60	35	341	132	8	371	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	32	32	7	30	30	5	14	14	2	10	10
g / C, Green / Cycle	0.12	0.45	0.45	0.11	0.43	0.43	0.07	0.19	0.19	0.02	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.05	0.04	0.02	0.10	0.09	0.00	0.11	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	408	1534	685	356	1481	661	125	669	299	39	497	222
d1, Uniform Delay [s]	27.85	11.65	10.83	28.61	11.98	11.80	30.83	25.27	24.90	33.72	28.80	26.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.25	0.06	0.26	0.17	0.27	1.21	0.60	1.03	2.60	2.27	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.18	0.02	0.19	0.12	0.09	0.28	0.51	0.44	0.21	0.75	0.26
d, Delay for Lane Group [s/veh]	28.15	11.90	10.89	28.87	12.15	12.07	32.03	25.87	25.93	36.32	31.07	27.32
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.67	1.09	0.12	0.49	0.74	0.50	0.55	2.31	1.80	0.15	2.83	0.81
50th-Percentile Queue Length [ft/ln]	16.87	27.13	3.10	12.14	18.57	12.54	13.81	57.73	45.11	3.77	70.87	20.36
95th-Percentile Queue Length [veh/ln]	1.21	1.95	0.22	0.87	1.34	0.90	0.99	4.16	3.25	0.27	5.10	1.47
95th-Percentile Queue Length [ft/ln]	30.37	48.84	5.58	21.85	33.42	22.57	24.86	103.91	81.19	6.78	127.57	36.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.15	11.90	10.89	28.87	12.15	12.07	32.03	25.87	25.93	36.32	31.07	27.32
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.90			15.77			26.31			30.67		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.02											
Intersection LOS	C											
Intersection V/C	0.243											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.071

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	14	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	11	10	413	415	15
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	117	117	4
Total Analysis Volume [veh/h]	20	12	11	467	469	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.81	12.11	8.34	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.30	0.30	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.48	7.48	0.77	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.30		0.19		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.62					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.440

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	13	6	6	2	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	321	61	138	306	35	38	338	60	24	331	187
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	87	17	37	83	9	10	92	16	7	90	51
Total Analysis Volume [veh/h]	55	348	66	150	332	38	41	367	65	26	359	203
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	17	17	17	17	17	17
g / C, Green / Cycle	0.07	0.40	0.40	0.11	0.45	0.45	0.28	0.28	0.28	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.12	0.09	0.10	0.11	0.04	0.20	0.04	0.03	0.20	0.13
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1736	1039	1800	1530	1031	1800	1530
c, Capacity [veh/h]	124	727	687	194	801	772	194	510	434	188	510	434
d1, Uniform Delay [s]	26.75	12.11	12.14	25.92	10.35	10.36	27.01	19.40	16.13	26.91	19.30	17.81
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.48	1.01	1.09	6.39	0.69	0.72	0.54	1.93	0.16	0.33	1.79	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

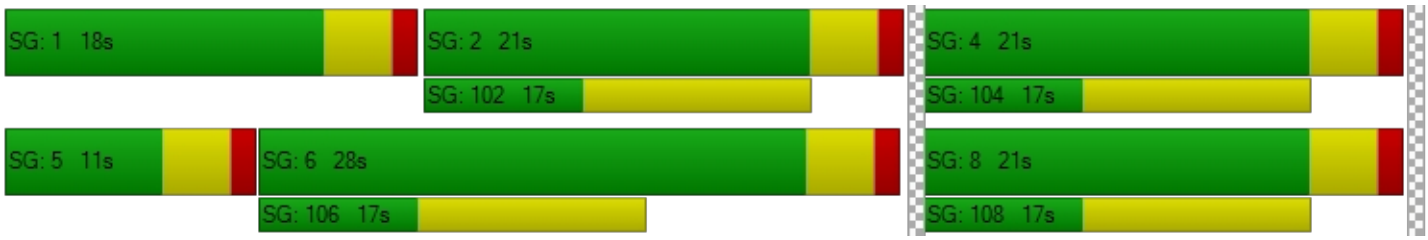
X, volume / capacity	0.44	0.29	0.29	0.77	0.23	0.24	0.21	0.72	0.15	0.14	0.70	0.47
d, Delay for Lane Group [s/veh]	29.23	13.12	13.23	32.31	11.04	11.08	27.55	21.33	16.29	27.24	21.08	18.60
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.75	1.67	1.62	2.16	1.30	1.27	0.53	4.04	0.57	0.33	3.92	2.01
50th-Percentile Queue Length [ft/ln]	18.77	41.87	40.56	53.92	32.40	31.66	13.22	100.95	14.34	8.30	97.90	50.16
95th-Percentile Queue Length [veh/ln]	1.35	3.01	2.92	3.88	2.33	2.28	0.95	7.27	1.03	0.60	7.05	3.61
95th-Percentile Queue Length [ft/ln]	33.78	75.37	73.01	97.05	58.32	56.99	23.80	181.71	25.81	14.94	176.21	90.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.23	13.17	13.23	32.31	11.05	11.08	27.55	21.33	16.29	27.24	21.08	18.60
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	15.06			17.19			21.18			20.50		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.57											
Intersection LOS	B											
Intersection V/C	0.440											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



TTM 37884

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Scenario 5 Opening Year (2022) With Project - Improvements

Report File: C:\...\PM OYp_Improvements.pdf

1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	6	2	0	10	0	0	0	6	3	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**279**	**860**	**46**	**255**	**758**	**66**	**70**	**487**	**177**	**43**	**667**	**350**	**4058**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	12	0	0	19	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**1046**	**54**	**152**	**1301**	**25**	**11**	**12**	**20**	**31**	**3**	**109**	**2779**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	6	19	0	0	0	6	0	4	4	12	51
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**46**	**622**	**80**	**268**	**707**	**175**	**183**	**128**	**18**	**151**	**213**	**198**	**2789**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	18	0	20	31	0	0	0	0	32	101
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**0**	**9**	**18**	**0**	**20**	**31**	**468**	**36**	**10**	**458**	**32**	**1096**

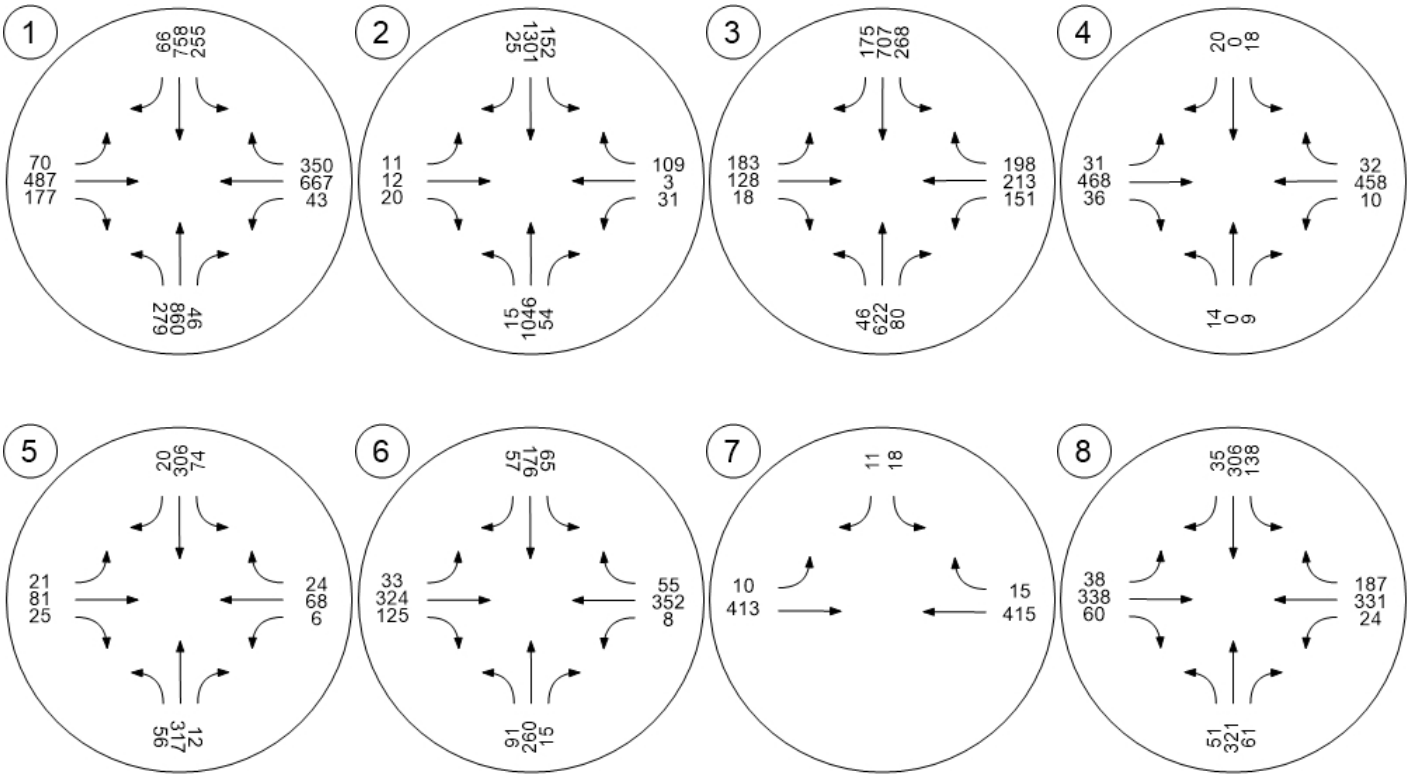
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	0	3	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**56**	**317**	**12**	**74**	**306**	**20**	**21**	**81**	**25**	**6**	**68**	**24**	**1010**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	3	2	16	0	0	29	0	50
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**91**	**260**	**15**	**65**	**176**	**57**	**33**	**324**	**125**	**8**	**352**	**55**	**1561**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	14	26	0	45
		Other	0	0	0	0	0	0	0
		Future Total	**18**	**11**	**10**	**413**	**415**	**15**	**882**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	13	6	6	2	0	10	0	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**51**	**321**	**61**	**138**	**306**	**35**	**38**	**338**	**60**	**24**	**331**	**187**	**1890**

Traffic Volume - Future Total Volume



Opening Year (2022) With Project – Potential Maximum Density

TTM 37884

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Report File: C:\...\AM OYp_MD.pdf

Scenario 6 Opening Year (2022) With Project MD
1/17/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.543	22.4	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.537	18.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.677	25.9	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.176	25.3	D
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.402	11.8	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.339	23.6	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.402	28.1	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.545	21.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	4	0	4	0	0	0	3	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	710	79	298	731	46	63	639	210	38	265	145
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	191	21	80	197	12	17	172	56	10	71	39
Total Analysis Volume [veh/h]	157	763	85	320	786	49	68	687	226	41	285	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	23	23	5	16	16	4	15	15
g / C, Green / Cycle	0.10	0.33	0.33	0.12	0.35	0.35	0.08	0.24	0.24	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.06	0.10	0.16	0.03	0.04	0.20	0.15	0.02	0.13	0.13
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	342	1616	504	412	1720	537	134	832	371	101	401	355
d1, Uniform Delay [s]	27.57	17.37	15.53	27.72	16.39	14.21	28.87	23.41	21.97	29.63	22.60	22.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.96	0.99	0.72	3.17	0.88	0.34	2.93	2.16	1.62	2.63	1.30	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.47	0.17	0.78	0.46	0.09	0.51	0.83	0.61	0.41	0.57	0.59
d, Delay for Lane Group [s/veh]	28.53	18.36	16.25	30.88	17.26	14.55	31.80	25.58	23.58	32.25	23.90	24.28
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.09	2.72	0.87	2.36	2.69	0.46	1.04	4.60	2.85	0.64	2.92	2.70
50th-Percentile Queue Length [ft/ln]	27.26	68.10	21.77	58.94	67.19	11.59	25.97	115.08	71.34	16.00	73.05	67.42
95th-Percentile Queue Length [veh/ln]	1.96	4.90	1.57	4.24	4.84	0.83	1.87	8.12	5.14	1.15	5.26	4.85
95th-Percentile Queue Length [ft/ln]	49.07	122.59	39.19	106.10	120.94	20.86	46.75	203.05	128.41	28.80	131.48	121.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.53	18.36	16.25	30.88	17.26	14.55	31.80	25.58	23.58	32.25	23.98	24.28
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.77			20.92			25.55			24.78		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.37											
Intersection LOS	C											
Intersection V/C	0.543											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	1031	41	97	985	54	9	6	14	48	10	263
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	272	11	26	260	14	2	2	4	13	3	70
Total Analysis Volume [veh/h]	27	1090	43	103	1041	57	10	6	15	51	11	278
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	34	34	6	37	37	3	3	16	16
g / C, Green / Cycle	0.04	0.45	0.45	0.08	0.49	0.49	0.04	0.04	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.03	0.06	0.21	0.21	0.01	0.01	0.03	0.19
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1753	1745	1530	1714	1539
c, Capacity [veh/h]	71	2189	683	143	1674	856	79	69	363	326
d1, Uniform Delay [s]	35.08	14.80	11.84	33.59	12.47	12.47	34.54	34.56	24.04	28.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.38	0.81	0.18	6.72	0.82	1.60	1.24	1.53	0.17	8.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

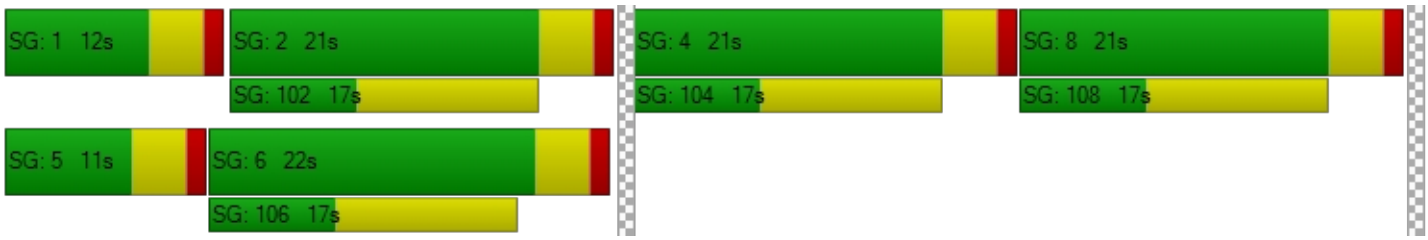
X, volume / capacity	0.38	0.50	0.06	0.72	0.43	0.43	0.20	0.22	0.14	0.89
d, Delay for Lane Group [s/veh]	38.46	15.61	12.02	40.31	13.29	14.07	35.78	36.10	24.22	36.77
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.50	3.67	0.37	1.97	3.45	3.72	0.31	0.29	0.71	5.39
50th-Percentile Queue Length [ft/ln]	12.61	91.66	9.13	49.28	86.24	92.94	7.65	7.27	17.66	134.78
95th-Percentile Queue Length [veh/ln]	0.91	6.60	0.66	3.55	6.21	6.69	0.55	0.52	1.27	9.20
95th-Percentile Queue Length [ft/ln]	22.70	164.99	16.43	88.71	155.24	167.30	13.76	13.09	31.79	229.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.46	15.61	12.02	40.31	13.53	14.07	35.78	35.78	36.10	24.22	36.77	36.77
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	16.01			15.85			35.93			34.88		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	18.51											
Intersection LOS	B											
Intersection V/C	0.537											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	8	0	0	0	3	0	8	8	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	497	17	92	505	334	260	248	43	77	320	210
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	128	4	24	130	86	67	64	11	20	82	54
Total Analysis Volume [veh/h]	61	512	18	95	520	344	268	255	44	79	330	216
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	6	22	22	13	22	22	6	15	15
g / C, Green / Cycle	0.07	0.29	0.29	0.09	0.31	0.31	0.18	0.31	0.31	0.08	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.01	0.03	0.11	0.22	0.16	0.07	0.03	0.05	0.18	0.14
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	123	1432	447	286	1503	469	312	1076	480	138	382	325
d1, Uniform Delay [s]	31.40	19.65	17.81	30.21	18.89	21.79	27.87	17.87	17.03	31.15	26.69	25.38
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.11	0.70	0.17	0.67	0.63	9.76	6.90	0.11	0.08	3.73	5.87	2.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

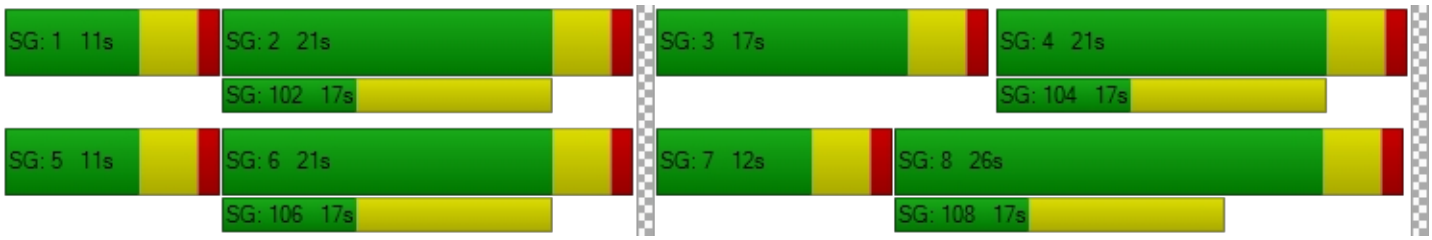
X, volume / capacity	0.50	0.36	0.04	0.33	0.35	0.73	0.86	0.24	0.09	0.57	0.86	0.66
d, Delay for Lane Group [s/veh]	34.51	20.35	17.98	30.89	19.53	31.55	34.77	17.98	17.11	34.88	32.55	27.71
Lane Group LOS	C	C	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.01	1.99	0.20	0.70	1.92	5.47	4.46	1.34	0.44	1.33	5.38	3.17
50th-Percentile Queue Length [ft/ln]	25.28	49.84	5.07	17.54	48.07	136.78	111.51	33.38	11.11	33.31	134.52	79.31
95th-Percentile Queue Length [veh/ln]	1.82	3.59	0.36	1.26	3.46	9.31	7.92	2.40	0.80	2.40	9.19	5.71
95th-Percentile Queue Length [ft/ln]	45.50	89.71	9.12	31.57	86.53	232.68	198.11	60.08	20.00	59.96	229.63	142.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	20.35	17.98	30.89	19.53	31.55	34.77	17.98	17.11	34.88	32.55	27.71
Movement LOS	C	C	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.74			24.96			25.85			31.17		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.87											
Intersection LOS	C											
Intersection V/C	0.677											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.176

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	39	14	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	2	37	0	39	14	312	6	8	573	12
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	10	0	10	4	82	2	2	151	3
Total Analysis Volume [veh/h]	12	0	2	39	0	41	15	330	6	8	606	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.18	0.00	0.08	0.02	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	24.25	21.09	11.12	25.26	23.99	16.26	8.77	0.00	0.00	7.94	0.00	0.00
Movement LOS	C	C	B	D	C	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.20	1.01	1.01	1.01	0.04	0.02	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	5.03	5.03	5.03	25.27	25.27	25.27	1.10	0.55	0.00	0.49	0.49	0.49
d_A, Approach Delay [s/veh]	22.38			20.65			0.37			0.10		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	2.02											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.402

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	254	2	35	273	25	36	45	23	23	135	33
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	77	1	11	83	8	11	14	7	7	41	10
Total Analysis Volume [veh/h]	30	307	2	42	330	30	44	54	28	28	163	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	527	571	571	534	577	589	555	575
Degree of Utilization, x	0.06	0.27	0.27	0.08	0.31	0.31	0.23	0.40

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.18	1.09	1.09	0.26	1.32	1.29	0.87	1.93
95th-Percentile Queue Length [ft]	4.51	27.30	27.25	6.38	33.08	32.22	21.66	48.18
Approach Delay [s/veh]	11.21			11.44			11.37	13.40
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.77							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.339

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	4	33	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	172	11	44	168	99	65	208	56	21	455	51
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	50	3	13	49	29	19	61	16	6	133	15
Total Analysis Volume [veh/h]	84	201	13	51	196	116	76	243	65	25	532	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	27	27	6	25	25	8	17	17	4	13	13
g / C, Green / Cycle	0.12	0.38	0.38	0.09	0.35	0.35	0.11	0.25	0.25	0.06	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.01	0.02	0.06	0.08	0.04	0.07	0.04	0.01	0.16	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	389	1292	577	307	1208	539	192	842	376	98	654	292
d1, Uniform Delay [s]	28.11	14.48	13.75	29.41	15.63	15.94	28.97	21.51	20.87	31.68	27.22	23.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.26	0.07	0.25	0.29	0.91	1.31	0.19	0.22	1.35	2.51	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.16	0.02	0.17	0.16	0.22	0.40	0.29	0.17	0.25	0.81	0.21
d, Delay for Lane Group [s/veh]	28.39	14.74	13.82	29.66	15.92	16.86	30.28	21.69	21.08	33.03	29.74	24.28
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.59	0.93	0.12	0.37	0.96	1.24	1.15	1.45	0.76	0.41	4.00	0.78
50th-Percentile Queue Length [ft/ln]	14.84	23.32	3.01	9.28	24.06	31.01	28.63	36.19	19.06	10.17	99.98	19.39
95th-Percentile Queue Length [veh/ln]	1.07	1.68	0.22	0.67	1.73	2.23	2.06	2.61	1.37	0.73	7.20	1.40
95th-Percentile Queue Length [ft/ln]	26.71	41.98	5.42	16.70	43.30	55.81	51.54	65.14	34.32	18.31	179.96	34.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.39	14.74	13.82	29.66	15.92	16.86	30.28	21.69	21.08	33.03	29.74	24.28
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.55			18.15			23.29			29.34		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.56											
Intersection LOS	C											
Intersection V/C	0.339											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	28.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.402

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	29	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	14	37	253	452	155
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	4	11	73	130	45
Total Analysis Volume [veh/h]	106	16	43	291	520	178
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.40	0.03	0.05	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	28.09	21.67	9.16	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.08	2.08	0.15	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	52.00	52.00	3.72	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	27.24		1.18		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.22					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	5	14	11	4	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	238	21	142	316	48	45	241	65	25	527	182
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	63	6	37	83	13	12	63	17	7	139	48
Total Analysis Volume [veh/h]	63	251	22	149	333	51	47	254	68	26	555	192
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	7	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.36	0.36	0.11	0.39	0.39	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.08	0.09	0.11	0.11	0.05	0.14	0.04	0.02	0.31	0.13
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1718	867	1800	1530	1143	1800	1530
c, Capacity [veh/h]	134	640	622	192	701	669	121	600	510	337	600	510
d1, Uniform Delay [s]	26.54	13.52	13.54	25.99	12.58	12.60	30.08	15.58	14.00	20.19	19.34	15.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.56	0.77	0.80	6.63	0.99	1.05	2.04	0.48	0.12	0.10	9.85	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.21	0.22	0.78	0.28	0.28	0.39	0.42	0.13	0.08	0.93	0.38
d, Delay for Lane Group [s/veh]	29.10	14.29	14.34	32.62	13.57	13.65	32.12	16.05	14.12	20.28	29.20	15.76
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	1.17	1.16	2.16	1.59	1.55	0.67	2.25	0.54	0.27	7.53	1.68
50th-Percentile Queue Length [ft/ln]	21.36	29.31	28.97	53.90	39.86	38.68	16.86	56.22	13.47	6.69	188.19	41.89
95th-Percentile Queue Length [veh/ln]	1.54	2.11	2.09	3.88	2.87	2.78	1.21	4.05	0.97	0.48	12.03	3.02
95th-Percentile Queue Length [ft/ln]	38.45	52.76	52.15	97.02	71.74	69.62	30.35	101.19	24.24	12.05	300.67	75.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.10	14.31	14.34	32.62	13.60	13.65	32.12	16.05	14.12	20.28	29.20	15.76
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	17.09			18.92			17.74			25.56		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.95											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Scenario 6 Opening Year (2022) With Project MD
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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	4	0	4	0	0	0	3	1	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**146**	**710**	**79**	**298**	**731**	**46**	**63**	**639**	**210**	**38**	**265**	**145**	**3370**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	23	0	0	8	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**26**	**1031**	**41**	**97**	**985**	**54**	**9**	**6**	**14**	**48**	**10**	**263**	**2584**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	3	8	0	0	0	3	0	8	8	23	53
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**497**	**17**	**92**	**505**	**334**	**260**	**248**	**43**	**77**	**320**	**210**	**2662**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	37	0	39	14	0	0	0	0	12	102
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**11**	**0**	**2**	**37**	**0**	**39**	**14**	**312**	**6**	**8**	**573**	**12**	**1014**

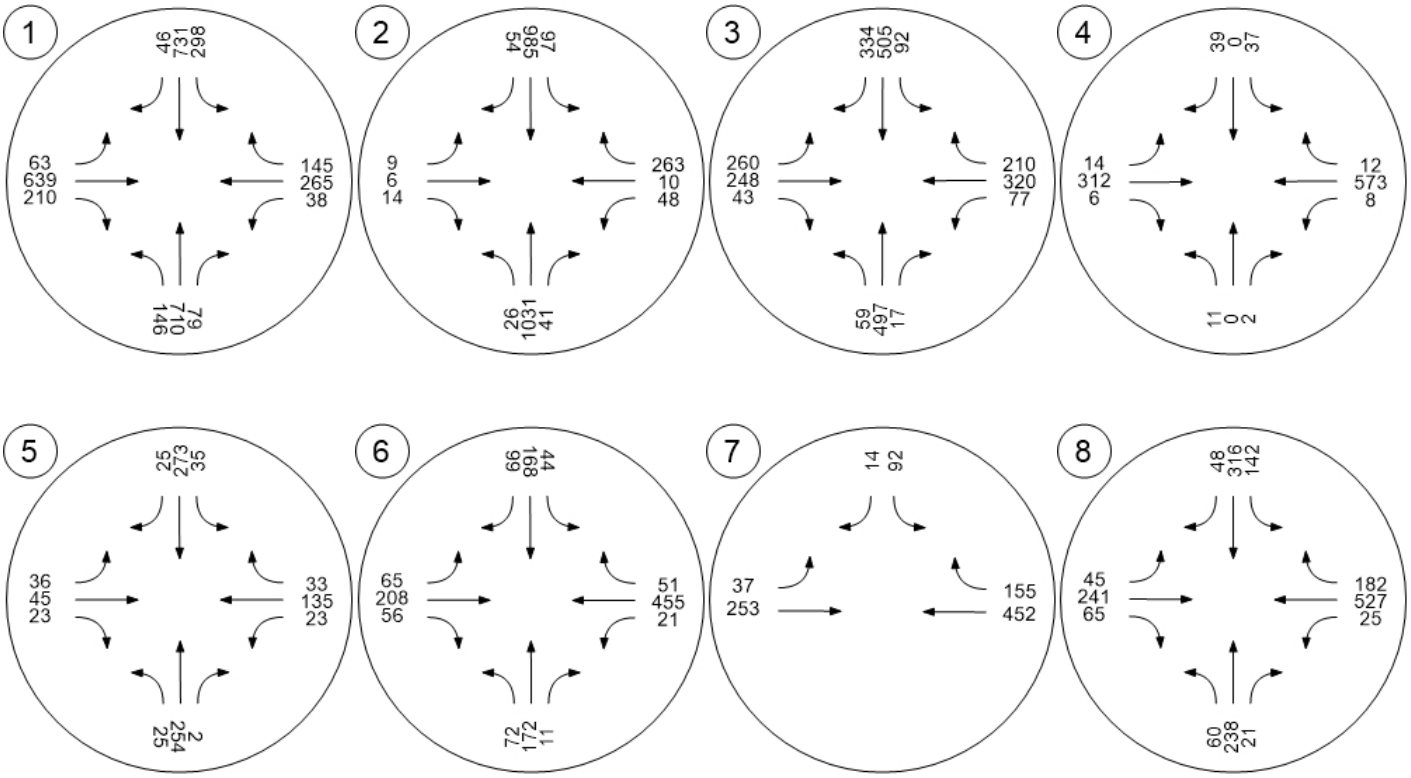
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	1	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**25**	**254**	**2**	**35**	**273**	**25**	**36**	**45**	**23**	**23**	**135**	**33**	**909**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	4	33	0	0	11	0	49
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**72**	**172**	**11**	**44**	**168**	**99**	**65**	**208**	**56**	**21**	**455**	**51**	**1422**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	4	29	10	0	44
		Other	0	0	0	0	0	0	0
		Future Total	**92**	**14**	**37**	**253**	**452**	**155**	**1003**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	5	14	11	4	0	4	0	39
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**60**	**238**	**21**	**142**	**316**	**48**	**45**	**241**	**65**	**25**	**527**	**182**	**1910**

Traffic Volume - Future Total Volume



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Scenario 6 Opening Year (2022) With Project MD
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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	NB Left	0.663	29.1	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.447	14.6	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.491	22.5	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.142	28.5	D
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.313	11.1	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.246	23.0	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.073	19.1	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.441	18.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	8	3	0	13	0	0	0	8	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	862	47	255	761	66	70	487	179	44	667	350
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	227	12	67	200	17	18	128	47	12	176	92
Total Analysis Volume [veh/h]	295	908	50	269	802	70	74	513	189	46	703	369
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	27	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	7	18	18	5	25	25	4	24	24
g / C, Green / Cycle	0.10	0.25	0.25	0.10	0.25	0.25	0.08	0.36	0.36	0.06	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.09	0.19	0.03	0.08	0.16	0.05	0.04	0.15	0.12	0.03	0.32	0.32
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	333	1249	390	333	1249	390	131	1225	547	102	612	542
d1, Uniform Delay [s]	31.11	23.87	20.11	30.85	23.26	20.39	31.21	17.01	16.50	31.83	22.27	22.29
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.26	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.81	3.73	0.68	4.63	2.55	1.01	3.76	0.23	0.38	3.10	13.62	15.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

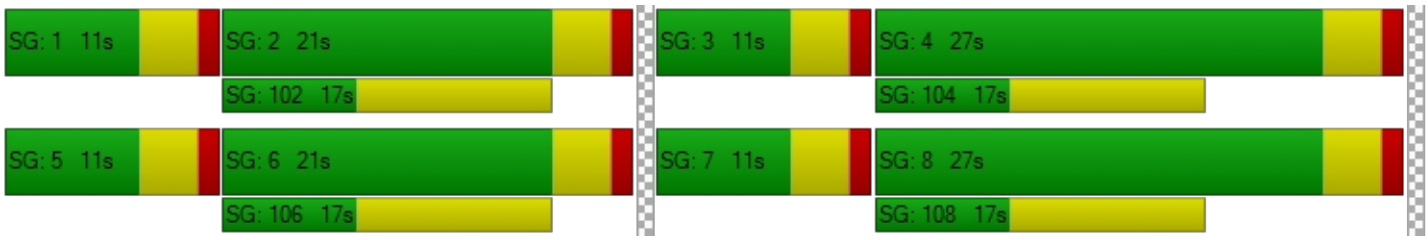
X, volume / capacity	0.89	0.73	0.13	0.81	0.64	0.18	0.56	0.42	0.35	0.45	0.93	0.93
d, Delay for Lane Group [s/veh]	38.92	27.60	20.79	35.48	25.81	21.40	34.96	17.24	16.88	34.93	35.89	37.59
Lane Group LOS	D	C	C	D	C	C	C	B	B	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.62	4.49	0.64	2.25	3.79	0.91	1.25	2.73	1.98	0.78	9.99	9.13
50th-Percentile Queue Length [ft/ln]	65.43	112.37	15.97	56.35	94.78	22.79	31.26	68.26	49.53	19.60	249.86	228.23
95th-Percentile Queue Length [veh/ln]	4.71	7.97	1.15	4.06	6.82	1.64	2.25	4.91	3.57	1.41	15.18	14.08
95th-Percentile Queue Length [ft/ln]	117.77	199.30	28.75	101.43	170.60	41.03	56.27	122.87	89.15	35.29	379.47	352.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.92	27.60	20.79	35.48	25.81	21.40	34.96	17.24	16.88	34.93	36.21	37.59
Movement LOS	D	C	C	D	C	C	C	B	B	C	D	D
d_A, Approach Delay [s/veh]	30.00			27.82			18.84			36.61		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	29.12											
Intersection LOS	C											
Intersection V/C	0.663											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	1050	54	152	1307	25	11	12	20	31	3	109
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	287	15	41	357	7	3	3	5	8	1	30
Total Analysis Volume [veh/h]	16	1146	59	166	1427	27	12	13	22	34	3	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	14	24	0	0	21	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	42	42	9	49	49	5	5	8	8
g / C, Green / Cycle	0.03	0.52	0.52	0.12	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.23	0.04	0.10	0.28	0.28	0.01	0.01	0.02	0.08
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	46	2558	798	202	2099	1092	101	88	177	159
d1, Uniform Delay [s]	38.27	11.96	9.53	34.52	8.35	8.35	36.09	36.09	32.86	34.99
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.35	0.57	0.18	8.10	0.72	1.37	1.26	1.46	0.52	7.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

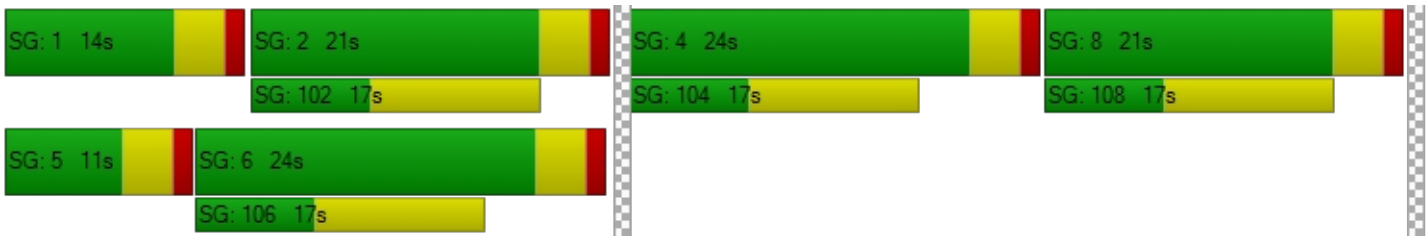
X, volume / capacity	0.34	0.45	0.07	0.82	0.46	0.46	0.25	0.25	0.19	0.77
d, Delay for Lane Group [s/veh]	42.62	12.53	9.71	42.62	9.07	9.72	37.34	37.56	33.38	42.59
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	3.42	0.44	3.41	3.55	3.89	0.50	0.44	0.60	2.54
50th-Percentile Queue Length [ft/ln]	8.52	85.53	11.11	85.17	88.65	97.23	12.49	11.11	15.05	63.42
95th-Percentile Queue Length [veh/ln]	0.61	6.16	0.80	6.13	6.38	7.00	0.90	0.80	1.08	4.57
95th-Percentile Queue Length [ft/ln]	15.33	153.96	20.00	153.30	159.56	175.01	22.48	20.00	27.08	114.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.62	12.53	9.71	42.62	9.28	9.72	37.34	37.34	37.56	33.38	42.59	42.59
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.79			12.71			37.44			40.58		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	14.55											
Intersection LOS	B											
Intersection V/C	0.447											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	25	0	0	0	8	0	5	5	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	622	82	274	707	175	183	130	18	152	214	202
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	160	21	70	182	45	47	33	5	39	55	52
Total Analysis Volume [veh/h]	47	640	84	282	727	180	188	134	19	156	220	208
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	23	23	7	26	26	8	12	12	7	11	11
g / C, Green / Cycle	0.06	0.35	0.35	0.11	0.40	0.40	0.12	0.18	0.18	0.11	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.05	0.08	0.15	0.12	0.11	0.04	0.01	0.09	0.12	0.14
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	110	1717	536	362	1936	604	212	620	277	197	310	263
d1, Uniform Delay [s]	29.40	15.85	14.58	28.33	14.03	13.54	28.14	22.78	22.17	28.12	25.48	25.89
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.63	0.62	0.62	3.67	0.56	1.26	11.55	0.17	0.10	6.95	3.00	5.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.37	0.16	0.78	0.38	0.30	0.89	0.22	0.07	0.79	0.71	0.79
d, Delay for Lane Group [s/veh]	32.03	16.47	15.20	32.01	14.59	14.80	39.69	22.96	22.27	35.07	28.49	31.14
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.72	2.05	0.80	2.05	2.06	1.62	3.23	0.78	0.22	2.52	3.12	3.13
50th-Percentile Queue Length [ft/ln]	17.91	51.22	19.98	51.28	51.59	40.48	80.74	19.59	5.50	63.01	78.04	78.35
95th-Percentile Queue Length [veh/ln]	1.29	3.69	1.44	3.69	3.71	2.91	5.81	1.41	0.40	4.54	5.62	5.64
95th-Percentile Queue Length [ft/ln]	32.23	92.20	35.97	92.30	92.86	72.86	145.33	35.25	9.90	113.43	140.47	141.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.03	16.47	15.20	32.01	14.59	14.80	39.69	22.96	22.27	35.07	28.49	31.14
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.28			18.75			32.15			31.19		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.46											
Intersection LOS	C											
Intersection V/C	0.491											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	28.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.142

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	24	0	26	41	0	0	0	0	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	9	24	0	26	41	468	36	10	458	42
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	2	6	0	7	11	122	9	3	120	11
Total Analysis Volume [veh/h]	15	0	9	25	0	27	43	489	38	10	478	44
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.02	0.14	0.00	0.05	0.04	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	27.73	25.08	12.93	28.51	26.75	14.29	8.56	0.00	0.00	8.46	0.00	0.00
Movement LOS	D	D	B	D	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.34	0.34	0.34	0.68	0.68	0.68	0.12	0.06	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	8.48	8.48	8.48	17.08	17.08	17.08	3.03	1.52	0.00	0.72	0.72	0.72
d_A, Approach Delay [s/veh]	22.18			21.13			0.65			0.16		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.77											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	4	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	318	12	74	307	20	21	81	25	6	68	24
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	91	3	21	88	6	6	23	7	2	19	7
Total Analysis Volume [veh/h]	64	363	14	85	351	23	24	93	29	7	78	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	555	602	607	557	604	613	567	565
Degree of Utilization, x	0.12	0.31	0.31	0.15	0.31	0.31	0.26	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	1.34	1.32	0.54	1.31	1.29	1.02	0.73
95th-Percentile Queue Length [ft]	9.73	33.38	32.97	13.41	32.84	32.19	25.54	18.32
Approach Delay [s/veh]	11.15			11.06			11.54	10.95
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.15							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.246

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	3	21	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	260	15	65	176	58	34	329	125	8	361	55
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	68	4	17	46	15	9	87	33	2	95	14
Total Analysis Volume [veh/h]	96	274	16	68	185	61	36	347	132	8	380	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	31	31	7	30	30	5	14	14	2	10	10
g / C, Green / Cycle	0.12	0.45	0.45	0.11	0.43	0.43	0.07	0.20	0.20	0.02	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.05	0.04	0.02	0.10	0.09	0.00	0.11	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	408	1520	679	356	1467	655	127	683	305	39	506	226
d1, Uniform Delay [s]	27.85	11.82	10.99	28.61	12.15	11.97	30.75	25.06	24.65	33.72	28.71	26.53
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.26	0.06	0.26	0.18	0.28	1.20	0.59	0.97	2.60	2.27	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.18	0.02	0.19	0.13	0.09	0.28	0.51	0.43	0.21	0.75	0.26
d, Delay for Lane Group [s/veh]	28.15	12.08	11.06	28.87	12.33	12.26	31.95	25.65	25.62	36.32	30.98	27.12
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.67	1.10	0.13	0.49	0.75	0.52	0.57	2.34	1.79	0.15	2.90	0.81
50th-Percentile Queue Length [ft/ln]	16.87	27.45	3.13	12.14	18.77	12.90	14.17	58.43	44.74	3.77	72.51	20.26
95th-Percentile Queue Length [veh/ln]	1.21	1.98	0.23	0.87	1.35	0.93	1.02	4.21	3.22	0.27	5.22	1.46
95th-Percentile Queue Length [ft/ln]	30.37	49.40	5.64	21.85	33.79	23.21	25.51	105.18	80.53	6.78	130.51	36.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.15	12.08	11.06	28.87	12.33	12.26	31.95	25.65	25.62	36.32	30.98	27.12
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.04			15.90			26.08			30.57		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.03											
Intersection LOS	C											
Intersection V/C	0.246											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.073

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	18	34	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	12	11	417	423	15
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	118	119	4
Total Analysis Volume [veh/h]	20	14	12	471	478	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	19.15	12.24	8.37	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.94	7.94	0.84	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.30		0.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.441

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	17	7	8	3	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	321	61	138	306	39	39	340	61	24	334	187
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	87	17	37	83	11	11	92	17	7	91	51
Total Analysis Volume [veh/h]	56	348	66	150	332	42	42	369	66	26	362	203
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	17	17	17	17	17	17
g / C, Green / Cycle	0.07	0.40	0.40	0.11	0.44	0.44	0.28	0.28	0.28	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.12	0.09	0.11	0.11	0.04	0.21	0.04	0.03	0.20	0.13
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1730	1036	1800	1530	1029	1800	1530
c, Capacity [veh/h]	125	727	687	194	799	768	192	510	434	187	510	434
d1, Uniform Delay [s]	26.72	12.11	12.14	25.92	10.39	10.40	27.15	19.43	16.14	26.98	19.34	17.81
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.49	1.01	1.09	6.39	0.70	0.74	0.57	1.96	0.16	0.34	1.84	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

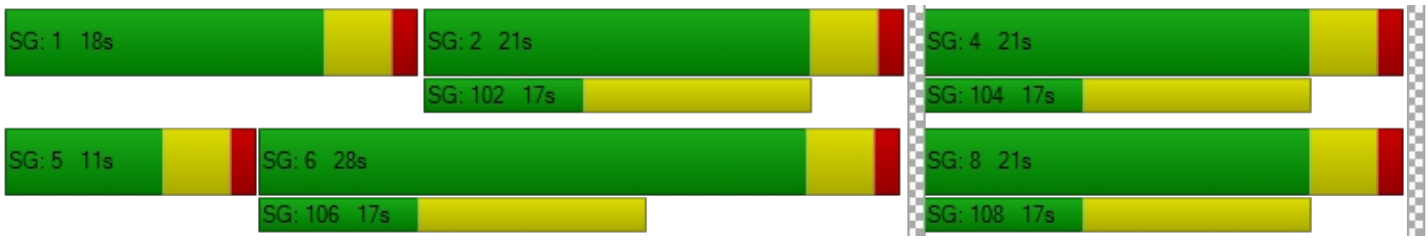
X, volume / capacity	0.45	0.29	0.29	0.77	0.24	0.24	0.22	0.72	0.15	0.14	0.71	0.47
d, Delay for Lane Group [s/veh]	29.21	13.12	13.23	32.31	11.09	11.14	27.72	21.39	16.30	27.32	21.17	18.60
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.76	1.67	1.62	2.16	1.32	1.28	0.54	4.07	0.58	0.33	3.96	2.01
50th-Percentile Queue Length [ft/ln]	19.09	41.87	40.56	53.92	32.93	32.11	13.61	101.72	14.57	8.32	99.03	50.16
95th-Percentile Queue Length [veh/ln]	1.37	3.01	2.92	3.88	2.37	2.31	0.98	7.32	1.05	0.60	7.13	3.61
95th-Percentile Queue Length [ft/ln]	34.36	75.37	73.01	97.05	59.27	57.79	24.49	183.10	26.22	14.97	178.26	90.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.21	13.17	13.23	32.31	11.11	11.14	27.72	21.39	16.30	27.32	21.17	18.60
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	15.09			17.18			21.25			20.56		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.61											
Intersection LOS	B											
Intersection V/C	0.441											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: C:\...\PM OYp_MD.pdf

Scenario 6 Opening Year (2022) With Project MD
1/17/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	8	3	0	13	0	0	0	8	4	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**280**	**862**	**47**	**255**	**761**	**66**	**70**	**487**	**179**	**44**	**667**	**350**	**4068**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	16	0	0	25	0	0	0	0	0	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**1050**	**54**	**152**	**1307**	**25**	**11**	**12**	**20**	**31**	**3**	**109**	**2789**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	8	25	0	0	0	8	0	5	5	16	67
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**46**	**622**	**82**	**274**	**707**	**175**	**183**	**130**	**18**	**152**	**214**	**202**	**2805**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	24	0	26	41	0	0	0	0	42	133
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**0**	**9**	**24**	**0**	**26**	**41**	**468**	**36**	**10**	**458**	**42**	**1128**

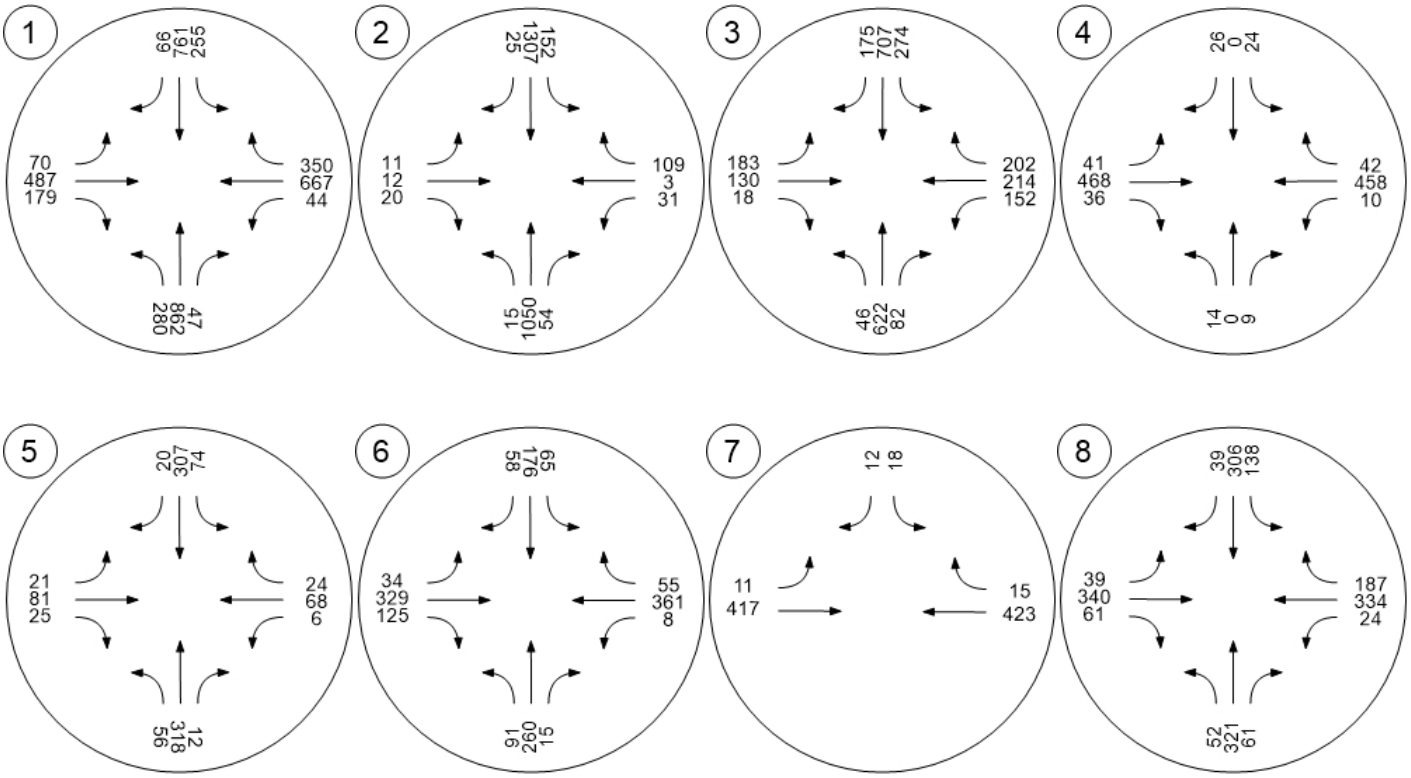
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	4	0	0	0	0	0	0	0	7
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**56**	**318**	**12**	**74**	**307**	**20**	**21**	**81**	**25**	**6**	**68**	**24**	**1012**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	4	3	21	0	0	38	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**91**	**260**	**15**	**65**	**176**	**58**	**34**	**329**	**125**	**8**	**361**	**55**	**1577**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	3	18	34	0	59
		Other	0	0	0	0	0	0	0
		Future Total	**18**	**12**	**11**	**417**	**423**	**15**	**896**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	17	7	8	3	0	13	0	52
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**52**	**321**	**61**	**138**	**306**	**39**	**39**	**340**	**61**	**24**	**334**	**187**	**1902**

Traffic Volume - Future Total Volume



TTM 37884

Vistro File: C:\...\AM - Mitigation.vistro

Scenario 6 Opening Year (2022) With Project MD - Improvements

Report File: C:\...\AM OYp_MD_Improvements.pdf

1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.543	22.4	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	SB Left	0.537	18.5	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.677	25.9	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.148	21.1	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.402	11.8	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.339	23.6	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.402	28.1	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.545	21.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	4	0	4	0	0	0	3	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	710	79	298	731	46	63	639	210	38	265	145
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	191	21	80	197	12	17	172	56	10	71	39
Total Analysis Volume [veh/h]	157	763	85	320	786	49	68	687	226	41	285	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	23	23	5	16	16	4	15	15
g / C, Green / Cycle	0.10	0.33	0.33	0.12	0.35	0.35	0.08	0.24	0.24	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.06	0.10	0.16	0.03	0.04	0.20	0.15	0.02	0.13	0.13
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	342	1616	504	412	1720	537	134	832	371	101	401	355
d1, Uniform Delay [s]	27.57	17.37	15.53	27.72	16.39	14.21	28.87	23.41	21.97	29.63	22.60	22.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.96	0.99	0.72	3.17	0.88	0.34	2.93	2.16	1.62	2.63	1.30	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.47	0.17	0.78	0.46	0.09	0.51	0.83	0.61	0.41	0.57	0.59
d, Delay for Lane Group [s/veh]	28.53	18.36	16.25	30.88	17.26	14.55	31.80	25.58	23.58	32.25	23.90	24.28
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.09	2.72	0.87	2.36	2.69	0.46	1.04	4.60	2.85	0.64	2.92	2.70
50th-Percentile Queue Length [ft/ln]	27.26	68.10	21.77	58.94	67.19	11.59	25.97	115.08	71.34	16.00	73.05	67.42
95th-Percentile Queue Length [veh/ln]	1.96	4.90	1.57	4.24	4.84	0.83	1.87	8.12	5.14	1.15	5.26	4.85
95th-Percentile Queue Length [ft/ln]	49.07	122.59	39.19	106.10	120.94	20.86	46.75	203.05	128.41	28.80	131.48	121.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.53	18.36	16.25	30.88	17.26	14.55	31.80	25.58	23.58	32.25	23.98	24.28
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.77			20.92			25.55			24.78		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.37											
Intersection LOS	C											
Intersection V/C	0.543											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	1031	41	97	985	54	9	6	14	48	10	263
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	272	11	26	260	14	2	2	4	13	3	70
Total Analysis Volume [veh/h]	27	1090	43	103	1041	57	10	6	15	51	11	278
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	34	34	6	37	37	3	3	16	16
g / C, Green / Cycle	0.04	0.45	0.45	0.08	0.49	0.49	0.04	0.04	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.03	0.06	0.21	0.21	0.01	0.01	0.03	0.19
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1753	1745	1530	1714	1539
c, Capacity [veh/h]	71	2189	683	143	1674	856	79	69	363	326
d1, Uniform Delay [s]	35.08	14.80	11.84	33.59	12.47	12.47	34.54	34.56	24.04	28.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.38	0.81	0.18	6.72	0.82	1.60	1.24	1.53	0.17	8.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

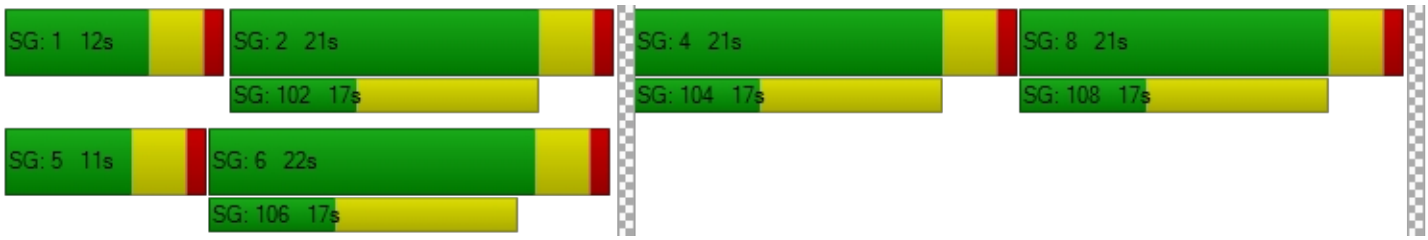
X, volume / capacity	0.38	0.50	0.06	0.72	0.43	0.43	0.20	0.22	0.14	0.89
d, Delay for Lane Group [s/veh]	38.46	15.61	12.02	40.31	13.29	14.07	35.78	36.10	24.22	36.77
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.50	3.67	0.37	1.97	3.45	3.72	0.31	0.29	0.71	5.39
50th-Percentile Queue Length [ft/ln]	12.61	91.66	9.13	49.28	86.24	92.94	7.65	7.27	17.66	134.78
95th-Percentile Queue Length [veh/ln]	0.91	6.60	0.66	3.55	6.21	6.69	0.55	0.52	1.27	9.20
95th-Percentile Queue Length [ft/ln]	22.70	164.99	16.43	88.71	155.24	167.30	13.76	13.09	31.79	229.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.46	15.61	12.02	40.31	13.53	14.07	35.78	35.78	36.10	24.22	36.77	36.77
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	16.01			15.85			35.93			34.88		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	18.51											
Intersection LOS	B											
Intersection V/C	0.537											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	8	0	0	0	3	0	8	8	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	497	17	92	505	334	260	248	43	77	320	210
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	128	4	24	130	86	67	64	11	20	82	54
Total Analysis Volume [veh/h]	61	512	18	95	520	344	268	255	44	79	330	216
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	17	26	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	6	22	22	13	22	22	6	15	15
g / C, Green / Cycle	0.07	0.29	0.29	0.09	0.31	0.31	0.18	0.31	0.31	0.08	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.01	0.03	0.11	0.22	0.16	0.07	0.03	0.05	0.18	0.14
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	123	1432	447	286	1503	469	312	1076	480	138	382	325
d1, Uniform Delay [s]	31.40	19.65	17.81	30.21	18.89	21.79	27.87	17.87	17.03	31.15	26.69	25.38
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.11	0.70	0.17	0.67	0.63	9.76	6.90	0.11	0.08	3.73	5.87	2.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

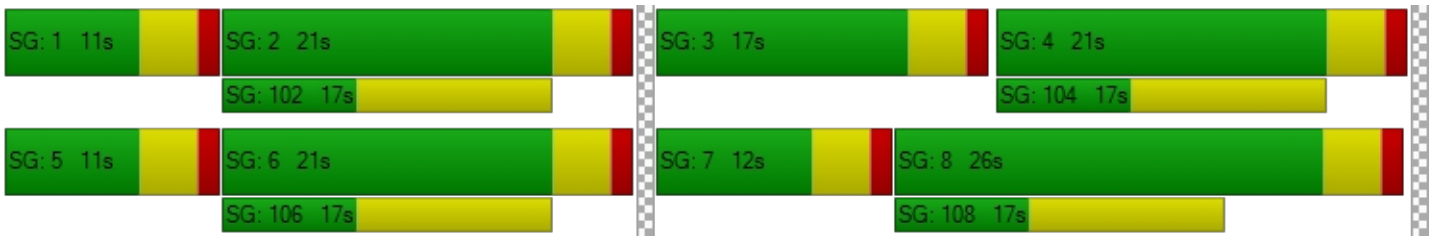
X, volume / capacity	0.50	0.36	0.04	0.33	0.35	0.73	0.86	0.24	0.09	0.57	0.86	0.66
d, Delay for Lane Group [s/veh]	34.51	20.35	17.98	30.89	19.53	31.55	34.77	17.98	17.11	34.88	32.55	27.71
Lane Group LOS	C	C	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.01	1.99	0.20	0.70	1.92	5.47	4.46	1.34	0.44	1.33	5.38	3.17
50th-Percentile Queue Length [ft/ln]	25.28	49.84	5.07	17.54	48.07	136.78	111.51	33.38	11.11	33.31	134.52	79.31
95th-Percentile Queue Length [veh/ln]	1.82	3.59	0.36	1.26	3.46	9.31	7.92	2.40	0.80	2.40	9.19	5.71
95th-Percentile Queue Length [ft/ln]	45.50	89.71	9.12	31.57	86.53	232.68	198.11	60.08	20.00	59.96	229.63	142.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.51	20.35	17.98	30.89	19.53	31.55	34.77	17.98	17.11	34.88	32.55	27.71
Movement LOS	C	C	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.74			24.96			25.85			31.17		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.87											
Intersection LOS	C											
Intersection V/C	0.677											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.148

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	39	14	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	2	37	0	39	14	312	6	8	573	12
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	1	10	0	10	4	82	2	2	151	3
Total Analysis Volume [veh/h]	12	0	2	39	0	41	15	330	6	8	606	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.15	0.00	0.06	0.02	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	16.89	20.42	9.66	21.07	22.33	12.62	8.77	0.00	0.00	7.94	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.77	0.77	0.77	0.05	0.00	0.00	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.16	3.16	3.16	19.20	19.20	19.20	1.18	0.00	0.00	0.49	0.00	0.00
d_A, Approach Delay [s/veh]	15.86			16.74			0.37			0.10		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.64											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.402

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	254	2	35	273	25	36	45	23	23	135	33
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	77	1	11	83	8	11	14	7	7	41	10
Total Analysis Volume [veh/h]	30	307	2	42	330	30	44	54	28	28	163	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	527	571	571	534	577	589	555	575
Degree of Utilization, x	0.06	0.27	0.27	0.08	0.31	0.31	0.23	0.40

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.18	1.09	1.09	0.26	1.32	1.29	0.87	1.93
95th-Percentile Queue Length [ft]	4.51	27.30	27.25	6.38	33.08	32.22	21.66	48.18
Approach Delay [s/veh]	11.21			11.44			11.37	13.40
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.77							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.339

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	4	33	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	172	11	44	168	99	65	208	56	21	455	51
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	50	3	13	49	29	19	61	16	6	133	15
Total Analysis Volume [veh/h]	84	201	13	51	196	116	76	243	65	25	532	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	27	27	6	25	25	8	17	17	4	13	13
g / C, Green / Cycle	0.12	0.38	0.38	0.09	0.35	0.35	0.11	0.25	0.25	0.06	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.01	0.02	0.06	0.08	0.04	0.07	0.04	0.01	0.16	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	389	1292	577	307	1208	539	192	842	376	98	654	292
d1, Uniform Delay [s]	28.11	14.48	13.75	29.41	15.63	15.94	28.97	21.51	20.87	31.68	27.22	23.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.26	0.07	0.25	0.29	0.91	1.31	0.19	0.22	1.35	2.51	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.16	0.02	0.17	0.16	0.22	0.40	0.29	0.17	0.25	0.81	0.21
d, Delay for Lane Group [s/veh]	28.39	14.74	13.82	29.66	15.92	16.86	30.28	21.69	21.08	33.03	29.74	24.28
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.59	0.93	0.12	0.37	0.96	1.24	1.15	1.45	0.76	0.41	4.00	0.78
50th-Percentile Queue Length [ft/ln]	14.84	23.32	3.01	9.28	24.06	31.01	28.63	36.19	19.06	10.17	99.98	19.39
95th-Percentile Queue Length [veh/ln]	1.07	1.68	0.22	0.67	1.73	2.23	2.06	2.61	1.37	0.73	7.20	1.40
95th-Percentile Queue Length [ft/ln]	26.71	41.98	5.42	16.70	43.30	55.81	51.54	65.14	34.32	18.31	179.96	34.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.39	14.74	13.82	29.66	15.92	16.86	30.28	21.69	21.08	33.03	29.74	24.28
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.55			18.15			23.29			29.34		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.56											
Intersection LOS	C											
Intersection V/C	0.339											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	28.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.402

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	29	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	14	37	253	452	155
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	4	11	73	130	45
Total Analysis Volume [veh/h]	106	16	43	291	520	178
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.40	0.03	0.05	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	28.09	21.67	9.16	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.08	2.08	0.15	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	52.00	52.00	3.72	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	27.24		1.18		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.22					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	5	14	11	4	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	238	21	142	316	48	45	241	65	25	527	182
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	63	6	37	83	13	12	63	17	7	139	48
Total Analysis Volume [veh/h]	63	251	22	149	333	51	47	254	68	26	555	192
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	7	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.36	0.36	0.11	0.39	0.39	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.08	0.09	0.11	0.11	0.05	0.14	0.04	0.02	0.31	0.13
s, saturation flow rate [veh/h]	1714	1800	1750	1714	1800	1718	867	1800	1530	1143	1800	1530
c, Capacity [veh/h]	134	640	622	192	701	669	121	600	510	337	600	510
d1, Uniform Delay [s]	26.54	13.52	13.54	25.99	12.58	12.60	30.08	15.58	14.00	20.19	19.34	15.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.56	0.77	0.80	6.63	0.99	1.05	2.04	0.48	0.12	0.10	9.85	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.21	0.22	0.78	0.28	0.28	0.39	0.42	0.13	0.08	0.93	0.38
d, Delay for Lane Group [s/veh]	29.10	14.29	14.34	32.62	13.57	13.65	32.12	16.05	14.12	20.28	29.20	15.76
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	1.17	1.16	2.16	1.59	1.55	0.67	2.25	0.54	0.27	7.53	1.68
50th-Percentile Queue Length [ft/ln]	21.36	29.31	28.97	53.90	39.86	38.68	16.86	56.22	13.47	6.69	188.19	41.89
95th-Percentile Queue Length [veh/ln]	1.54	2.11	2.09	3.88	2.87	2.78	1.21	4.05	0.97	0.48	12.03	3.02
95th-Percentile Queue Length [ft/ln]	38.45	52.76	52.15	97.02	71.74	69.62	30.35	101.19	24.24	12.05	300.67	75.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.10	14.31	14.34	32.62	13.60	13.65	32.12	16.05	14.12	20.28	29.20	15.76
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	17.09			18.92			17.74			25.56		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	20.95											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TTM 37884

Vistro File: C:\...\AM - Mitigation.vistro

Scenario 6 Opening Year (2022) With Project MD - Improvements

Report File: C:\...\AM OYp_MD_Improvements.pdf

1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	4	0	4	0	0	0	3	1	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**146**	**710**	**79**	**298**	**731**	**46**	**63**	**639**	**210**	**38**	**265**	**145**	**3370**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	23	0	0	8	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**26**	**1031**	**41**	**97**	**985**	**54**	**9**	**6**	**14**	**48**	**10**	**263**	**2584**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	3	8	0	0	0	3	0	8	8	23	53
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**497**	**17**	**92**	**505**	**334**	**260**	**248**	**43**	**77**	**320**	**210**	**2662**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	37	0	39	14	0	0	0	0	12	102
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**11**	**0**	**2**	**37**	**0**	**39**	**14**	**312**	**6**	**8**	**573**	**12**	**1014**

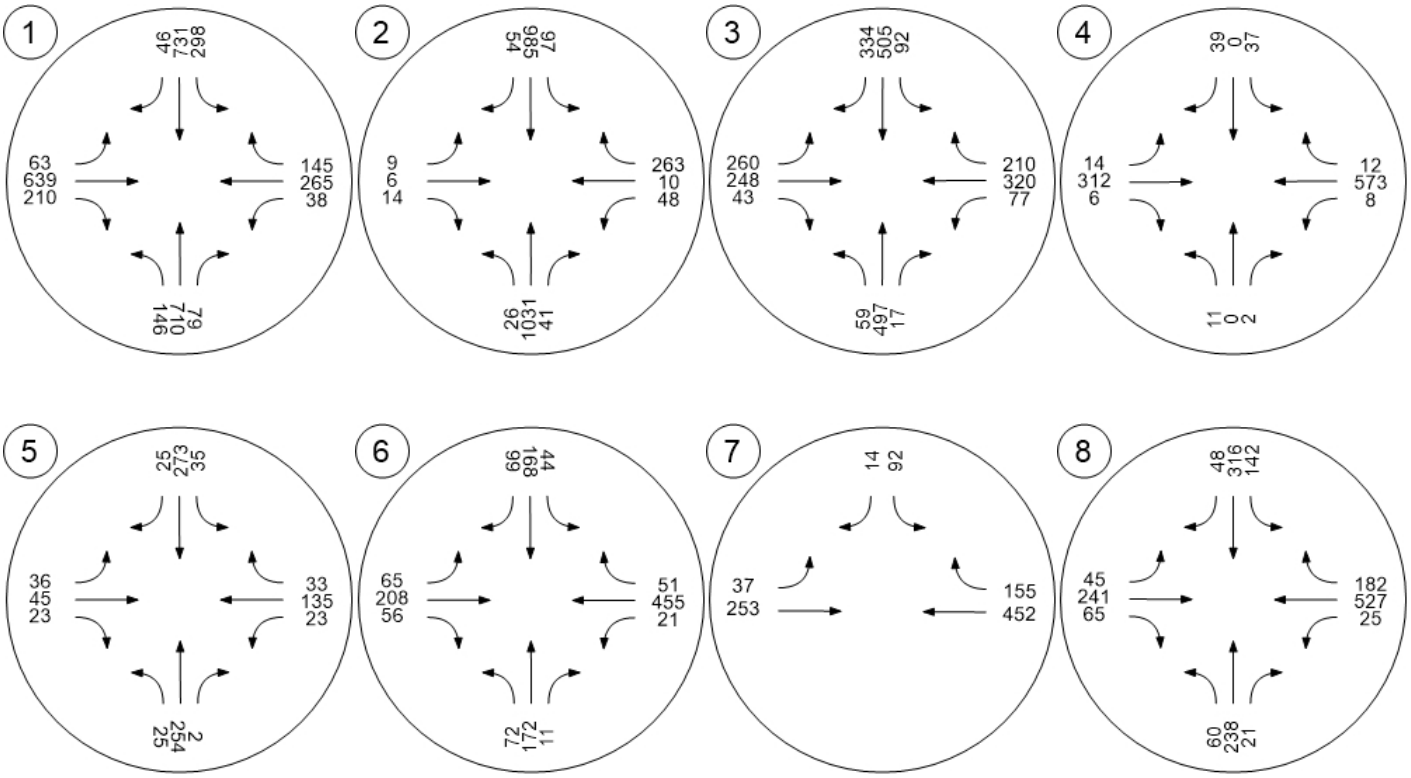
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	1	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**25**	**254**	**2**	**35**	**273**	**25**	**36**	**45**	**23**	**23**	**135**	**33**	**909**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	4	33	0	0	11	0	49
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**72**	**172**	**11**	**44**	**168**	**99**	**65**	**208**	**56**	**21**	**455**	**51**	**1422**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	4	29	10	0	44
		Other	0	0	0	0	0	0	0
		Future Total	**92**	**14**	**37**	**253**	**452**	**155**	**1003**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	5	14	11	4	0	4	0	39
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**60**	**238**	**21**	**142**	**316**	**48**	**45**	**241**	**65**	**25**	**527**	**182**	**1910**

Traffic Volume - Future Total Volume



TTM 37884

Vistro File: C:\...\PM - Mitigation.vistro

Scenario 6 Opening Year (2022) With Project MD - Improvements

Report File: C:\...\PM OYp_MD_Improvements.pdf

1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	NB Left	0.663	29.1	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.447	14.6	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.491	22.5	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.102	21.3	C
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	EB Thru	0.313	11.1	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.246	23.0	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.073	19.1	C
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.441	18.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	8	3	0	13	0	0	0	8	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	862	47	255	761	66	70	487	179	44	667	350
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	227	12	67	200	17	18	128	47	12	176	92
Total Analysis Volume [veh/h]	295	908	50	269	802	70	74	513	189	46	703	369
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	27	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	7	18	18	5	25	25	4	24	24
g / C, Green / Cycle	0.10	0.25	0.25	0.10	0.25	0.25	0.08	0.36	0.36	0.06	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.09	0.19	0.03	0.08	0.16	0.05	0.04	0.15	0.12	0.03	0.32	0.32
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1594
c, Capacity [veh/h]	333	1249	390	333	1249	390	131	1225	547	102	612	542
d1, Uniform Delay [s]	31.11	23.87	20.11	30.85	23.26	20.39	31.21	17.01	16.50	31.83	22.27	22.29
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.26	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.81	3.73	0.68	4.63	2.55	1.01	3.76	0.23	0.38	3.10	13.62	15.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

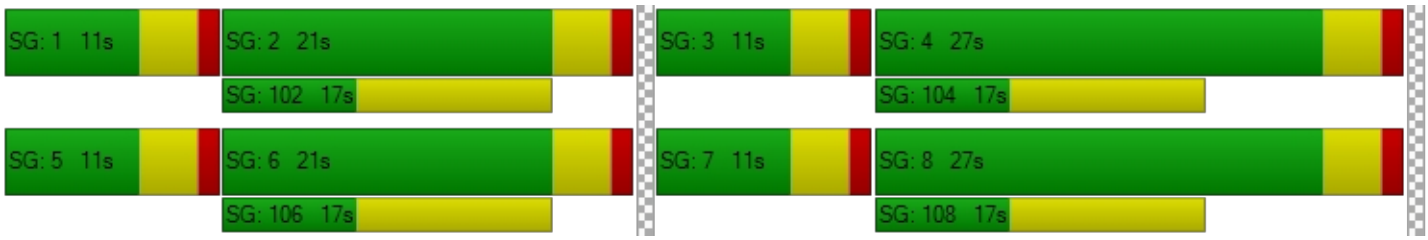
X, volume / capacity	0.89	0.73	0.13	0.81	0.64	0.18	0.56	0.42	0.35	0.45	0.93	0.93
d, Delay for Lane Group [s/veh]	38.92	27.60	20.79	35.48	25.81	21.40	34.96	17.24	16.88	34.93	35.89	37.59
Lane Group LOS	D	C	C	D	C	C	C	B	B	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.62	4.49	0.64	2.25	3.79	0.91	1.25	2.73	1.98	0.78	9.99	9.13
50th-Percentile Queue Length [ft/ln]	65.43	112.37	15.97	56.35	94.78	22.79	31.26	68.26	49.53	19.60	249.86	228.23
95th-Percentile Queue Length [veh/ln]	4.71	7.97	1.15	4.06	6.82	1.64	2.25	4.91	3.57	1.41	15.18	14.08
95th-Percentile Queue Length [ft/ln]	117.77	199.30	28.75	101.43	170.60	41.03	56.27	122.87	89.15	35.29	379.47	352.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.92	27.60	20.79	35.48	25.81	21.40	34.96	17.24	16.88	34.93	36.21	37.59
Movement LOS	D	C	C	D	C	C	C	B	B	C	D	D
d_A, Approach Delay [s/veh]	30.00			27.82			18.84			36.61		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	29.12											
Intersection LOS	C											
Intersection V/C	0.663											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	1050	54	152	1307	25	11	12	20	31	3	109
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	287	15	41	357	7	3	3	5	8	1	30
Total Analysis Volume [veh/h]	16	1146	59	166	1427	27	12	13	22	34	3	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	14	24	0	0	21	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	42	42	9	49	49	5	5	8	8
g / C, Green / Cycle	0.03	0.52	0.52	0.12	0.61	0.61	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.23	0.04	0.10	0.28	0.28	0.01	0.01	0.02	0.08
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1758	1530	1714	1536
c, Capacity [veh/h]	46	2558	798	202	2099	1092	101	88	177	159
d1, Uniform Delay [s]	38.27	11.96	9.53	34.52	8.35	8.35	36.09	36.09	32.86	34.99
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.35	0.57	0.18	8.10	0.72	1.37	1.26	1.46	0.52	7.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

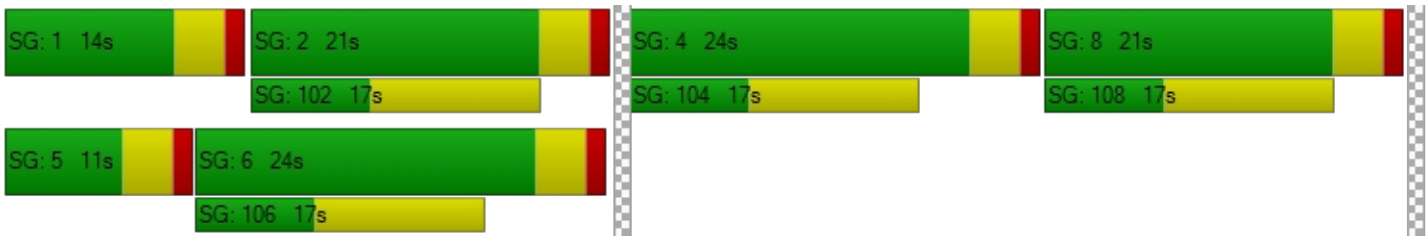
X, volume / capacity	0.34	0.45	0.07	0.82	0.46	0.46	0.25	0.25	0.19	0.77
d, Delay for Lane Group [s/veh]	42.62	12.53	9.71	42.62	9.07	9.72	37.34	37.56	33.38	42.59
Lane Group LOS	D	B	A	D	A	A	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	3.42	0.44	3.41	3.55	3.89	0.50	0.44	0.60	2.54
50th-Percentile Queue Length [ft/ln]	8.52	85.53	11.11	85.17	88.65	97.23	12.49	11.11	15.05	63.42
95th-Percentile Queue Length [veh/ln]	0.61	6.16	0.80	6.13	6.38	7.00	0.90	0.80	1.08	4.57
95th-Percentile Queue Length [ft/ln]	15.33	153.96	20.00	153.30	159.56	175.01	22.48	20.00	27.08	114.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.62	12.53	9.71	42.62	9.28	9.72	37.34	37.34	37.56	33.38	42.59	42.59
Movement LOS	D	B	A	D	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.79			12.71			37.44			40.58		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	14.55											
Intersection LOS	B											
Intersection V/C	0.447											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	25	0	0	0	8	0	5	5	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	622	82	274	707	175	183	130	18	152	214	202
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	160	21	70	182	45	47	33	5	39	55	52
Total Analysis Volume [veh/h]	47	640	84	282	727	180	188	134	19	156	220	208
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	21	0	12	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	23	23	7	26	26	8	12	12	7	11	11
g / C, Green / Cycle	0.06	0.35	0.35	0.11	0.40	0.40	0.12	0.18	0.18	0.11	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.05	0.08	0.15	0.12	0.11	0.04	0.01	0.09	0.12	0.14
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	110	1717	536	362	1936	604	212	620	277	197	310	263
d1, Uniform Delay [s]	29.40	15.85	14.58	28.33	14.03	13.54	28.14	22.78	22.17	28.12	25.48	25.89
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.63	0.62	0.62	3.67	0.56	1.26	11.55	0.17	0.10	6.95	3.00	5.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.37	0.16	0.78	0.38	0.30	0.89	0.22	0.07	0.79	0.71	0.79
d, Delay for Lane Group [s/veh]	32.03	16.47	15.20	32.01	14.59	14.80	39.69	22.96	22.27	35.07	28.49	31.14
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.72	2.05	0.80	2.05	2.06	1.62	3.23	0.78	0.22	2.52	3.12	3.13
50th-Percentile Queue Length [ft/ln]	17.91	51.22	19.98	51.28	51.59	40.48	80.74	19.59	5.50	63.01	78.04	78.35
95th-Percentile Queue Length [veh/ln]	1.29	3.69	1.44	3.69	3.71	2.91	5.81	1.41	0.40	4.54	5.62	5.64
95th-Percentile Queue Length [ft/ln]	32.23	92.20	35.97	92.30	92.86	72.86	145.33	35.25	9.90	113.43	140.47	141.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.03	16.47	15.20	32.01	14.59	14.80	39.69	22.96	22.27	35.07	28.49	31.14
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.28			18.75			32.15			31.19		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.46											
Intersection LOS	C											
Intersection V/C	0.491											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.102

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	24	0	26	41	0	0	0	0	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	9	24	0	26	41	468	36	10	458	42
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	2	6	0	7	11	122	9	3	120	11
Total Analysis Volume [veh/h]	15	0	9	25	0	27	43	489	38	10	478	44
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.10	0.00	0.04	0.04	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	21.09	24.52	10.78	21.28	25.06	11.38	8.56	0.00	0.00	8.46	0.00	0.00
Movement LOS	C	C	B	C	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.24	0.48	0.48	0.48	0.13	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.07	6.07	6.07	11.93	11.93	11.93	3.18	0.00	0.00	0.72	0.00	0.00
d_A, Approach Delay [s/veh]	17.22			16.14			0.65			0.16		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.45											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	4	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	318	12	74	307	20	21	81	25	6	68	24
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	91	3	21	88	6	6	23	7	2	19	7
Total Analysis Volume [veh/h]	64	363	14	85	351	23	24	93	29	7	78	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	555	602	607	557	604	613	567	565
Degree of Utilization, x	0.12	0.31	0.31	0.15	0.31	0.31	0.26	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	1.34	1.32	0.54	1.31	1.29	1.02	0.73
95th-Percentile Queue Length [ft]	9.73	33.38	32.97	13.41	32.84	32.19	25.54	18.32
Approach Delay [s/veh]	11.15			11.06			11.54	10.95
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	11.15							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.246

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	3	21	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	260	15	65	176	58	34	329	125	8	361	55
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	68	4	17	46	15	9	87	33	2	95	14
Total Analysis Volume [veh/h]	96	274	16	68	185	61	36	347	132	8	380	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	31	31	7	30	30	5	14	14	2	10	10
g / C, Green / Cycle	0.12	0.45	0.45	0.11	0.43	0.43	0.07	0.20	0.20	0.02	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.05	0.04	0.02	0.10	0.09	0.00	0.11	0.04
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	408	1520	679	356	1467	655	127	683	305	39	506	226
d1, Uniform Delay [s]	27.85	11.82	10.99	28.61	12.15	11.97	30.75	25.06	24.65	33.72	28.71	26.53
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.26	0.06	0.26	0.18	0.28	1.20	0.59	0.97	2.60	2.27	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.18	0.02	0.19	0.13	0.09	0.28	0.51	0.43	0.21	0.75	0.26
d, Delay for Lane Group [s/veh]	28.15	12.08	11.06	28.87	12.33	12.26	31.95	25.65	25.62	36.32	30.98	27.12
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.67	1.10	0.13	0.49	0.75	0.52	0.57	2.34	1.79	0.15	2.90	0.81
50th-Percentile Queue Length [ft/ln]	16.87	27.45	3.13	12.14	18.77	12.90	14.17	58.43	44.74	3.77	72.51	20.26
95th-Percentile Queue Length [veh/ln]	1.21	1.98	0.23	0.87	1.35	0.93	1.02	4.21	3.22	0.27	5.22	1.46
95th-Percentile Queue Length [ft/ln]	30.37	49.40	5.64	21.85	33.79	23.21	25.51	105.18	80.53	6.78	130.51	36.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.15	12.08	11.06	28.87	12.33	12.26	31.95	25.65	25.62	36.32	30.98	27.12
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.04			15.90			26.08			30.57		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.03											
Intersection LOS	C											
Intersection V/C	0.246											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.073

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	18	34	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	12	11	417	423	15
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	3	118	119	4
Total Analysis Volume [veh/h]	20	14	12	471	478	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	19.15	12.24	8.37	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.94	7.94	0.84	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.30		0.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.441

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	17	7	8	3	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	321	61	138	306	39	39	340	61	24	334	187
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	87	17	37	83	11	11	92	17	7	91	51
Total Analysis Volume [veh/h]	56	348	66	150	332	42	42	369	66	26	362	203
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	18	28	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	24	24	7	27	27	17	17	17	17	17	17
g / C, Green / Cycle	0.07	0.40	0.40	0.11	0.44	0.44	0.28	0.28	0.28	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.12	0.09	0.11	0.11	0.04	0.21	0.04	0.03	0.20	0.13
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1730	1036	1800	1530	1029	1800	1530
c, Capacity [veh/h]	125	727	687	194	799	768	192	510	434	187	510	434
d1, Uniform Delay [s]	26.72	12.11	12.14	25.92	10.39	10.40	27.15	19.43	16.14	26.98	19.34	17.81
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.49	1.01	1.09	6.39	0.70	0.74	0.57	1.96	0.16	0.34	1.84	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

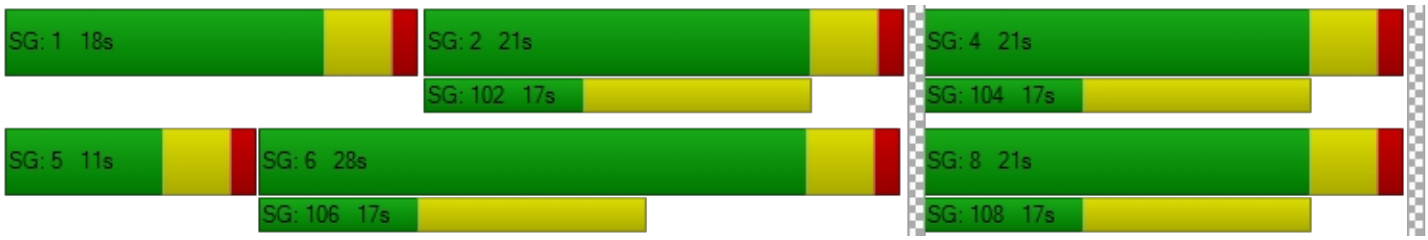
X, volume / capacity	0.45	0.29	0.29	0.77	0.24	0.24	0.22	0.72	0.15	0.14	0.71	0.47
d, Delay for Lane Group [s/veh]	29.21	13.12	13.23	32.31	11.09	11.14	27.72	21.39	16.30	27.32	21.17	18.60
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.76	1.67	1.62	2.16	1.32	1.28	0.54	4.07	0.58	0.33	3.96	2.01
50th-Percentile Queue Length [ft/ln]	19.09	41.87	40.56	53.92	32.93	32.11	13.61	101.72	14.57	8.32	99.03	50.16
95th-Percentile Queue Length [veh/ln]	1.37	3.01	2.92	3.88	2.37	2.31	0.98	7.32	1.05	0.60	7.13	3.61
95th-Percentile Queue Length [ft/ln]	34.36	75.37	73.01	97.05	59.27	57.79	24.49	183.10	26.22	14.97	178.26	90.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.21	13.17	13.23	32.31	11.11	11.14	27.72	21.39	16.30	27.32	21.17	18.60
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	15.09			17.18			21.25			20.56		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.61											
Intersection LOS	B											
Intersection V/C	0.441											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



TTM 37884

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Scenario 6 Opening Year (2022) With Project MD - Improvements

Report File: C:\...\PM OYp_MD_Improvements.pdf

1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	8	3	0	13	0	0	0	8	4	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**280**	**862**	**47**	**255**	**761**	**66**	**70**	**487**	**179**	**44**	**667**	**350**	**4068**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	16	0	0	25	0	0	0	0	0	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**1050**	**54**	**152**	**1307**	**25**	**11**	**12**	**20**	**31**	**3**	**109**	**2789**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	8	25	0	0	0	8	0	5	5	16	67
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**46**	**622**	**82**	**274**	**707**	**175**	**183**	**130**	**18**	**152**	**214**	**202**	**2805**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	24	0	26	41	0	0	0	0	42	133
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**0**	**9**	**24**	**0**	**26**	**41**	**468**	**36**	**10**	**458**	**42**	**1128**

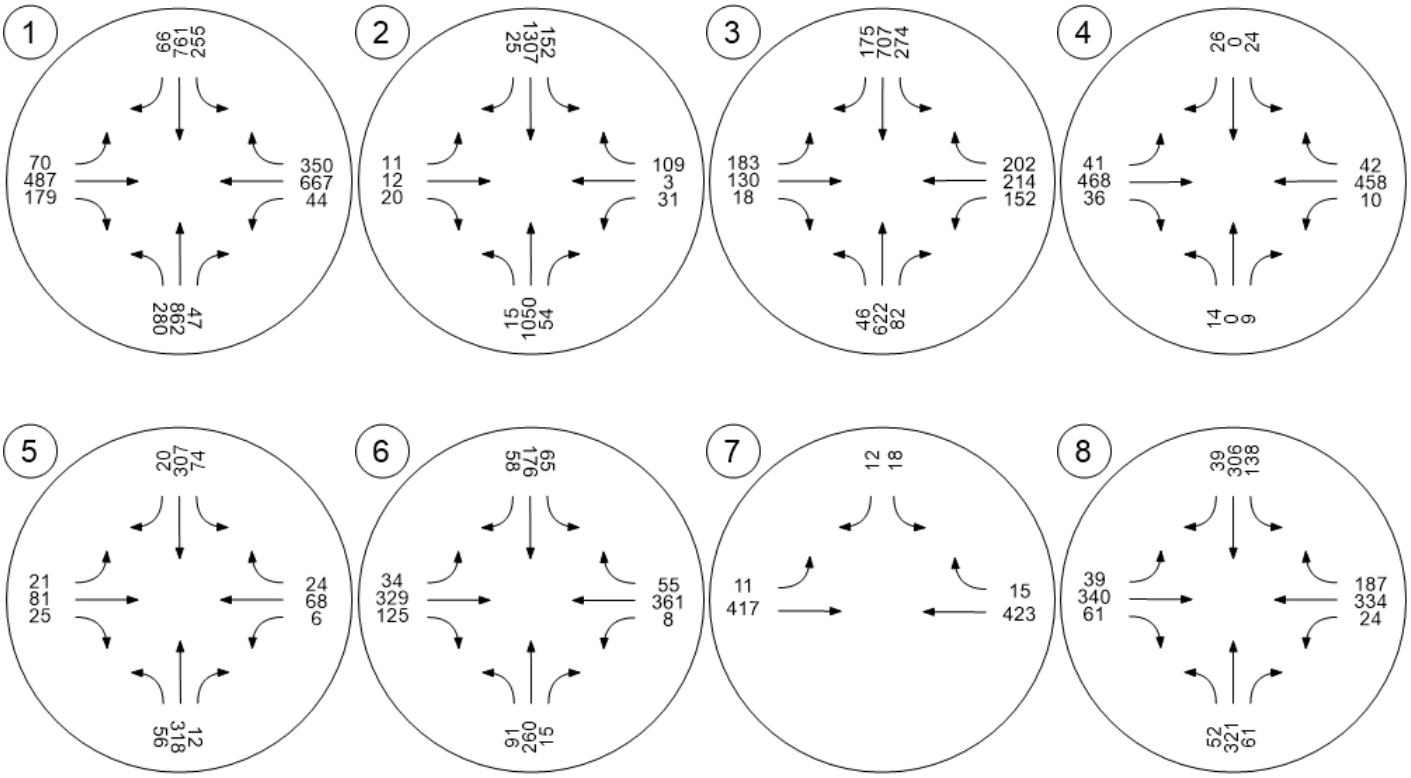
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	4	0	0	0	0	0	0	0	7
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**56**	**318**	**12**	**74**	**307**	**20**	**21**	**81**	**25**	**6**	**68**	**24**	**1012**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	4	3	21	0	0	38	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**91**	**260**	**15**	**65**	**176**	**58**	**34**	**329**	**125**	**8**	**361**	**55**	**1577**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	3	18	34	0	59
		Other	0	0	0	0	0	0	0
		Future Total	**18**	**12**	**11**	**417**	**423**	**15**	**896**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	17	7	8	3	0	13	0	52
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**52**	**321**	**61**	**138**	**306**	**39**	**39**	**340**	**61**	**24**	**334**	**187**	**1902**

Traffic Volume - Future Total Volume



Year 2040 Without Project

TTM 37884

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Scenario 7 Future Year 2040 Without Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.540	22.3	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	WB Right	0.713	27.0	C
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.891	43.0	D
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.089	26.9	D
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.612	16.5	C
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.447	24.3	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.818	87.9	F
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	NB Left	0.706	25.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	699	75	298	727	46	63	639	207	37	265	145
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	188	20	80	195	12	17	172	56	10	71	39
Total Analysis Volume [veh/h]	148	752	81	320	782	49	68	687	223	40	285	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	23	23	5	16	16	4	14	14
g / C, Green / Cycle	0.10	0.33	0.33	0.12	0.35	0.35	0.08	0.24	0.24	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.04	0.15	0.05	0.10	0.16	0.03	0.04	0.20	0.15	0.02	0.13	0.13
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	339	1620	506	412	1729	540	134	832	371	99	400	354
d1, Uniform Delay [s]	27.56	17.28	15.45	27.72	16.27	14.13	28.87	23.41	21.91	29.67	22.65	22.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.96	0.68	3.17	0.86	0.33	2.93	2.16	1.56	2.63	1.32	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.46	0.16	0.78	0.45	0.09	0.51	0.83	0.60	0.40	0.58	0.59
d, Delay for Lane Group [s/veh]	28.45	18.24	16.13	30.88	17.13	14.46	31.80	25.57	23.47	32.30	23.97	24.35
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.03	2.67	0.83	2.36	2.66	0.46	1.04	4.60	2.81	0.63	2.93	2.70
50th-Percentile Queue Length [ft/ln]	25.63	66.77	20.63	58.94	66.46	11.54	25.97	115.06	70.15	15.64	73.18	67.56
95th-Percentile Queue Length [veh/ln]	1.85	4.81	1.49	4.24	4.79	0.83	1.87	8.12	5.05	1.13	5.27	4.86
95th-Percentile Queue Length [ft/ln]	46.14	120.19	37.14	106.10	119.63	20.76	46.75	203.01	126.27	28.15	131.72	121.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.45	18.24	16.13	30.88	17.13	14.46	31.80	25.57	23.47	32.30	24.04	24.35
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.60			20.84			25.52			24.83		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.31											
Intersection LOS	C											
Intersection V/C	0.540											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1365	55	131	1323	73	12	7	19	66	13	356
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	361	15	35	350	19	3	2	5	17	3	94
Total Analysis Volume [veh/h]	38	1443	58	138	1399	77	13	7	20	70	14	376
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	30	30	8	34	34	4	4	22	22
g / C, Green / Cycle	0.05	0.37	0.37	0.10	0.42	0.42	0.05	0.05	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.02	0.29	0.04	0.08	0.28	0.29	0.01	0.01	0.04	0.25
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1743	1530	1714	1538
c, Capacity [veh/h]	88	1830	571	172	1446	740	93	81	469	421
d1, Uniform Delay [s]	36.89	22.32	16.37	35.30	18.74	18.74	36.37	36.43	22.06	28.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.27	3.53	0.36	8.37	2.54	4.90	1.15	1.55	0.15	15.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

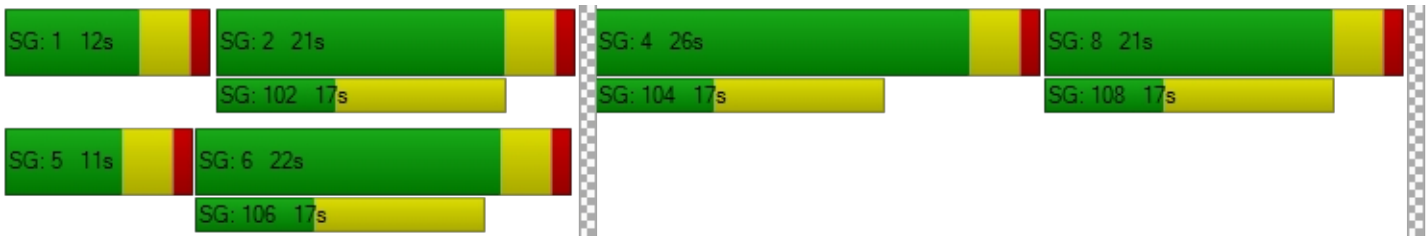
X, volume / capacity	0.43	0.79	0.10	0.80	0.68	0.68	0.22	0.25	0.15	0.93
d, Delay for Lane Group [s/veh]	40.16	25.86	16.73	43.67	21.28	23.64	37.52	37.98	22.21	44.02
Lane Group LOS	D	C	B	D	C	C	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	7.34	0.65	2.87	6.83	7.47	0.40	0.41	0.96	8.54
50th-Percentile Queue Length [ft/ln]	18.62	183.51	16.32	71.78	170.79	186.81	10.06	10.21	23.89	213.44
95th-Percentile Queue Length [veh/ln]	1.34	11.78	1.17	5.17	11.12	11.96	0.72	0.74	1.72	13.33
95th-Percentile Queue Length [ft/ln]	33.52	294.59	29.37	129.21	277.95	298.89	18.11	18.38	43.00	333.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.16	25.86	16.73	43.67	21.99	23.64	37.52	37.52	37.98	22.21	44.02	44.02
Movement LOS	D	C	B	D	C	C	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	25.87			23.92			37.75			40.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	27.01											
Intersection LOS	C											
Intersection V/C	0.713											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	43.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	673	19	113	684	453	352	332	58	94	423	253
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	173	5	29	176	117	91	85	15	24	109	65
Total Analysis Volume [veh/h]	82	693	20	116	704	467	363	342	60	97	436	261
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	26	0	14	28	0	21	27	0	18	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	26	26	7	26	26	17	31	31	6	20	20
g / C, Green / Cycle	0.07	0.30	0.30	0.08	0.31	0.31	0.20	0.36	0.36	0.07	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.01	0.03	0.14	0.31	0.21	0.10	0.04	0.06	0.24	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	121	1475	460	257	1506	470	343	1232	550	127	421	358
d1, Uniform Delay [s]	38.56	24.22	21.07	37.51	23.83	29.37	34.02	19.38	18.16	38.62	32.58	30.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.16	0.11	0.11	0.11	0.22	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.39	1.08	0.18	1.23	1.04	39.93	44.17	0.12	0.09	8.96	38.89	2.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

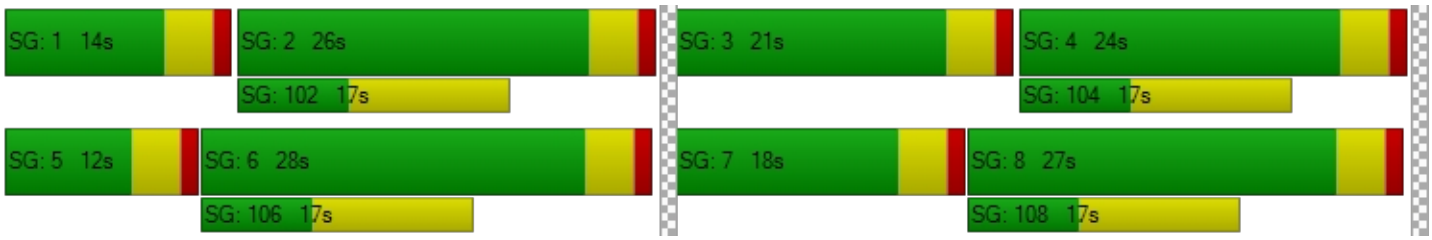
X, volume / capacity	0.68	0.47	0.04	0.45	0.47	0.99	1.06	0.28	0.11	0.76	1.04	0.73
d, Delay for Lane Group [s/veh]	44.95	25.29	21.25	38.74	24.87	69.30	78.19	19.50	18.25	47.59	71.48	32.97
Lane Group LOS	D	C	C	D	C	E	F	B	B	D	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.78	3.57	0.28	1.11	3.53	13.52	10.68	2.17	0.72	2.20	12.52	4.85
50th-Percentile Queue Length [ft/ln]	44.48	89.33	7.02	27.81	88.27	337.93	267.01	54.26	18.00	54.98	312.95	121.32
95th-Percentile Queue Length [veh/ln]	3.20	6.43	0.51	2.00	6.36	19.55	16.51	3.91	1.30	3.96	18.69	8.47
95th-Percentile Queue Length [ft/ln]	80.06	160.80	12.64	50.05	158.88	488.67	412.73	97.66	32.40	98.96	467.14	211.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.95	25.29	21.25	38.74	24.87	69.30	78.19	19.50	18.25	47.59	71.48	32.97
Movement LOS	D	C	C	D	C	E	F	B	B	D	F	C
d_A, Approach Delay [s/veh]	27.22			42.24			47.25			55.90		
Approach LOS	C			D			D			E		
d_I, Intersection Delay [s/veh]	42.99											
Intersection LOS	D											
Intersection V/C	0.891											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	10	2	284	5	7	521
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	3	423	7	10	776
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	1	112	2	3	205
Total Analysis Volume [veh/h]	16	3	447	7	11	820
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	26.94	12.69	0.00	0.00	8.25	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.70	7.70	0.00	0.00	0.68	0.68
d_A, Approach Delay [s/veh]	24.69		0.00		0.11	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	338	3	48	368	34	49	61	31	31	183	45
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	102	1	15	111	10	15	18	9	9	55	14
Total Analysis Volume [veh/h]	41	409	4	58	445	41	59	74	37	37	221	54
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	456	488	489	464	496	505	484	510
Degree of Utilization, x	0.09	0.42	0.42	0.13	0.49	0.48	0.35	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.29	2.08	2.07	0.43	2.65	2.58	1.56	4.06
95th-Percentile Queue Length [ft]	7.37	52.00	51.85	10.65	66.37	64.51	38.99	101.55
Approach Delay [s/veh]	15.01			15.97			14.39	20.56
Approach LOS	C			C			B	C
Intersection Delay [s/veh]	16.46							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	232	15	60	228	133	82	237	76	28	602	69
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	68	4	18	67	39	24	69	22	8	176	20
Total Analysis Volume [veh/h]	113	271	18	70	266	155	96	277	89	33	703	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	22	22	8	20	20	9	20	20	5	16	16
g / C, Green / Cycle	0.13	0.31	0.31	0.11	0.29	0.29	0.12	0.29	0.29	0.07	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.08	0.10	0.06	0.08	0.06	0.02	0.21	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	428	1056	471	360	987	440	210	980	437	120	800	357
d1, Uniform Delay [s]	27.62	18.26	17.02	28.53	19.31	19.82	28.66	19.49	19.02	30.98	25.97	21.80
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.59	0.15	0.26	0.67	2.20	1.55	0.16	0.23	1.22	3.32	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.26	0.04	0.19	0.27	0.35	0.46	0.28	0.20	0.27	0.88	0.23
d, Delay for Lane Group [s/veh]	27.95	18.85	17.17	28.79	19.99	22.03	30.21	19.64	19.25	32.20	29.29	22.11
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	1.51	0.20	0.50	1.55	2.01	1.44	1.54	0.98	0.52	5.28	0.98
50th-Percentile Queue Length [ft/ln]	19.78	37.79	4.91	12.48	38.67	50.23	36.12	38.52	24.51	13.09	132.06	24.55
95th-Percentile Queue Length [veh/ln]	1.42	2.72	0.35	0.90	2.78	3.62	2.60	2.77	1.76	0.94	9.05	1.77
95th-Percentile Queue Length [ft/ln]	35.61	68.03	8.83	22.46	69.60	90.42	65.01	69.33	44.12	23.56	226.29	44.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.95	18.85	17.17	28.79	19.99	22.03	30.21	19.64	19.25	32.20	29.29	22.11
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.33			21.89			21.76			28.69		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.32											
Intersection LOS	C											
Intersection V/C	0.447											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	87.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.818

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	18	45	304	599	210
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	5	13	87	172	60
Total Analysis Volume [veh/h]	144	21	52	349	689	241
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.82	0.05	0.07	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	87.92	76.86	10.20	0.00	0.00	0.00
Movement LOS	F	F	B	A	A	A
95th-Percentile Queue Length [veh/ln]	6.51	6.51	0.22	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	162.63	162.63	5.62	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	86.51		1.32		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	9.90					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	322	28	192	428	58	42	311	82	34	708	246
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	85	7	51	113	15	11	82	22	9	186	65
Total Analysis Volume [veh/h]	84	339	29	202	451	61	44	327	86	36	745	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	17	21	0	17	21	0	0	42	0	0	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	19	19	11	24	24	38	38	38	38	38	38
g / C, Green / Cycle	0.07	0.24	0.24	0.14	0.30	0.30	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.10	0.12	0.15	0.15	0.06	0.18	0.06	0.03	0.41	0.17
s, saturation flow rate [veh/h]	1714	1800	1751	1714	1800	1726	727	1800	1530	1070	1800	1530
c, Capacity [veh/h]	129	425	413	240	542	520	141	853	725	441	853	725
d1, Uniform Delay [s]	36.01	26.06	26.09	33.55	22.88	22.89	36.88	13.54	11.74	18.69	18.91	13.34
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.37	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.44	3.25	3.39	7.68	3.05	3.19	1.25	0.28	0.07	0.08	9.17	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

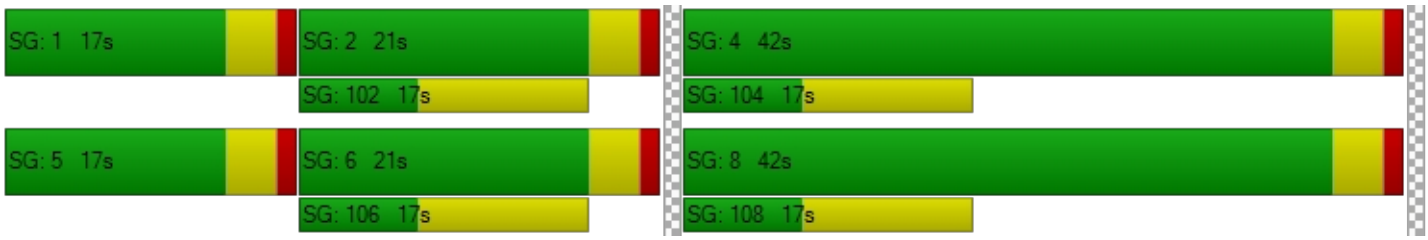
X, volume / capacity	0.65	0.44	0.44	0.84	0.48	0.48	0.31	0.38	0.12	0.08	0.87	0.36
d, Delay for Lane Group [s/veh]	41.45	29.32	29.48	41.23	25.93	26.09	38.13	13.83	11.81	18.77	28.08	13.64
Lane Group LOS	D	C	C	D	C	C	D	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.68	3.12	3.07	4.02	4.05	3.91	0.84	3.22	0.73	0.42	12.20	2.52
50th-Percentile Queue Length [ft/ln]	41.93	77.97	76.82	100.59	101.13	97.79	20.99	80.52	18.34	10.61	305.10	63.02
95th-Percentile Queue Length [veh/ln]	3.02	5.61	5.53	7.24	7.28	7.04	1.51	5.80	1.32	0.76	17.93	4.54
95th-Percentile Queue Length [ft/ln]	75.48	140.35	138.27	181.07	182.04	176.03	37.78	144.93	33.02	19.09	448.33	113.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	29.39	29.48	41.23	26.00	26.09	38.13	13.83	11.81	18.77	28.08	13.64
Movement LOS	D	C	C	D	C	C	D	B	B	B	C	B
d_A, Approach Delay [s/veh]	31.64			30.31			15.79			24.16		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	25.64											
Intersection LOS	C											
Intersection V/C	0.706											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 7 Future Year 2040 Without Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**138**	**699**	**75**	**298**	**727**	**46**	**63**	**639**	**207**	**37**	**265**	**145**	**3339**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**36**	**1365**	**55**	**131**	**1323**	**73**	**12**	**7**	**19**	**66**	**13**	**356**	**3456**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**673**	**19**	**113**	**684**	**453**	**352**	**332**	**58**	**94**	**423**	**253**	**3534**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	2	284	5	7	521	829
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**15**	**3**	**423**	**7**	**10**	**776**	**1234**

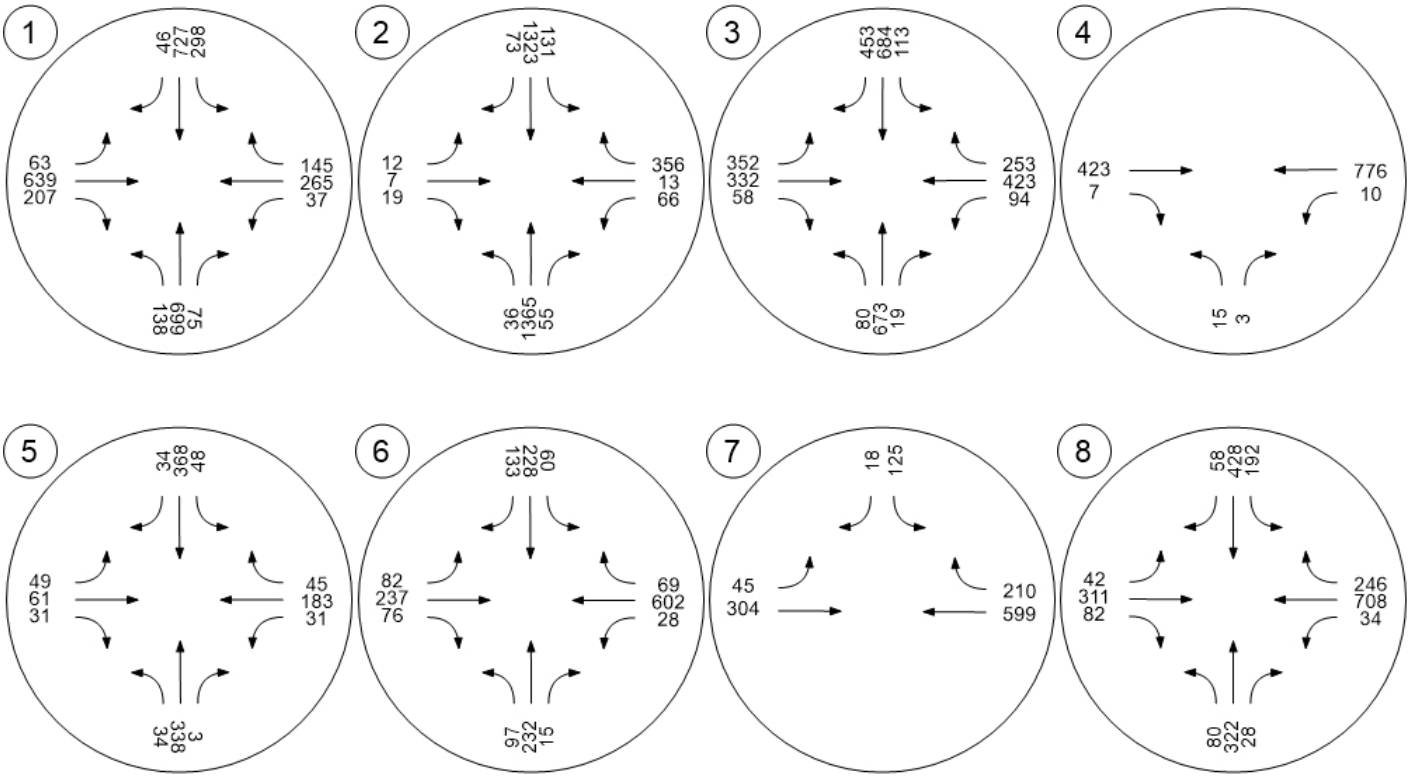
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**34**	**338**	**3**	**48**	**368**	**34**	**49**	**61**	**31**	**31**	**183**	**45**	**1225**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**97**	**232**	**15**	**60**	**228**	**133**	**82**	**237**	**76**	**28**	**602**	**69**	**1859**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**125**	**18**	**45**	**304**	**599**	**210**	**1301**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**322**	**28**	**192**	**428**	**58**	**42**	**311**	**82**	**34**	**708**	**246**	**2531**

Traffic Volume - Future Total Volume



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Scenario 7 Future Year 2040 Without Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.883	53.8	D
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.600	19.6	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.634	27.2	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.120	29.4	D
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	NB Thru	0.475	14.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.315	23.1	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.140	26.6	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.589	20.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	53.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	373	1156	60	346	1013	89	95	660	231	54	903	474
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	305	16	91	267	23	25	174	61	14	238	125
Total Analysis Volume [veh/h]	393	1218	63	365	1067	94	100	695	243	57	952	499
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	32	0	16	30	0	11	50	0	12	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	28	28	12	26	26	7	48	48	6	47	47
g / C, Green / Cycle	0.13	0.26	0.26	0.11	0.24	0.24	0.06	0.44	0.44	0.05	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.04	0.11	0.22	0.06	0.06	0.20	0.16	0.03	0.42	0.43
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1598
c, Capacity [veh/h]	424	1254	391	363	1165	364	109	1498	669	90	767	681
d1, Uniform Delay [s]	47.50	40.53	31.77	49.00	40.86	34.06	51.21	21.86	20.72	51.07	31.25	31.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.48
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.16	19.38	0.88	23.12	12.61	1.72	23.88	0.22	0.33	7.15	27.86	39.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.97	0.16	1.00	0.92	0.26	0.92	0.46	0.36	0.63	0.99	1.02
d, Delay for Lane Group [s/veh]	56.66	59.91	32.65	72.12	53.47	35.78	75.09	22.08	21.05	58.22	59.12	70.82
Lane Group LOS	E	E	C	F	D	D	E	C	C	E	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.69	12.62	1.36	5.99	10.34	2.15	3.38	5.98	3.99	1.68	24.13	23.96
50th-Percentile Queue Length [ft/ln]	142.15	315.46	33.92	149.73	258.45	53.79	84.59	149.53	99.86	41.89	603.34	599.10
95th-Percentile Queue Length [veh/ln]	9.60	18.44	2.44	10.02	15.61	3.87	6.09	9.99	7.19	3.02	32.19	32.49
95th-Percentile Queue Length [ft/ln]	239.92	461.10	61.06	250.54	390.28	96.81	152.27	249.80	179.76	75.40	804.76	812.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.66	59.91	32.65	72.12	53.47	35.78	75.09	22.08	21.05	58.22	61.52	70.82
Movement LOS	E	E	C	F	D	D	E	C	C	E	E	E
d_A, Approach Delay [s/veh]	58.12			56.84			26.95			64.47		
Approach LOS	E			E			C			E		
d_I, Intersection Delay [s/veh]	53.82											
Intersection LOS	D											
Intersection V/C	0.883											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	1401	73	206	1736	34	15	16	27	42	4	148
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	382	20	56	474	9	4	4	7	11	1	40
Total Analysis Volume [veh/h]	23	1529	80	225	1895	37	16	17	29	46	4	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	17	27	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	36	36	12	45	45	5	5	11	11
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.57	0.57	0.07	0.07	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.31	0.05	0.13	0.37	0.37	0.02	0.02	0.03	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1782	1757	1530	1714	1536
c, Capacity [veh/h]	62	2194	684	263	1936	1007	116	101	228	205
d1, Uniform Delay [s]	37.74	17.78	12.91	33.05	12.05	12.07	35.59	35.60	30.92	33.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	1.86	0.35	7.83	1.75	3.36	1.32	1.53	0.43	7.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.70	0.12	0.86	0.66	0.66	0.28	0.29	0.20	0.81
d, Delay for Lane Group [s/veh]	41.45	19.64	13.26	40.87	13.80	15.43	36.91	37.13	31.35	41.23
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	6.48	0.76	4.53	6.61	7.35	0.65	0.58	0.78	3.39
50th-Percentile Queue Length [ft/ln]	11.75	162.11	19.05	113.16	165.32	183.76	16.29	14.46	19.52	84.85
95th-Percentile Queue Length [veh/ln]	0.85	10.66	1.37	8.02	10.83	11.80	1.17	1.04	1.41	6.11
95th-Percentile Queue Length [ft/ln]	21.14	266.51	34.29	200.40	270.76	294.91	29.33	26.04	35.14	152.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	19.64	13.26	40.87	14.34	15.43	36.91	36.91	37.13	31.35	41.23	41.23
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	19.63			17.13			37.01			39.09		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.58											
Intersection LOS	B											
Intersection V/C	0.600											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	842	100	337	958	237	247	165	24	200	283	252
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	217	26	87	246	61	64	42	6	51	73	65
Total Analysis Volume [veh/h]	65	866	103	347	986	244	254	170	25	206	291	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	16	21	0	16	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	20	20	8	23	23	12	16	16	10	14	14
g / C, Green / Cycle	0.07	0.29	0.29	0.11	0.33	0.33	0.17	0.23	0.23	0.15	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.07	0.10	0.20	0.16	0.15	0.05	0.02	0.12	0.16	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	126	1398	436	383	1600	499	295	774	346	251	361	307
d1, Uniform Delay [s]	31.33	21.81	19.25	30.71	19.95	18.96	28.29	22.15	21.40	29.10	26.80	27.04
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	2.07	1.27	8.17	1.79	3.39	7.40	0.14	0.09	6.60	4.30	6.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

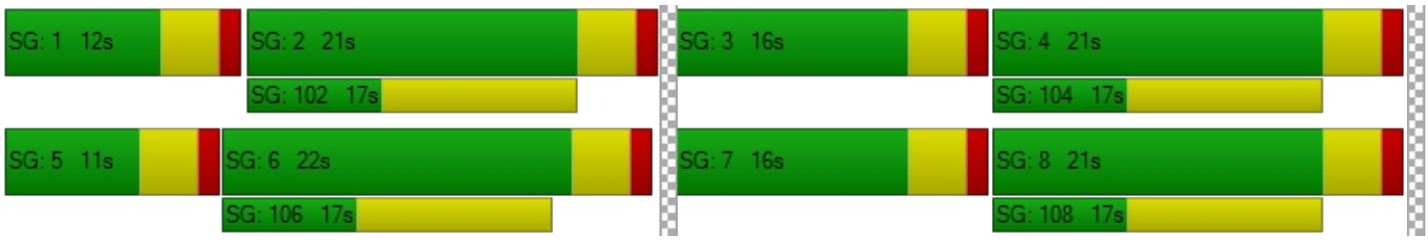
X, volume / capacity	0.51	0.62	0.24	0.91	0.62	0.49	0.86	0.22	0.07	0.82	0.81	0.84
d, Delay for Lane Group [s/veh]	34.54	23.88	20.52	38.88	21.74	22.36	35.68	22.29	21.49	35.70	31.09	33.38
Lane Group LOS	C	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.08	3.82	1.27	3.00	4.00	3.11	4.29	1.02	0.29	3.52	4.60	4.29
50th-Percentile Queue Length [ft/ln]	26.92	95.49	31.82	74.91	100.07	77.71	107.15	25.58	7.37	88.09	115.02	107.14
95th-Percentile Queue Length [veh/ln]	1.94	6.88	2.29	5.39	7.20	5.60	7.68	1.84	0.53	6.34	8.12	7.68
95th-Percentile Queue Length [ft/ln]	48.46	171.89	57.27	134.84	180.12	139.88	192.03	46.05	13.27	158.57	202.96	192.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.54	23.88	20.52	38.88	21.74	22.36	35.68	22.29	21.49	35.70	31.09	33.38
Movement LOS	C	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.22			25.61			29.82			33.13		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.22											
Intersection LOS	C											
Intersection V/C	0.634											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	29.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.120

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	13	8	425	33	9	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	12	633	49	13	620
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	165	13	3	162
Total Analysis Volume [veh/h]	20	13	661	51	14	647
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.03	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	29.37	15.51	0.00	0.00	9.08	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.51	0.51	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	12.74	12.74	0.00	0.00	1.10	1.10
d_A, Approach Delay [s/veh]	23.91		0.00		0.19	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	426	16	100	410	27	28	110	34	7	92	33
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	122	5	29	117	8	8	31	10	2	26	9
Total Analysis Volume [veh/h]	87	487	18	114	469	31	32	126	39	8	105	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	494	531	536	496	533	541	514	510
Degree of Utilization, x	0.18	0.48	0.47	0.23	0.47	0.46	0.38	0.30

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.63	2.53	2.50	0.88	2.47	2.42	1.79	1.23
95th-Percentile Queue Length [ft]	15.84	63.32	62.52	21.99	61.84	60.51	44.66	30.71
Approach Delay [s/veh]	14.81			14.56			14.31	13.00
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	14.47							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.315

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	352	21	88	238	73	42	417	170	10	438	75
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	93	6	23	63	19	11	110	45	3	115	20
Total Analysis Volume [veh/h]	131	371	22	93	251	77	44	439	179	11	462	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	28	28	8	27	27	6	16	16	2	12	12
g / C, Green / Cycle	0.13	0.40	0.40	0.12	0.38	0.38	0.08	0.23	0.23	0.03	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.04	0.11	0.01	0.03	0.07	0.05	0.03	0.13	0.12	0.01	0.13	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	443	1351	603	403	1310	585	145	779	348	51	591	264
d1, Uniform Delay [s]	27.49	14.46	13.08	27.91	14.46	14.11	30.22	24.05	23.75	33.29	27.80	25.36
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.50	0.11	0.29	0.33	0.47	1.17	0.64	1.18	2.11	2.30	0.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.27	0.04	0.23	0.19	0.13	0.30	0.56	0.51	0.22	0.78	0.30
d, Delay for Lane Group [s/veh]	27.86	14.97	13.20	28.20	14.79	14.58	31.39	24.69	24.93	35.40	30.10	25.99
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.92	1.75	0.20	0.65	1.17	0.74	0.68	2.91	2.40	0.20	3.48	1.07
50th-Percentile Queue Length [ft/ln]	22.91	43.82	4.92	16.36	29.26	18.52	17.05	72.66	59.96	4.93	87.06	26.84
95th-Percentile Queue Length [veh/ln]	1.65	3.16	0.35	1.18	2.11	1.33	1.23	5.23	4.32	0.36	6.27	1.93
95th-Percentile Queue Length [ft/ln]	41.24	78.88	8.86	29.45	52.66	33.34	30.69	130.80	107.93	8.88	156.71	48.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.86	14.97	13.20	28.20	14.79	14.58	31.39	24.69	24.93	35.40	30.10	25.99
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	18.11			17.71			25.20			29.62		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.15											
Intersection LOS	C											
Intersection V/C	0.315											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.140

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	10	10	541	527	21
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	3	3	153	149	6
Total Analysis Volume [veh/h]	27	11	11	611	595	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.02	0.01	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	26.58	15.14	8.75	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.57	0.57	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	14.16	14.16	0.86	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	23.27		0.15		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.77					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	435	82	186	414	30	43	450	79	33	435	253
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	118	22	50	112	8	12	122	21	9	118	69
Total Analysis Volume [veh/h]	72	472	89	202	449	33	47	488	86	36	472	274
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	16	26	0	0	23	0	0	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	20	20	9	24	24	19	19	19	19	19	19
g / C, Green / Cycle	0.08	0.34	0.34	0.15	0.40	0.40	0.32	0.32	0.32	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.12	0.14	0.14	0.05	0.27	0.06	0.04	0.26	0.18
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1757	936	1800	1530	922	1800	1530
c, Capacity [veh/h]	143	607	574	251	721	703	155	570	484	144	570	484
d1, Uniform Delay [s]	26.36	15.71	15.73	24.84	12.51	12.52	29.21	19.28	14.89	29.53	19.05	17.12
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.70	2.63	2.82	5.94	1.27	1.31	1.08	4.10	0.17	0.89	3.17	1.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.47	0.48	0.80	0.34	0.34	0.30	0.86	0.18	0.25	0.83	0.57
d, Delay for Lane Group [s/veh]	29.06	18.35	18.55	30.78	13.78	13.82	30.29	23.38	15.06	30.42	22.21	18.16
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.97	2.93	2.81	2.81	2.00	1.97	0.65	5.75	0.72	0.50	5.37	2.68
50th-Percentile Queue Length [ft/ln]	24.33	73.13	70.36	70.28	50.07	49.15	16.32	143.66	17.93	12.50	134.29	67.03
95th-Percentile Queue Length [veh/ln]	1.75	5.27	5.07	5.06	3.60	3.54	1.18	9.68	1.29	0.90	9.17	4.83
95th-Percentile Queue Length [ft/ln]	43.79	131.64	126.65	126.51	90.12	88.47	29.38	241.94	32.27	22.50	229.31	120.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.06	18.43	18.55	30.78	13.80	13.82	30.29	23.38	15.06	30.42	22.21	18.16
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	19.65			18.81			22.75			21.17		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	20.59											
Intersection LOS	C											
Intersection V/C	0.589											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Scenario 7 Future Year 2040 Without Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**373**	**1156**	**60**	**346**	**1013**	**89**	**95**	**660**	**231**	**54**	**903**	**474**	**5454**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**21**	**1401**	**73**	**206**	**1736**	**34**	**15**	**16**	**27**	**42**	**4**	**148**	**3723**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**63**	**842**	**100**	**337**	**958**	**237**	**247**	**165**	**24**	**200**	**283**	**252**	**3708**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	8	425	33	9	416	904
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**19**	**12**	**633**	**49**	**13**	**620**	**1346**

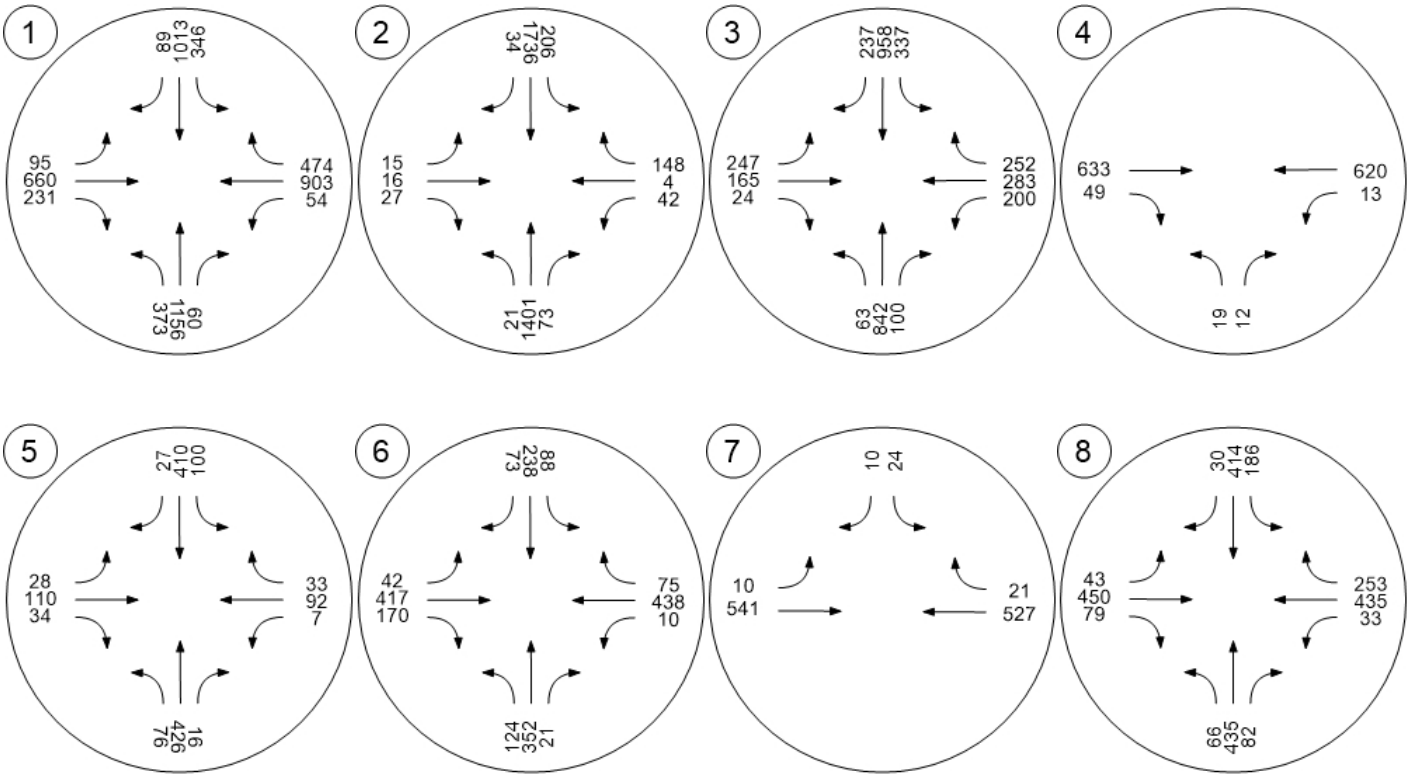
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**76**	**426**	**16**	**100**	**410**	**27**	**28**	**110**	**34**	**7**	**92**	**33**	**1359**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**124**	**352**	**21**	**88**	**238**	**73**	**42**	**417**	**170**	**10**	**438**	**75**	**2048**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**24**	**10**	**10**	**541**	**527**	**21**	**1133**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**66**	**435**	**82**	**186**	**414**	**30**	**43**	**450**	**79**	**33**	**435**	**253**	**2506**

Traffic Volume - Future Total Volume



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Scenario 7 Future Year 2040 Without Project - Improvements

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1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	WB Left	0.540	22.3	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	WB Right	0.713	27.0	C
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.891	43.0	D
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.089	26.9	D
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.612	16.5	C
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.447	24.3	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.736	9.7	A
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	NB Left	0.706	25.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	699	75	298	727	46	63	639	207	37	265	145
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	188	20	80	195	12	17	172	56	10	71	39
Total Analysis Volume [veh/h]	148	752	81	320	782	49	68	687	223	40	285	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	23	23	5	16	16	4	14	14
g / C, Green / Cycle	0.10	0.33	0.33	0.12	0.35	0.35	0.08	0.24	0.24	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.04	0.15	0.05	0.10	0.16	0.03	0.04	0.20	0.15	0.02	0.13	0.13
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1592
c, Capacity [veh/h]	339	1620	506	412	1729	540	134	832	371	99	400	354
d1, Uniform Delay [s]	27.56	17.28	15.45	27.72	16.27	14.13	28.87	23.41	21.91	29.67	22.65	22.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.96	0.68	3.17	0.86	0.33	2.93	2.16	1.56	2.63	1.32	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.46	0.16	0.78	0.45	0.09	0.51	0.83	0.60	0.40	0.58	0.59
d, Delay for Lane Group [s/veh]	28.45	18.24	16.13	30.88	17.13	14.46	31.80	25.57	23.47	32.30	23.97	24.35
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.03	2.67	0.83	2.36	2.66	0.46	1.04	4.60	2.81	0.63	2.93	2.70
50th-Percentile Queue Length [ft/ln]	25.63	66.77	20.63	58.94	66.46	11.54	25.97	115.06	70.15	15.64	73.18	67.56
95th-Percentile Queue Length [veh/ln]	1.85	4.81	1.49	4.24	4.79	0.83	1.87	8.12	5.05	1.13	5.27	4.86
95th-Percentile Queue Length [ft/ln]	46.14	120.19	37.14	106.10	119.63	20.76	46.75	203.01	126.27	28.15	131.72	121.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.45	18.24	16.13	30.88	17.13	14.46	31.80	25.57	23.47	32.30	24.04	24.35
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.60			20.84			25.52			24.83		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.31											
Intersection LOS	C											
Intersection V/C	0.540											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1365	55	131	1323	73	12	7	19	66	13	356
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	361	15	35	350	19	3	2	5	17	3	94
Total Analysis Volume [veh/h]	38	1443	58	138	1399	77	13	7	20	70	14	376
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	30	30	8	34	34	4	4	22	22
g / C, Green / Cycle	0.05	0.37	0.37	0.10	0.42	0.42	0.05	0.05	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.02	0.29	0.04	0.08	0.28	0.29	0.01	0.01	0.04	0.25
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1752	1743	1530	1714	1538
c, Capacity [veh/h]	88	1830	571	172	1446	740	93	81	469	421
d1, Uniform Delay [s]	36.89	22.32	16.37	35.30	18.74	18.74	36.37	36.43	22.06	28.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.27	3.53	0.36	8.37	2.54	4.90	1.15	1.55	0.15	15.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

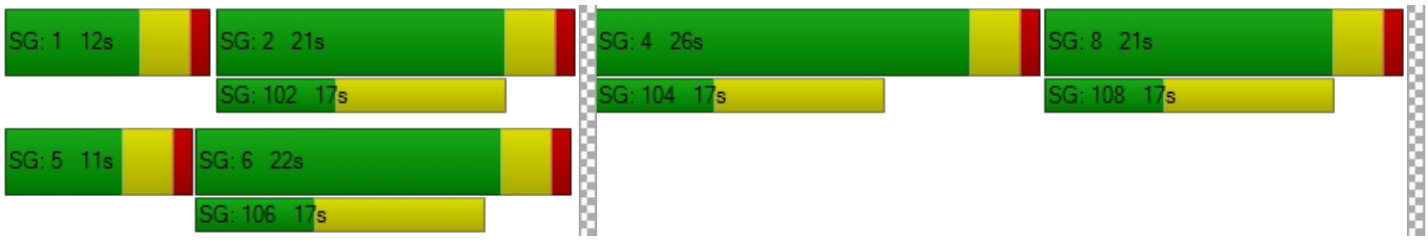
X, volume / capacity	0.43	0.79	0.10	0.80	0.68	0.68	0.22	0.25	0.15	0.93
d, Delay for Lane Group [s/veh]	40.16	25.86	16.73	43.67	21.28	23.64	37.52	37.98	22.21	44.02
Lane Group LOS	D	C	B	D	C	C	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	7.34	0.65	2.87	6.83	7.47	0.40	0.41	0.96	8.54
50th-Percentile Queue Length [ft/ln]	18.62	183.51	16.32	71.78	170.79	186.81	10.06	10.21	23.89	213.44
95th-Percentile Queue Length [veh/ln]	1.34	11.78	1.17	5.17	11.12	11.96	0.72	0.74	1.72	13.33
95th-Percentile Queue Length [ft/ln]	33.52	294.59	29.37	129.21	277.95	298.89	18.11	18.38	43.00	333.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.16	25.86	16.73	43.67	21.99	23.64	37.52	37.52	37.98	22.21	44.02	44.02
Movement LOS	D	C	B	D	C	C	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	25.87			23.92			37.75			40.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	27.01											
Intersection LOS	C											
Intersection V/C	0.713											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	43.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	673	19	113	684	453	352	332	58	94	423	253
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	173	5	29	176	117	91	85	15	24	109	65
Total Analysis Volume [veh/h]	82	693	20	116	704	467	363	342	60	97	436	261
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	26	0	14	28	0	21	27	0	18	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	26	26	7	26	26	17	31	31	6	20	20
g / C, Green / Cycle	0.07	0.30	0.30	0.08	0.31	0.31	0.20	0.36	0.36	0.07	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.01	0.03	0.14	0.31	0.21	0.10	0.04	0.06	0.24	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	121	1475	460	257	1506	470	343	1232	550	127	421	358
d1, Uniform Delay [s]	38.56	24.22	21.07	37.51	23.83	29.37	34.02	19.38	18.16	38.62	32.58	30.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.16	0.11	0.11	0.11	0.22	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.39	1.08	0.18	1.23	1.04	39.93	44.17	0.12	0.09	8.96	38.89	2.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

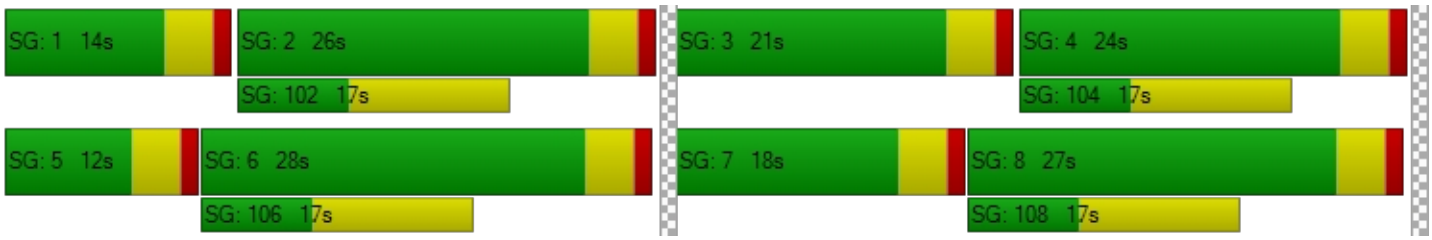
X, volume / capacity	0.68	0.47	0.04	0.45	0.47	0.99	1.06	0.28	0.11	0.76	1.04	0.73
d, Delay for Lane Group [s/veh]	44.95	25.29	21.25	38.74	24.87	69.30	78.19	19.50	18.25	47.59	71.48	32.97
Lane Group LOS	D	C	C	D	C	E	F	B	B	D	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.78	3.57	0.28	1.11	3.53	13.52	10.68	2.17	0.72	2.20	12.52	4.85
50th-Percentile Queue Length [ft/ln]	44.48	89.33	7.02	27.81	88.27	337.93	267.01	54.26	18.00	54.98	312.95	121.32
95th-Percentile Queue Length [veh/ln]	3.20	6.43	0.51	2.00	6.36	19.55	16.51	3.91	1.30	3.96	18.69	8.47
95th-Percentile Queue Length [ft/ln]	80.06	160.80	12.64	50.05	158.88	488.67	412.73	97.66	32.40	98.96	467.14	211.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.95	25.29	21.25	38.74	24.87	69.30	78.19	19.50	18.25	47.59	71.48	32.97
Movement LOS	D	C	C	D	C	E	F	B	B	D	F	C
d_A, Approach Delay [s/veh]	27.22			42.24			47.25			55.90		
Approach LOS	C			D			D			E		
d_I, Intersection Delay [s/veh]	42.99											
Intersection LOS	D											
Intersection V/C	0.891											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	10	2	284	5	7	521
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	3	423	7	10	776
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	1	112	2	3	205
Total Analysis Volume [veh/h]	16	3	447	7	11	820
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	26.94	12.69	0.00	0.00	8.25	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.70	7.70	0.00	0.00	0.68	0.68
d_A, Approach Delay [s/veh]	24.69		0.00		0.11	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	338	3	48	368	34	49	61	31	31	183	45
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	102	1	15	111	10	15	18	9	9	55	14
Total Analysis Volume [veh/h]	41	409	4	58	445	41	59	74	37	37	221	54
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	456	488	489	464	496	505	484	510
Degree of Utilization, x	0.09	0.42	0.42	0.13	0.49	0.48	0.35	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.29	2.08	2.07	0.43	2.65	2.58	1.56	4.06
95th-Percentile Queue Length [ft]	7.37	52.00	51.85	10.65	66.37	64.51	38.99	101.55
Approach Delay [s/veh]	15.01			15.97			14.39	20.56
Approach LOS	C			C			B	C
Intersection Delay [s/veh]	16.46							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	232	15	60	228	133	82	237	76	28	602	69
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	68	4	18	67	39	24	69	22	8	176	20
Total Analysis Volume [veh/h]	113	271	18	70	266	155	96	277	89	33	703	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	22	22	8	20	20	9	20	20	5	16	16
g / C, Green / Cycle	0.13	0.31	0.31	0.11	0.29	0.29	0.12	0.29	0.29	0.07	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.08	0.10	0.06	0.08	0.06	0.02	0.21	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	428	1056	471	360	987	440	210	980	437	120	800	357
d1, Uniform Delay [s]	27.62	18.26	17.02	28.53	19.31	19.82	28.66	19.49	19.02	30.98	25.97	21.80
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.59	0.15	0.26	0.67	2.20	1.55	0.16	0.23	1.22	3.32	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.26	0.04	0.19	0.27	0.35	0.46	0.28	0.20	0.27	0.88	0.23
d, Delay for Lane Group [s/veh]	27.95	18.85	17.17	28.79	19.99	22.03	30.21	19.64	19.25	32.20	29.29	22.11
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	1.51	0.20	0.50	1.55	2.01	1.44	1.54	0.98	0.52	5.28	0.98
50th-Percentile Queue Length [ft/ln]	19.78	37.79	4.91	12.48	38.67	50.23	36.12	38.52	24.51	13.09	132.06	24.55
95th-Percentile Queue Length [veh/ln]	1.42	2.72	0.35	0.90	2.78	3.62	2.60	2.77	1.76	0.94	9.05	1.77
95th-Percentile Queue Length [ft/ln]	35.61	68.03	8.83	22.46	69.60	90.42	65.01	69.33	44.12	23.56	226.29	44.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.95	18.85	17.17	28.79	19.99	22.03	30.21	19.64	19.25	32.20	29.29	22.11
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.33			21.89			21.76			28.69		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.32											
Intersection LOS	C											
Intersection V/C	0.447											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	18	45	304	599	210
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	5	13	87	172	60
Total Analysis Volume [veh/h]	144	21	52	349	689	241
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	49	0	0	11	11	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C
C, Cycle Length [s]	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	44	44	44
g / C, Green / Cycle	0.13	0.74	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.10	0.09	0.19	0.54
s, saturation flow rate [veh/h]	1688	611	1800	1721
c, Capacity [veh/h]	215	352	1331	1273
d1, Uniform Delay [s]	25.34	12.65	2.53	4.44
k, delay calibration	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.62	0.89	0.48	3.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

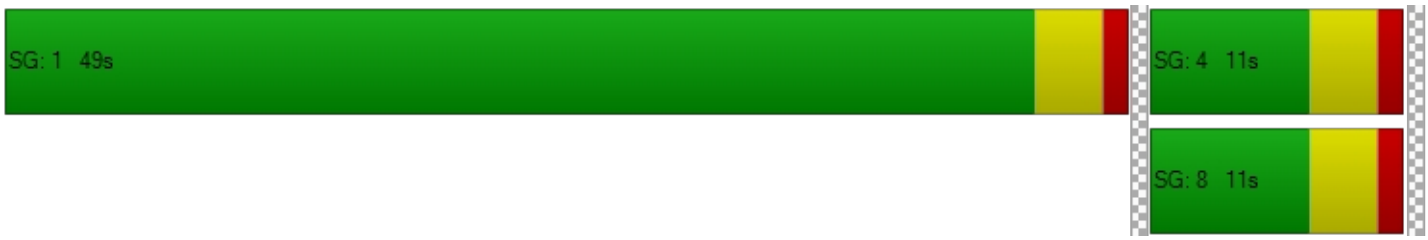
X, volume / capacity	0.77	0.15	0.26	0.73
d, Delay for Lane Group [s/veh]	30.96	13.53	3.01	8.17
Lane Group LOS	C	B	A	A
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.35	0.47	0.51	2.87
50th-Percentile Queue Length [ft/ln]	58.70	11.79	12.74	71.70
95th-Percentile Queue Length [veh/ln]	4.23	0.85	0.92	5.16
95th-Percentile Queue Length [ft/ln]	105.66	21.22	22.92	129.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.96	30.96	13.53	3.01	8.17	8.17
Movement LOS	C	C	B	A	A	A
d_A, Approach Delay [s/veh]	30.96		4.38		8.17	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	9.66					
Intersection LOS	A					
Intersection V/C	0.736					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	322	28	192	428	58	42	311	82	34	708	246
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	85	7	51	113	15	11	82	22	9	186	65
Total Analysis Volume [veh/h]	84	339	29	202	451	61	44	327	86	36	745	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	17	21	0	17	21	0	0	42	0	0	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	19	19	11	24	24	38	38	38	38	38	38
g / C, Green / Cycle	0.07	0.24	0.24	0.14	0.30	0.30	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.10	0.12	0.15	0.15	0.06	0.18	0.06	0.03	0.41	0.17
s, saturation flow rate [veh/h]	1714	1800	1751	1714	1800	1726	727	1800	1530	1070	1800	1530
c, Capacity [veh/h]	129	425	413	240	542	520	141	853	725	441	853	725
d1, Uniform Delay [s]	36.01	26.06	26.09	33.55	22.88	22.89	36.88	13.54	11.74	18.69	18.91	13.34
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.37	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.44	3.25	3.39	7.68	3.05	3.19	1.25	0.28	0.07	0.08	9.17	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

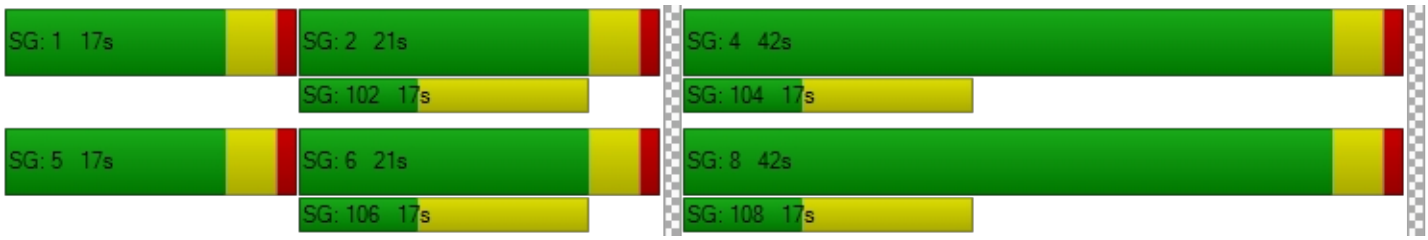
X, volume / capacity	0.65	0.44	0.44	0.84	0.48	0.48	0.31	0.38	0.12	0.08	0.87	0.36
d, Delay for Lane Group [s/veh]	41.45	29.32	29.48	41.23	25.93	26.09	38.13	13.83	11.81	18.77	28.08	13.64
Lane Group LOS	D	C	C	D	C	C	D	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.68	3.12	3.07	4.02	4.05	3.91	0.84	3.22	0.73	0.42	12.20	2.52
50th-Percentile Queue Length [ft/ln]	41.93	77.97	76.82	100.59	101.13	97.79	20.99	80.52	18.34	10.61	305.10	63.02
95th-Percentile Queue Length [veh/ln]	3.02	5.61	5.53	7.24	7.28	7.04	1.51	5.80	1.32	0.76	17.93	4.54
95th-Percentile Queue Length [ft/ln]	75.48	140.35	138.27	181.07	182.04	176.03	37.78	144.93	33.02	19.09	448.33	113.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	29.39	29.48	41.23	26.00	26.09	38.13	13.83	11.81	18.77	28.08	13.64
Movement LOS	D	C	C	D	C	C	D	B	B	B	C	B
d_A, Approach Delay [s/veh]	31.64			30.31			15.79			24.16		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	25.64											
Intersection LOS	C											
Intersection V/C	0.706											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 7 Future Year 2040 Without Project - Improvements

Report File: C:\...\AM FY_Improvements.pdf

1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**138**	**699**	**75**	**298**	**727**	**46**	**63**	**639**	**207**	**37**	**265**	**145**	**3339**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**36**	**1365**	**55**	**131**	**1323**	**73**	**12**	**7**	**19**	**66**	**13**	**356**	**3456**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**673**	**19**	**113**	**684**	**453**	**352**	**332**	**58**	**94**	**423**	**253**	**3534**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	2	284	5	7	521	829
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**15**	**3**	**423**	**7**	**10**	**776**	**1234**

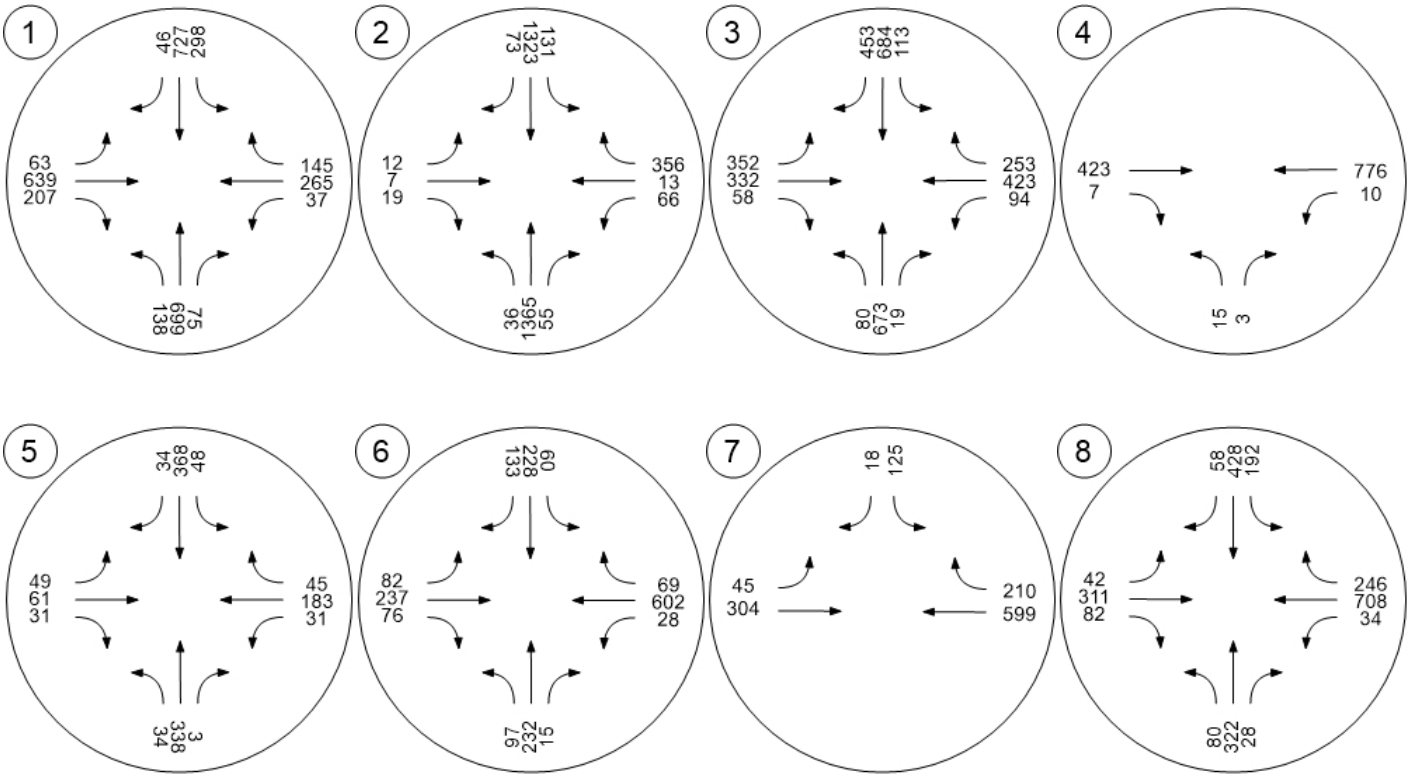
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**34**	**338**	**3**	**48**	**368**	**34**	**49**	**61**	**31**	**31**	**183**	**45**	**1225**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**97**	**232**	**15**	**60**	**228**	**133**	**82**	**237**	**76**	**28**	**602**	**69**	**1859**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**125**	**18**	**45**	**304**	**599**	**210**	**1301**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**322**	**28**	**192**	**428**	**58**	**42**	**311**	**82**	**34**	**708**	**246**	**2531**

Traffic Volume - Future Total Volume



TTM 37884

Vistro File: C:\...\PM - Mitigation.vistro
Report File: C:\...\PM FY_Improvements.pdf

Scenario 7 Future Year 2040 Without Project
1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.883	53.8	D
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.600	19.6	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.634	27.2	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.120	29.4	D
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	NB Thru	0.475	14.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.315	23.1	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.413	3.3	A
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.589	20.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	53.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	373	1156	60	346	1013	89	95	660	231	54	903	474
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	305	16	91	267	23	25	174	61	14	238	125
Total Analysis Volume [veh/h]	393	1218	63	365	1067	94	100	695	243	57	952	499
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	32	0	16	30	0	11	50	0	12	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	28	28	12	26	26	7	48	48	6	47	47
g / C, Green / Cycle	0.13	0.26	0.26	0.11	0.24	0.24	0.06	0.44	0.44	0.05	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.04	0.11	0.22	0.06	0.06	0.20	0.16	0.03	0.42	0.43
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1598
c, Capacity [veh/h]	424	1254	391	363	1165	364	109	1498	669	90	767	681
d1, Uniform Delay [s]	47.50	40.53	31.77	49.00	40.86	34.06	51.21	21.86	20.72	51.07	31.25	31.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.48
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.16	19.38	0.88	23.12	12.61	1.72	23.88	0.22	0.33	7.15	27.86	39.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.97	0.16	1.00	0.92	0.26	0.92	0.46	0.36	0.63	0.99	1.02
d, Delay for Lane Group [s/veh]	56.66	59.91	32.65	72.12	53.47	35.78	75.09	22.08	21.05	58.22	59.12	70.82
Lane Group LOS	E	E	C	F	D	D	E	C	C	E	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.69	12.62	1.36	5.99	10.34	2.15	3.38	5.98	3.99	1.68	24.13	23.96
50th-Percentile Queue Length [ft/ln]	142.15	315.46	33.92	149.73	258.45	53.79	84.59	149.53	99.86	41.89	603.34	599.10
95th-Percentile Queue Length [veh/ln]	9.60	18.44	2.44	10.02	15.61	3.87	6.09	9.99	7.19	3.02	32.19	32.49
95th-Percentile Queue Length [ft/ln]	239.92	461.10	61.06	250.54	390.28	96.81	152.27	249.80	179.76	75.40	804.76	812.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.66	59.91	32.65	72.12	53.47	35.78	75.09	22.08	21.05	58.22	61.52	70.82
Movement LOS	E	E	C	F	D	D	E	C	C	E	E	E
d_A, Approach Delay [s/veh]	58.12			56.84			26.95			64.47		
Approach LOS	E			E			C			E		
d_I, Intersection Delay [s/veh]	53.82											
Intersection LOS	D											
Intersection V/C	0.883											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	1401	73	206	1736	34	15	16	27	42	4	148
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	382	20	56	474	9	4	4	7	11	1	40
Total Analysis Volume [veh/h]	23	1529	80	225	1895	37	16	17	29	46	4	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	17	27	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	36	36	12	45	45	5	5	11	11
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.57	0.57	0.07	0.07	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.31	0.05	0.13	0.37	0.37	0.02	0.02	0.03	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1782	1757	1530	1714	1536
c, Capacity [veh/h]	62	2194	684	263	1936	1007	116	101	228	205
d1, Uniform Delay [s]	37.74	17.78	12.91	33.05	12.05	12.07	35.59	35.60	30.92	33.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	1.86	0.35	7.83	1.75	3.36	1.32	1.53	0.43	7.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.70	0.12	0.86	0.66	0.66	0.28	0.29	0.20	0.81
d, Delay for Lane Group [s/veh]	41.45	19.64	13.26	40.87	13.80	15.43	36.91	37.13	31.35	41.23
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	6.48	0.76	4.53	6.61	7.35	0.65	0.58	0.78	3.39
50th-Percentile Queue Length [ft/ln]	11.75	162.11	19.05	113.16	165.32	183.76	16.29	14.46	19.52	84.85
95th-Percentile Queue Length [veh/ln]	0.85	10.66	1.37	8.02	10.83	11.80	1.17	1.04	1.41	6.11
95th-Percentile Queue Length [ft/ln]	21.14	266.51	34.29	200.40	270.76	294.91	29.33	26.04	35.14	152.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	19.64	13.26	40.87	14.34	15.43	36.91	36.91	37.13	31.35	41.23	41.23
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	19.63			17.13			37.01			39.09		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.58											
Intersection LOS	B											
Intersection V/C	0.600											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	842	100	337	958	237	247	165	24	200	283	252
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	217	26	87	246	61	64	42	6	51	73	65
Total Analysis Volume [veh/h]	65	866	103	347	986	244	254	170	25	206	291	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	12	22	0	16	21	0	16	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	20	20	8	23	23	12	16	16	10	14	14
g / C, Green / Cycle	0.07	0.29	0.29	0.11	0.33	0.33	0.17	0.23	0.23	0.15	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.07	0.10	0.20	0.16	0.15	0.05	0.02	0.12	0.16	0.17
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	126	1398	436	383	1600	499	295	774	346	251	361	307
d1, Uniform Delay [s]	31.33	21.81	19.25	30.71	19.95	18.96	28.29	22.15	21.40	29.10	26.80	27.04
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	2.07	1.27	8.17	1.79	3.39	7.40	0.14	0.09	6.60	4.30	6.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

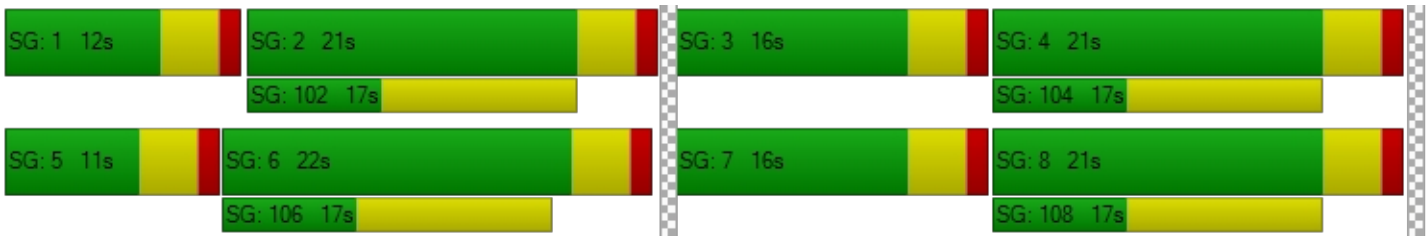
X, volume / capacity	0.51	0.62	0.24	0.91	0.62	0.49	0.86	0.22	0.07	0.82	0.81	0.84
d, Delay for Lane Group [s/veh]	34.54	23.88	20.52	38.88	21.74	22.36	35.68	22.29	21.49	35.70	31.09	33.38
Lane Group LOS	C	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.08	3.82	1.27	3.00	4.00	3.11	4.29	1.02	0.29	3.52	4.60	4.29
50th-Percentile Queue Length [ft/ln]	26.92	95.49	31.82	74.91	100.07	77.71	107.15	25.58	7.37	88.09	115.02	107.14
95th-Percentile Queue Length [veh/ln]	1.94	6.88	2.29	5.39	7.20	5.60	7.68	1.84	0.53	6.34	8.12	7.68
95th-Percentile Queue Length [ft/ln]	48.46	171.89	57.27	134.84	180.12	139.88	192.03	46.05	13.27	158.57	202.96	192.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.54	23.88	20.52	38.88	21.74	22.36	35.68	22.29	21.49	35.70	31.09	33.38
Movement LOS	C	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.22			25.61			29.82			33.13		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.22											
Intersection LOS	C											
Intersection V/C	0.634											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	29.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.120

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	13	8	425	33	9	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	12	633	49	13	620
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	165	13	3	162
Total Analysis Volume [veh/h]	20	13	661	51	14	647
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.03	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	29.37	15.51	0.00	0.00	9.08	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.51	0.51	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	12.74	12.74	0.00	0.00	1.10	1.10
d_A, Approach Delay [s/veh]	23.91		0.00		0.19	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	426	16	100	410	27	28	110	34	7	92	33
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	122	5	29	117	8	8	31	10	2	26	9
Total Analysis Volume [veh/h]	87	487	18	114	469	31	32	126	39	8	105	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	494	531	536	496	533	541	514	510
Degree of Utilization, x	0.18	0.48	0.47	0.23	0.47	0.46	0.38	0.30

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.63	2.53	2.50	0.88	2.47	2.42	1.79	1.23
95th-Percentile Queue Length [ft]	15.84	63.32	62.52	21.99	61.84	60.51	44.66	30.71
Approach Delay [s/veh]	14.81			14.56			14.31	13.00
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	14.47							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.315

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	352	21	88	238	73	42	417	170	10	438	75
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	93	6	23	63	19	11	110	45	3	115	20
Total Analysis Volume [veh/h]	131	371	22	93	251	77	44	439	179	11	462	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	28	28	8	27	27	6	16	16	2	12	12
g / C, Green / Cycle	0.13	0.40	0.40	0.12	0.38	0.38	0.08	0.23	0.23	0.03	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.04	0.11	0.01	0.03	0.07	0.05	0.03	0.13	0.12	0.01	0.13	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	443	1351	603	403	1310	585	145	779	348	51	591	264
d1, Uniform Delay [s]	27.49	14.46	13.08	27.91	14.46	14.11	30.22	24.05	23.75	33.29	27.80	25.36
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.50	0.11	0.29	0.33	0.47	1.17	0.64	1.18	2.11	2.30	0.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.27	0.04	0.23	0.19	0.13	0.30	0.56	0.51	0.22	0.78	0.30
d, Delay for Lane Group [s/veh]	27.86	14.97	13.20	28.20	14.79	14.58	31.39	24.69	24.93	35.40	30.10	25.99
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.92	1.75	0.20	0.65	1.17	0.74	0.68	2.91	2.40	0.20	3.48	1.07
50th-Percentile Queue Length [ft/ln]	22.91	43.82	4.92	16.36	29.26	18.52	17.05	72.66	59.96	4.93	87.06	26.84
95th-Percentile Queue Length [veh/ln]	1.65	3.16	0.35	1.18	2.11	1.33	1.23	5.23	4.32	0.36	6.27	1.93
95th-Percentile Queue Length [ft/ln]	41.24	78.88	8.86	29.45	52.66	33.34	30.69	130.80	107.93	8.88	156.71	48.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.86	14.97	13.20	28.20	14.79	14.58	31.39	24.69	24.93	35.40	30.10	25.99
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	18.11			17.71			25.20			29.62		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.15											
Intersection LOS	C											
Intersection V/C	0.315											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	3.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.413

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	10	10	541	527	21
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	3	3	153	149	6
Total Analysis Volume [veh/h]	27	11	11	611	595	24
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	12	0	0	63	63	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C
C, Cycle Length [s]	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	63	63	63
g / C, Green / Cycle	0.05	0.84	0.84	0.84
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.34	0.35
s, saturation flow rate [veh/h]	1657	817	1800	1788
c, Capacity [veh/h]	87	685	1514	1503
d1, Uniform Delay [s]	34.46	2.97	1.44	1.45
k, delay calibration	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.45	0.04	0.80	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.02	0.40	0.41
d, Delay for Lane Group [s/veh]	37.91	3.02	2.24	2.29
Lane Group LOS	D	A	A	A
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.71	0.04	0.34	0.35
50th-Percentile Queue Length [ft/ln]	17.82	0.90	8.44	8.72
95th-Percentile Queue Length [veh/ln]	1.28	0.07	0.61	0.63
95th-Percentile Queue Length [ft/ln]	32.07	1.63	15.18	15.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.91	37.91	3.02	2.24	2.29	2.29
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	37.91		2.25		2.29	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.33					
Intersection LOS	A					
Intersection V/C	0.413					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	435	82	186	414	30	43	450	79	33	435	253
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	118	22	50	112	8	12	122	21	9	118	69
Total Analysis Volume [veh/h]	72	472	89	202	449	33	47	488	86	36	472	274
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	16	26	0	0	23	0	0	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	20	20	9	24	24	19	19	19	19	19	19
g / C, Green / Cycle	0.08	0.34	0.34	0.15	0.40	0.40	0.32	0.32	0.32	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.12	0.14	0.14	0.05	0.27	0.06	0.04	0.26	0.18
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1757	936	1800	1530	922	1800	1530
c, Capacity [veh/h]	143	607	574	251	721	703	155	570	484	144	570	484
d1, Uniform Delay [s]	26.36	15.71	15.73	24.84	12.51	12.52	29.21	19.28	14.89	29.53	19.05	17.12
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.70	2.63	2.82	5.94	1.27	1.31	1.08	4.10	0.17	0.89	3.17	1.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.47	0.48	0.80	0.34	0.34	0.30	0.86	0.18	0.25	0.83	0.57
d, Delay for Lane Group [s/veh]	29.06	18.35	18.55	30.78	13.78	13.82	30.29	23.38	15.06	30.42	22.21	18.16
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.97	2.93	2.81	2.81	2.00	1.97	0.65	5.75	0.72	0.50	5.37	2.68
50th-Percentile Queue Length [ft/ln]	24.33	73.13	70.36	70.28	50.07	49.15	16.32	143.66	17.93	12.50	134.29	67.03
95th-Percentile Queue Length [veh/ln]	1.75	5.27	5.07	5.06	3.60	3.54	1.18	9.68	1.29	0.90	9.17	4.83
95th-Percentile Queue Length [ft/ln]	43.79	131.64	126.65	126.51	90.12	88.47	29.38	241.94	32.27	22.50	229.31	120.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.06	18.43	18.55	30.78	13.80	13.82	30.29	23.38	15.06	30.42	22.21	18.16
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	19.65			18.81			22.75			21.17		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	20.59											
Intersection LOS	C											
Intersection V/C	0.589											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Scenario 7 Future Year 2040 Without Project
1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**373**	**1156**	**60**	**346**	**1013**	**89**	**95**	**660**	**231**	**54**	**903**	**474**	**5454**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**21**	**1401**	**73**	**206**	**1736**	**34**	**15**	**16**	**27**	**42**	**4**	**148**	**3723**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**63**	**842**	**100**	**337**	**958**	**237**	**247**	**165**	**24**	**200**	**283**	**252**	**3708**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	8	425	33	9	416	904
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**19**	**12**	**633**	**49**	**13**	**620**	**1346**

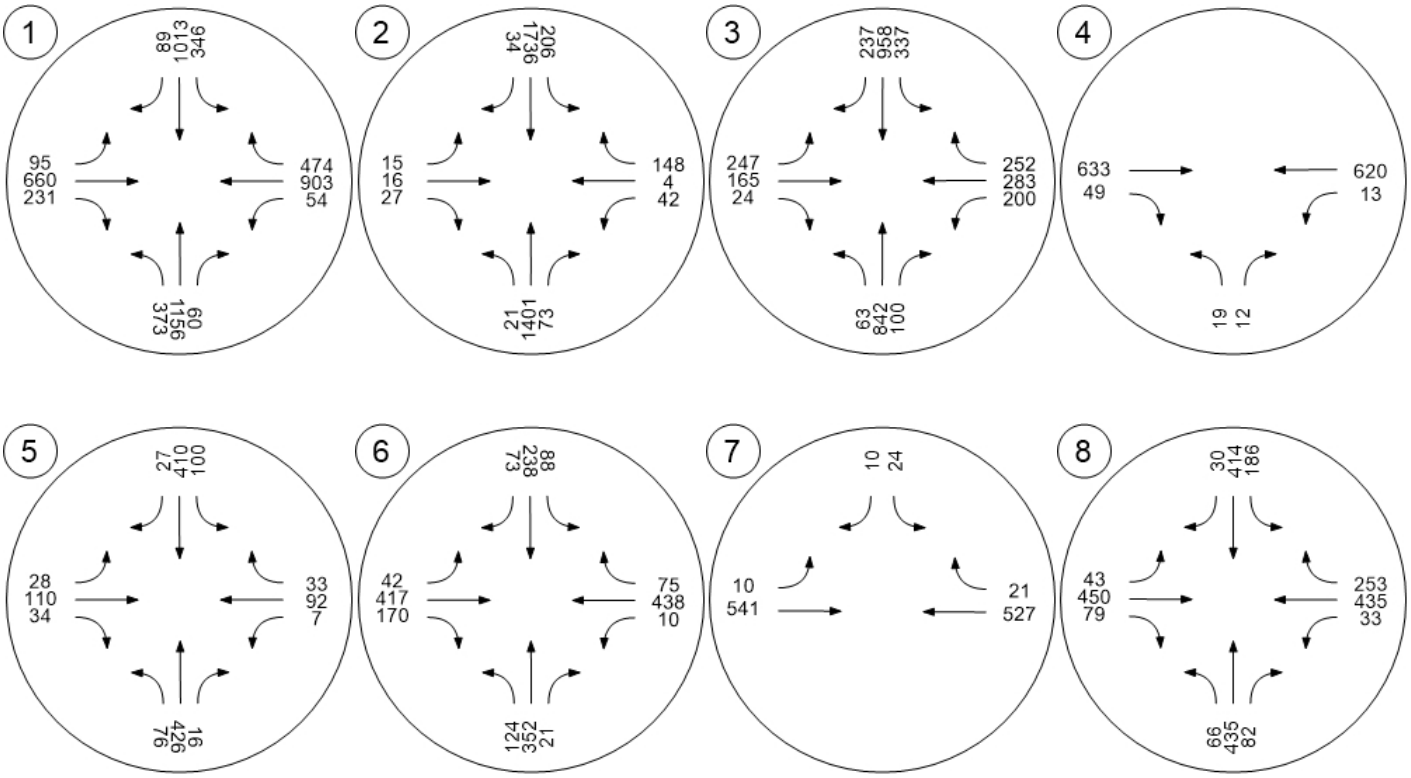
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**76**	**426**	**16**	**100**	**410**	**27**	**28**	**110**	**34**	**7**	**92**	**33**	**1359**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**124**	**352**	**21**	**88**	**238**	**73**	**42**	**417**	**170**	**10**	**438**	**75**	**2048**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**24**	**10**	**10**	**541**	**527**	**21**	**1133**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**66**	**435**	**82**	**186**	**414**	**30**	**43**	**450**	**79**	**33**	**435**	**253**	**2506**

Traffic Volume - Future Total Volume



Year 2040 With Project – Proposed Project

TTM 37884

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Scenario 8 Future Year 2040 With Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.727	27.4	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	WB Right	0.717	27.2	C
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.889	43.4	D
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.229	40.6	E
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.613	16.5	C
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.455	24.2	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.870	103.8	F
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.713	25.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	9	3	0	3	0	0	0	2	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	192	955	104	404	988	63	85	866	282	52	359	197
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	257	28	109	266	17	23	233	76	14	97	53
Total Analysis Volume [veh/h]	206	1027	112	434	1062	68	91	931	303	56	386	212
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	15	25	0	11	23	0	11	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	11	22	22	6	21	21	5	20	20
g / C, Green / Cycle	0.10	0.25	0.25	0.16	0.31	0.31	0.08	0.30	0.30	0.07	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.21	0.07	0.13	0.22	0.04	0.05	0.27	0.20	0.03	0.18	0.18
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1589
c, Capacity [veh/h]	328	1242	387	519	1523	475	143	1013	452	115	502	443
d1, Uniform Delay [s]	30.35	24.71	21.08	28.70	21.25	17.42	31.08	23.87	21.68	31.53	22.08	22.14
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.98	6.41	1.88	3.64	2.67	0.63	4.62	3.94	1.73	3.19	1.30	1.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.83	0.29	0.84	0.70	0.14	0.64	0.92	0.67	0.49	0.63	0.64
d, Delay for Lane Group [s/veh]	32.33	31.12	22.96	32.34	23.91	18.05	35.70	27.80	23.40	34.72	23.38	23.66
Lane Group LOS	C	C	C	C	C	B	D	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.62	5.49	1.53	3.47	4.83	0.79	1.55	7.02	4.04	0.95	4.18	3.77
50th-Percentile Queue Length [ft/ln]	40.62	137.27	38.22	86.78	120.81	19.63	38.87	175.46	100.96	23.66	104.43	94.26
95th-Percentile Queue Length [veh/ln]	2.92	9.33	2.75	6.25	8.44	1.41	2.80	11.36	7.27	1.70	7.52	6.79
95th-Percentile Queue Length [ft/ln]	73.11	233.34	68.80	156.20	210.94	35.33	69.97	284.08	181.74	42.59	187.98	169.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.33	31.12	22.96	32.34	23.91	18.05	35.70	27.80	23.40	34.72	23.43	23.66
Movement LOS	C	C	C	C	C	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	30.63			26.00			27.34			24.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.43											
Intersection LOS	C											
Intersection V/C	0.727											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1383	55	131	1329	73	12	7	19	66	13	356
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	365	15	35	351	19	3	2	5	17	3	94
Total Analysis Volume [veh/h]	38	1462	58	138	1405	77	13	7	20	70	14	376
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	30	30	8	34	34	4	4	22	22
g / C, Green / Cycle	0.05	0.37	0.37	0.10	0.42	0.42	0.05	0.05	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.02	0.30	0.04	0.08	0.29	0.29	0.01	0.01	0.04	0.25
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1753	1743	1530	1714	1538
c, Capacity [veh/h]	88	1830	571	172	1446	740	93	81	469	421
d1, Uniform Delay [s]	36.89	22.45	16.37	35.30	18.77	18.77	36.37	36.43	22.06	28.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.27	3.75	0.36	8.37	2.57	4.96	1.15	1.55	0.15	15.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

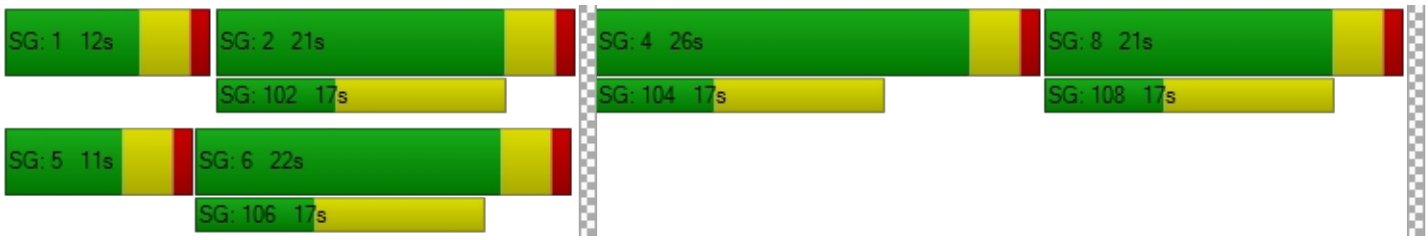
X, volume / capacity	0.43	0.80	0.10	0.80	0.68	0.68	0.22	0.25	0.15	0.93
d, Delay for Lane Group [s/veh]	40.16	26.20	16.73	43.67	21.34	23.72	37.52	37.98	22.21	44.02
Lane Group LOS	D	C	B	D	C	C	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	7.50	0.65	2.87	6.87	7.52	0.40	0.41	0.96	8.54
50th-Percentile Queue Length [ft/ln]	18.62	187.58	16.32	71.78	171.83	188.05	10.06	10.21	23.89	213.44
95th-Percentile Queue Length [veh/ln]	1.34	12.00	1.17	5.17	11.17	12.02	0.72	0.74	1.72	13.33
95th-Percentile Queue Length [ft/ln]	33.52	299.89	29.37	129.21	279.32	300.49	18.11	18.38	43.00	333.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.16	26.20	16.73	43.67	22.06	23.72	37.52	37.52	37.98	22.21	44.02	44.02
Movement LOS	D	C	B	D	C	C	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	26.18			23.98			37.75			40.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	27.15											
Intersection LOS	C											
Intersection V/C	0.717											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	43.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	6	0	0	0	2	0	6	6	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	673	21	119	684	453	352	334	58	100	429	271
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	173	5	31	176	117	91	86	15	26	110	70
Total Analysis Volume [veh/h]	82	693	22	123	704	467	363	344	60	103	442	279
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	16	30	0	23	21	0	28	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	26	26	7	27	27	19	34	34	7	22	22
g / C, Green / Cycle	0.07	0.29	0.29	0.07	0.30	0.30	0.21	0.38	0.38	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.01	0.04	0.14	0.31	0.21	0.10	0.04	0.06	0.25	0.18
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1439	449	248	1470	459	362	1293	577	132	438	372
d1, Uniform Delay [s]	41.07	26.17	22.80	40.05	25.77	31.52	35.52	19.41	18.17	40.80	34.07	31.54
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.18	0.11	0.11	0.11	0.26	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.46	1.16	0.21	1.54	1.12	46.58	29.35	0.11	0.08	9.51	33.27	3.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

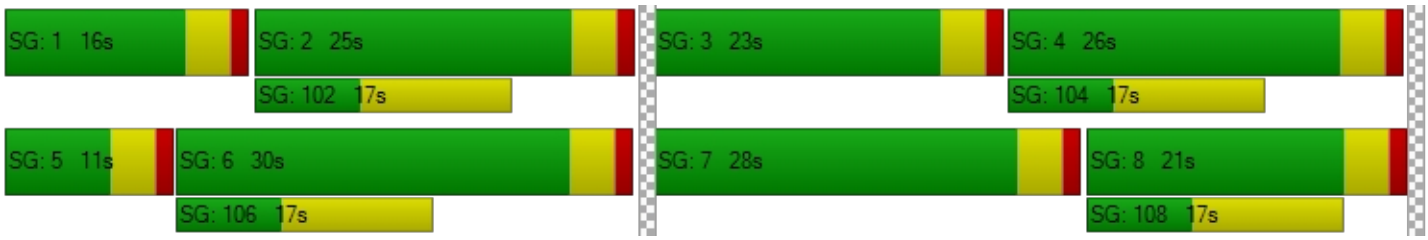
X, volume / capacity	0.70	0.48	0.05	0.50	0.48	1.02	1.00	0.27	0.10	0.78	1.01	0.75
d, Delay for Lane Group [s/veh]	48.52	27.33	23.01	41.58	26.89	78.10	64.87	19.52	18.25	50.31	67.34	34.87
Lane Group LOS	D	C	C	D	C	F	F	B	B	D	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.92	3.89	0.34	1.27	3.85	14.78	10.26	2.27	0.75	2.49	12.92	5.58
50th-Percentile Queue Length [ft/ln]	48.06	97.24	8.39	31.86	96.27	369.57	256.53	56.70	18.67	62.19	323.08	139.51
95th-Percentile Queue Length [veh/ln]	3.46	7.00	0.60	2.29	6.93	21.32	15.54	4.08	1.34	4.48	18.92	9.45
95th-Percentile Queue Length [ft/ln]	86.51	175.02	15.11	57.34	173.28	533.07	388.47	102.07	33.61	111.95	473.08	236.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.52	27.33	23.01	41.58	26.89	78.10	64.87	19.52	18.25	50.31	67.34	34.87
Movement LOS	D	C	C	D	C	F	F	B	B	D	F	C
d_A, Approach Delay [s/veh]	29.39			46.77			40.88			54.22		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	43.45											
Intersection LOS	D											
Intersection V/C	0.889											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	40.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.229

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	30	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	3	28	0	30	10	423	7	10	776	10
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	1	7	0	8	3	112	2	3	205	3
Total Analysis Volume [veh/h]	16	0	3	30	0	32	11	447	7	11	820	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.00	0.00	0.23	0.00	0.09	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	39.77	32.89	15.14	40.61	36.79	22.73	9.51	0.00	0.00	8.25	0.00	0.00
Movement LOS	E	D	C	E	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.47	0.47	0.47	1.28	1.28	1.28	0.04	0.02	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	11.86	11.86	11.86	31.94	31.94	31.94	0.94	0.47	0.00	0.68	0.68	0.68
d_A, Approach Delay [s/veh]	35.88			31.38			0.22			0.11		
Approach LOS	E			D			A			A		
d_I, Intersection Delay [s/veh]	2.03											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	341	3	48	369	34	49	61	31	31	183	45
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	103	1	15	112	10	15	18	9	9	55	14
Total Analysis Volume [veh/h]	41	412	4	58	446	41	59	74	37	37	221	54
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	455	488	488	463	496	504	484	509
Degree of Utilization, x	0.09	0.43	0.43	0.13	0.49	0.48	0.35	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.30	2.11	2.10	0.43	2.67	2.60	1.56	4.07
95th-Percentile Queue Length [ft]	7.38	52.67	52.52	10.66	66.75	64.88	39.07	101.82
Approach Delay [s/veh]	15.09			16.02			14.42	20.61
Approach LOS	C			C			B	C
Intersection Delay [s/veh]	16.52							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.455

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	3	25	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	232	15	60	228	134	85	262	76	28	611	69
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	68	4	18	67	39	25	77	22	8	178	20
Total Analysis Volume [veh/h]	113	271	18	70	266	157	99	306	89	33	714	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	21	21	7	20	20	9	20	20	5	17	17
g / C, Green / Cycle	0.13	0.30	0.30	0.11	0.28	0.28	0.12	0.29	0.29	0.07	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.08	0.10	0.06	0.09	0.06	0.02	0.21	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	425	1043	466	357	973	434	211	998	445	118	813	363
d1, Uniform Delay [s]	27.61	18.42	17.17	28.54	19.49	20.03	28.63	19.35	18.71	30.99	25.78	21.55
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.60	0.16	0.26	0.69	2.33	1.62	0.17	0.22	1.27	3.26	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.26	0.04	0.20	0.27	0.36	0.47	0.31	0.20	0.28	0.88	0.22
d, Delay for Lane Group [s/veh]	27.94	19.03	17.32	28.81	20.18	22.36	30.25	19.52	18.92	32.27	29.04	21.85
Lane Group LOS	C	B	B	C	C	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	1.52	0.20	0.50	1.56	2.06	1.49	1.70	0.97	0.52	5.35	0.98
50th-Percentile Queue Length [ft/ln]	19.77	38.03	4.94	12.48	38.91	51.39	37.27	42.54	24.27	13.11	133.69	24.38
95th-Percentile Queue Length [veh/ln]	1.42	2.74	0.36	0.90	2.80	3.70	2.68	3.06	1.75	0.94	9.14	1.76
95th-Percentile Queue Length [ft/ln]	35.59	68.45	8.89	22.46	70.04	92.49	67.09	76.57	43.68	23.59	228.50	43.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.94	19.03	17.32	28.81	20.18	22.36	30.25	19.52	18.92	32.27	29.04	21.85
Movement LOS	C	B	B	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.46			22.10			21.56			28.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.24											
Intersection LOS	C											
Intersection V/C	0.455											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	103.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.870

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	22	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	19	48	326	607	210
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	5	14	94	174	60
Total Analysis Volume [veh/h]	144	22	55	375	698	241
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.87	0.06	0.07	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	103.76	91.50	10.27	0.00	0.00	0.00
Movement LOS	F	F	B	A	A	A
95th-Percentile Queue Length [veh/ln]	7.13	7.13	0.24	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	178.24	178.24	6.02	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	102.13		1.31		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	11.41					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	4	10	9	3	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	322	28	192	428	62	52	320	85	34	711	246
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	85	7	51	113	16	14	84	22	9	187	65
Total Analysis Volume [veh/h]	85	339	29	202	451	65	55	337	89	36	748	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	18	18	11	22	22	35	35	35	35	35	35
g / C, Green / Cycle	0.08	0.23	0.23	0.14	0.30	0.30	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.10	0.12	0.15	0.15	0.08	0.19	0.06	0.03	0.42	0.17
s, saturation flow rate [veh/h]	1714	1800	1751	1714	1800	1722	725	1800	1530	1060	1800	1530
c, Capacity [veh/h]	135	421	409	241	532	509	134	838	713	427	838	713
d1, Uniform Delay [s]	33.53	24.59	24.61	31.42	21.82	21.83	36.19	13.19	11.38	18.36	18.34	12.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.38	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.74	3.34	3.48	7.49	3.27	3.43	2.01	0.31	0.08	0.08	10.95	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

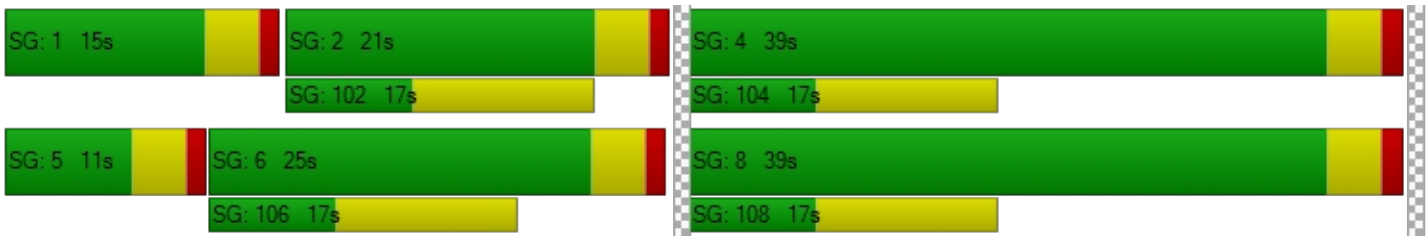
X, volume / capacity	0.63	0.44	0.45	0.84	0.49	0.50	0.41	0.40	0.12	0.08	0.89	0.36
d, Delay for Lane Group [s/veh]	38.26	27.93	28.10	38.92	25.09	25.27	38.21	13.50	11.46	18.44	29.29	13.22
Lane Group LOS	D	C	C	D	C	C	D	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.56	2.92	2.87	3.74	3.84	3.71	1.01	3.11	0.71	0.40	11.94	2.35
50th-Percentile Queue Length [ft/ln]	38.94	72.88	71.83	93.45	96.05	92.75	25.32	77.86	17.72	10.05	298.47	58.72
95th-Percentile Queue Length [veh/ln]	2.80	5.25	5.17	6.73	6.92	6.68	1.82	5.61	1.28	0.72	17.61	4.23
95th-Percentile Queue Length [ft/ln]	70.09	131.19	129.29	168.22	172.89	166.94	45.58	140.14	31.89	18.10	440.13	105.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.26	28.01	28.10	38.92	25.16	25.27	38.21	13.50	11.46	18.44	29.29	13.22
Movement LOS	D	C	C	D	C	C	D	B	B	B	C	B
d_A, Approach Delay [s/veh]	29.94			29.04			15.95			24.92		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	25.26											
Intersection LOS	C											
Intersection V/C	0.713											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 8 Future Year 2040 With Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	9	3	0	3	0	0	0	2	1	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**192**	**955**	**104**	**404**	**988**	**63**	**85**	**866**	**282**	**52**	**359**	**197**	**4547**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	18	0	0	6	0	0	0	0	0	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**36**	**1383**	**55**	**131**	**1329**	**73**	**12**	**7**	**19**	**66**	**13**	**356**	**3480**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	2	6	0	0	0	2	0	6	6	18	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**673**	**21**	**119**	**684**	**453**	**352**	**334**	**58**	**100**	**429**	**271**	**3574**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	28	0	30	10	0	0	0	0	10	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**0**	**3**	**28**	**0**	**30**	**10**	**423**	**7**	**10**	**776**	**10**	**1312**

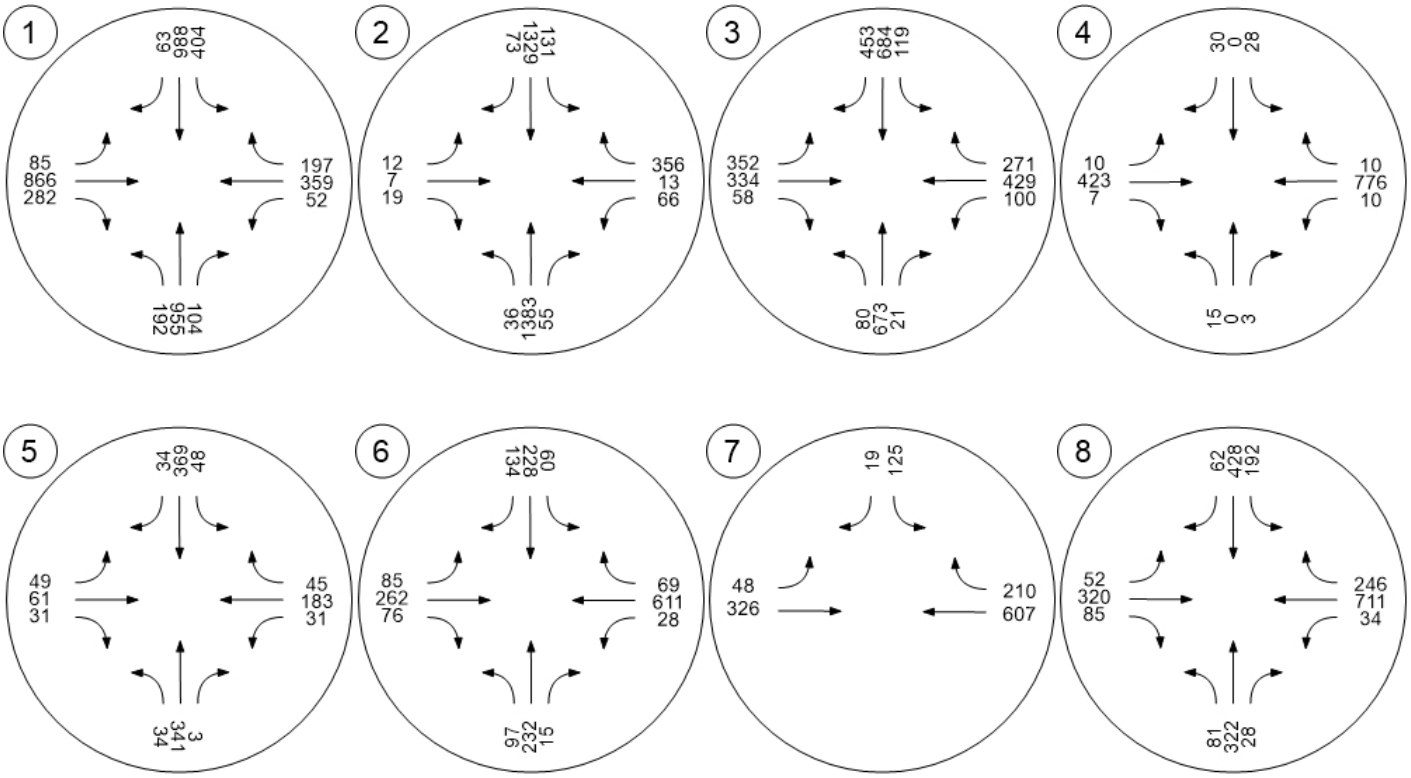
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	1	0	0	0	0	0	0	0	4
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**34**	**341**	**3**	**48**	**369**	**34**	**49**	**61**	**31**	**31**	**183**	**45**	**1229**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	3	25	0	0	9	0	38
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**97**	**232**	**15**	**60**	**228**	**134**	**85**	**262**	**76**	**28**	**611**	**69**	**1897**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	3	22	8	0	34
		Other	0	0	0	0	0	0	0
		Future Total	**125**	**19**	**48**	**326**	**607**	**210**	**1335**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	4	10	9	3	0	3	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**81**	**322**	**28**	**192**	**428**	**62**	**52**	**320**	**85**	**34**	**711**	**246**	**2561**

Traffic Volume - Future Total Volume



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Scenario 8 Future Year 2040 With Project
1/8/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.885	54.3	D
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.603	19.7	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.650	27.4	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	NB Left	0.194	46.6	E
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	NB Thru	0.478	14.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.325	23.2	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.151	28.6	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.593	20.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	54.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	2	0	10	0	0	0	6	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	377	1162	62	346	1023	89	95	660	237	57	903	474
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	306	16	91	269	23	25	174	62	15	238	125
Total Analysis Volume [veh/h]	397	1224	65	365	1078	94	100	695	250	60	952	499
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	32	0	16	30	0	11	50	0	12	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	28	28	12	26	26	7	48	48	6	47	47
g / C, Green / Cycle	0.13	0.26	0.26	0.11	0.24	0.24	0.06	0.44	0.44	0.05	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.04	0.11	0.22	0.06	0.06	0.20	0.16	0.04	0.42	0.43
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1598
c, Capacity [veh/h]	424	1254	391	363	1165	364	109	1495	667	92	767	681
d1, Uniform Delay [s]	47.56	40.60	31.81	49.00	40.98	34.06	51.21	21.93	20.90	51.06	31.25	31.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.48
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.06	20.26	0.91	23.12	13.62	1.72	23.88	0.23	0.35	7.65	27.82	39.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.98	0.17	1.00	0.93	0.26	0.92	0.46	0.37	0.65	0.99	1.02
d, Delay for Lane Group [s/veh]	57.62	60.86	32.73	72.12	54.59	35.78	75.09	22.16	21.25	58.71	59.06	70.88
Lane Group LOS	E	E	C	F	D	D	E	C	C	E	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.80	12.79	1.40	5.99	10.57	2.15	3.38	5.99	4.14	1.77	24.12	23.98
50th-Percentile Queue Length [ft/ln]	144.96	319.74	35.06	149.73	264.13	53.79	84.59	149.86	103.55	44.29	602.93	599.39
95th-Percentile Queue Length [veh/ln]	9.75	18.65	2.52	10.02	15.90	3.87	6.09	10.01	7.46	3.19	32.17	32.51
95th-Percentile Queue Length [ft/ln]	243.69	466.36	63.10	250.54	397.40	96.81	152.27	250.24	186.39	79.72	804.28	812.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.62	60.86	32.73	72.12	54.59	35.78	75.09	22.16	21.25	58.71	61.50	70.88
Movement LOS	E	E	C	F	D	D	E	C	C	E	E	E
d_A, Approach Delay [s/veh]	59.01			57.61			27.01			64.48		
Approach LOS	E			E			C			E		
d_I, Intersection Delay [s/veh]	54.28											
Intersection LOS	D											
Intersection V/C	0.885											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	19	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	1413	73	206	1755	34	15	16	27	42	4	148
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	386	20	56	479	9	4	4	7	11	1	40
Total Analysis Volume [veh/h]	23	1543	80	225	1916	37	16	17	29	46	4	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	17	27	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	36	36	12	45	45	5	5	11	11
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.57	0.57	0.07	0.07	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.31	0.05	0.13	0.37	0.38	0.02	0.02	0.03	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1757	1530	1714	1536
c, Capacity [veh/h]	62	2194	684	263	1936	1007	116	101	228	205
d1, Uniform Delay [s]	37.74	17.85	12.91	33.05	12.13	12.14	35.59	35.60	30.92	33.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	1.92	0.35	7.83	1.81	3.46	1.32	1.53	0.43	7.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.70	0.12	0.86	0.66	0.66	0.28	0.29	0.20	0.81
d, Delay for Lane Group [s/veh]	41.45	19.77	13.26	40.87	13.94	15.61	36.91	37.13	31.35	41.23
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	6.58	0.76	4.53	6.73	7.49	0.65	0.58	0.78	3.39
50th-Percentile Queue Length [ft/ln]	11.75	164.44	19.05	113.16	168.34	187.31	16.29	14.46	19.52	84.85
95th-Percentile Queue Length [veh/ln]	0.85	10.78	1.37	8.02	10.99	11.98	1.17	1.04	1.41	6.11
95th-Percentile Queue Length [ft/ln]	21.14	269.59	34.29	200.40	274.74	299.54	29.33	26.04	35.14	152.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	19.77	13.26	40.87	14.49	15.61	36.91	36.91	37.13	31.35	41.23	41.23
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	19.76			17.23			37.01			39.09		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.68											
Intersection LOS	B											
Intersection V/C	0.603											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	19	0	0	0	6	0	4	4	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	842	106	356	958	237	247	171	24	204	287	264
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	217	27	92	246	61	64	44	6	52	74	68
Total Analysis Volume [veh/h]	65	866	109	366	986	244	254	176	25	210	295	272
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	13	23	0	15	21	0	15	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	11	15	15	10	15	15
g / C, Green / Cycle	0.07	0.28	0.28	0.13	0.33	0.33	0.16	0.22	0.22	0.15	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.07	0.11	0.20	0.16	0.15	0.05	0.02	0.12	0.16	0.18
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	126	1363	425	430	1635	510	270	744	332	254	373	317
d1, Uniform Delay [s]	31.33	22.24	19.72	29.92	19.53	18.56	29.26	22.70	21.89	29.07	26.39	26.84
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	2.27	1.45	4.80	1.66	3.19	14.63	0.16	0.10	6.80	3.77	6.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.64	0.26	0.85	0.60	0.48	0.94	0.24	0.08	0.83	0.79	0.86
d, Delay for Lane Group [s/veh]	34.54	24.51	21.17	34.72	21.19	21.75	43.89	22.86	21.98	35.86	30.17	33.50
Lane Group LOS	C	C	C	C	C	C	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.08	3.89	1.38	2.95	3.93	3.05	4.86	1.08	0.30	3.60	4.58	4.51
50th-Percentile Queue Length [ft/ln]	26.92	97.20	34.43	73.72	98.34	76.27	121.53	26.95	7.49	90.06	114.49	112.86
95th-Percentile Queue Length [veh/ln]	1.94	7.00	2.48	5.31	7.08	5.49	8.48	1.94	0.54	6.48	8.09	8.00
95th-Percentile Queue Length [ft/ln]	48.46	174.97	61.98	132.70	177.01	137.28	211.93	48.51	13.48	162.11	202.23	199.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.54	24.51	21.17	34.72	21.19	21.75	43.89	22.86	21.98	35.86	30.17	33.50
Movement LOS	C	C	C	C	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.79			24.38			34.55			32.87		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.39											
Intersection LOS	C											
Intersection V/C	0.650											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	46.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.194

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	20	31	0	0	0	0	32
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	0	12	18	0	20	31	633	49	13	620	32
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	3	5	0	5	8	165	13	3	162	8
Total Analysis Volume [veh/h]	20	0	13	19	0	21	32	661	51	14	647	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.03	0.19	0.00	0.05	0.03	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	46.59	40.25	19.47	46.15	41.00	18.84	9.05	0.00	0.00	9.08	0.00	0.00
Movement LOS	E	E	C	E	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.81	0.81	0.81	0.85	0.85	0.85	0.10	0.05	0.00	0.04	0.04	0.04
95th-Percentile Queue Length [ft/ln]	20.21	20.21	20.21	21.34	21.34	21.34	2.61	1.30	0.00	1.10	1.10	1.10
d_A, Approach Delay [s/veh]	35.91			31.81			0.39			0.18		
Approach LOS	E			D			A			A		
d_I, Intersection Delay [s/veh]	1.90											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.478

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	428	16	100	413	27	28	110	34	7	92	33
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	122	5	29	118	8	8	31	10	2	26	9
Total Analysis Volume [veh/h]	87	489	18	114	472	31	32	126	39	8	105	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	494	531	535	496	533	540	513	509
Degree of Utilization, x	0.18	0.48	0.47	0.23	0.47	0.47	0.38	0.30

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.63	2.55	2.52	0.88	2.50	2.45	1.79	1.23
95th-Percentile Queue Length [ft]	15.85	63.85	63.06	22.01	62.56	61.22	44.74	30.76
Approach Delay [s/veh]	14.87			14.63			14.33	13.02
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	14.52							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	2	16	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	352	21	88	238	76	44	433	170	10	467	75
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	93	6	23	63	20	12	114	45	3	123	20
Total Analysis Volume [veh/h]	131	371	22	93	251	80	46	456	179	11	492	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	27	27	8	26	26	6	17	17	2	13	13
g / C, Green / Cycle	0.13	0.38	0.38	0.12	0.37	0.37	0.09	0.24	0.24	0.03	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.11	0.01	0.03	0.07	0.05	0.03	0.13	0.12	0.01	0.14	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	443	1313	586	403	1272	568	149	817	365	51	621	277
d1, Uniform Delay [s]	27.49	14.99	13.57	27.91	14.98	14.65	30.11	23.50	23.07	33.29	27.49	24.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.54	0.12	0.29	0.35	0.52	1.17	0.60	1.02	2.11	2.32	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.28	0.04	0.23	0.20	0.14	0.31	0.56	0.49	0.22	0.79	0.28
d, Delay for Lane Group [s/veh]	27.86	15.53	13.69	28.20	15.33	15.17	31.27	24.10	24.10	35.40	29.82	25.39
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.92	1.80	0.20	0.65	1.20	0.79	0.71	2.97	2.34	0.20	3.69	1.06
50th-Percentile Queue Length [ft/ln]	22.91	45.04	5.06	16.36	30.05	19.82	17.77	74.37	58.61	4.93	92.37	26.41
95th-Percentile Queue Length [veh/ln]	1.65	3.24	0.36	1.18	2.16	1.43	1.28	5.35	4.22	0.36	6.65	1.90
95th-Percentile Queue Length [ft/ln]	41.24	81.07	9.10	29.45	54.08	35.67	31.99	133.87	105.49	8.88	166.27	47.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.86	15.53	13.69	28.20	15.33	15.17	31.27	24.10	24.10	35.40	29.82	25.39
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	18.54			18.12			24.58			29.32		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.16											
Intersection LOS	C											
Intersection V/C	0.325											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	28.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.151

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	14	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	13	12	555	553	21
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	4	3	157	156	6
Total Analysis Volume [veh/h]	27	15	14	627	625	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.03	0.01	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	28.55	15.93	8.86	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.65	0.65	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	16.24	16.24	1.13	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	24.04		0.19		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.85					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.593

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	13	6	6	2	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	435	82	186	414	43	49	456	81	33	445	253
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	118	22	50	112	12	13	124	22	9	121	69
Total Analysis Volume [veh/h]	75	472	89	202	449	47	53	495	88	36	483	274
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.32	0.32	0.15	0.38	0.38	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.12	0.14	0.14	0.06	0.28	0.06	0.04	0.27	0.18
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1741	927	1800	1530	917	1800	1530
c, Capacity [veh/h]	146	579	547	250	688	665	168	600	510	160	600	510
d1, Uniform Delay [s]	26.32	16.48	16.51	24.87	13.35	13.36	28.63	18.46	14.20	28.61	18.29	16.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.76	3.03	3.24	6.06	1.50	1.56	1.06	3.31	0.16	0.70	2.69	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.50	0.50	0.81	0.37	0.37	0.31	0.83	0.17	0.22	0.81	0.54
d, Delay for Lane Group [s/veh]	29.07	19.52	19.75	30.93	14.86	14.92	29.68	21.77	14.36	29.31	20.98	17.18
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.01	3.06	2.95	2.82	2.19	2.14	0.73	5.56	0.71	0.49	5.29	2.57
50th-Percentile Queue Length [ft/ln]	25.33	76.51	73.64	70.50	54.83	53.43	18.13	139.00	17.69	12.18	132.28	64.34
95th-Percentile Queue Length [veh/ln]	1.82	5.51	5.30	5.08	3.95	3.85	1.31	9.43	1.27	0.88	9.06	4.63
95th-Percentile Queue Length [ft/ln]	45.59	137.71	132.55	126.90	98.69	96.18	32.64	235.68	31.84	21.92	226.59	115.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.07	19.61	19.75	30.93	14.89	14.92	29.68	21.77	14.36	29.31	20.98	17.18
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	20.74			19.53			21.40			20.05		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	20.39											
Intersection LOS	C											
Intersection V/C	0.593											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Scenario 8 Future Year 2040 With Project
1/8/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	6	2	0	10	0	0	0	6	3	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**377**	**1162**	**62**	**346**	**1023**	**89**	**95**	**660**	**237**	**57**	**903**	**474**	**5485**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	12	0	0	19	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**21**	**1413**	**73**	**206**	**1755**	**34**	**15**	**16**	**27**	**42**	**4**	**148**	**3754**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	6	19	0	0	0	6	0	4	4	12	51
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**63**	**842**	**106**	**356**	**958**	**237**	**247**	**171**	**24**	**204**	**287**	**264**	**3759**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	18	0	20	31	0	0	0	0	32	101
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**19**	**0**	**12**	**18**	**0**	**20**	**31**	**633**	**49**	**13**	**620**	**32**	**1447**

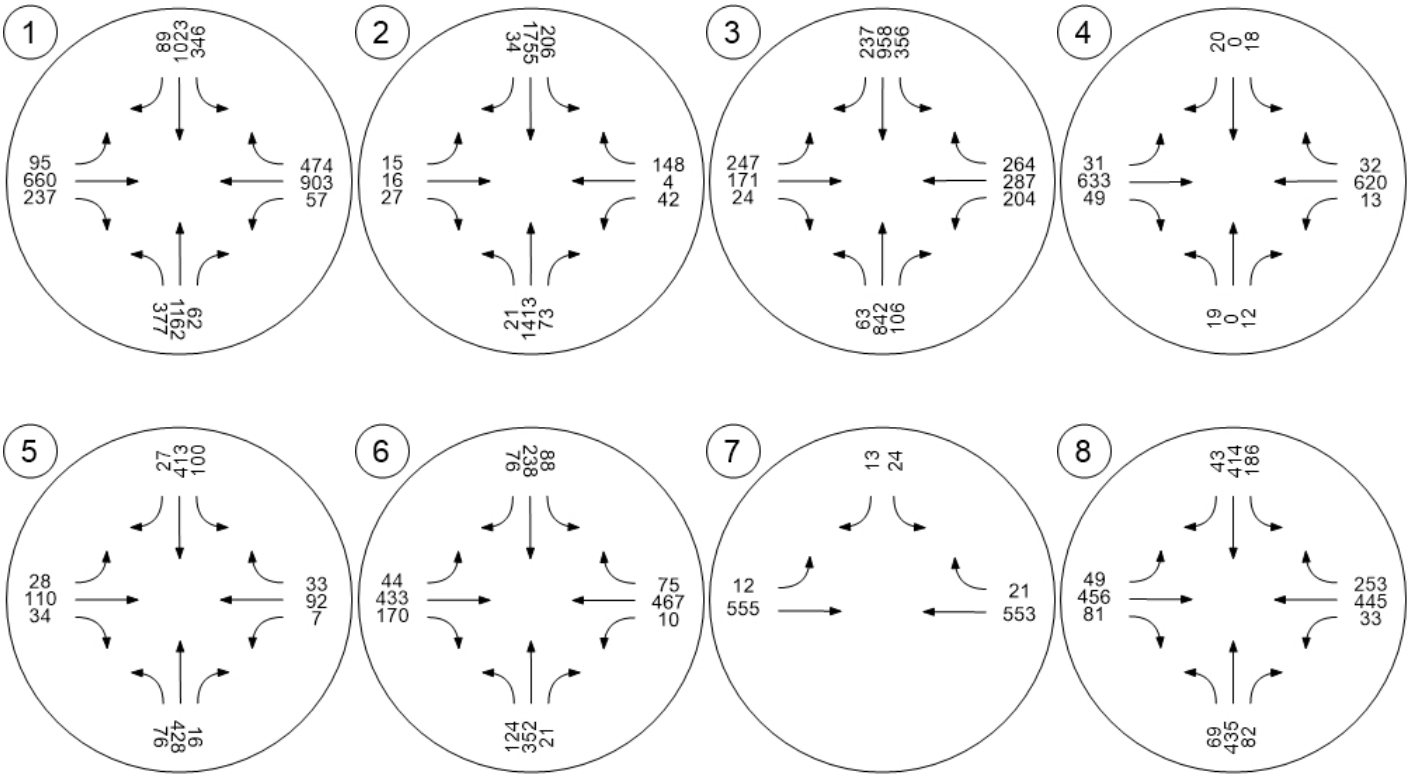
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	0	3	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**76**	**428**	**16**	**100**	**413**	**27**	**28**	**110**	**34**	**7**	**92**	**33**	**1364**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	3	2	16	0	0	29	0	50
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**124**	**352**	**21**	**88**	**238**	**76**	**44**	**433**	**170**	**10**	**467**	**75**	**2098**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	14	26	0	45
		Other	0	0	0	0	0	0	0
		Future Total	**24**	**13**	**12**	**555**	**553**	**21**	**1178**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	13	6	6	2	0	10	0	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**69**	**435**	**82**	**186**	**414**	**43**	**49**	**456**	**81**	**33**	**445**	**253**	**2546**

Traffic Volume - Future Total Volume



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Scenario 8 Future Year 2040 With Project - Improvements
1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.727	27.4	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	WB Right	0.717	27.2	C
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.889	43.4	D
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.314	8.5	A
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.613	16.5	C
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.455	24.2	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.743	9.7	A
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.713	25.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	9	3	0	3	0	0	0	2	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	192	955	104	404	988	63	85	866	282	52	359	197
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	257	28	109	266	17	23	233	76	14	97	53
Total Analysis Volume [veh/h]	206	1027	112	434	1062	68	91	931	303	56	386	212
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	15	25	0	11	23	0	11	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	11	22	22	6	21	21	5	20	20
g / C, Green / Cycle	0.10	0.25	0.25	0.16	0.31	0.31	0.08	0.30	0.30	0.07	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.21	0.07	0.13	0.22	0.04	0.05	0.27	0.20	0.03	0.18	0.18
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1589
c, Capacity [veh/h]	328	1242	387	519	1523	475	143	1013	452	115	502	443
d1, Uniform Delay [s]	30.35	24.71	21.08	28.70	21.25	17.42	31.08	23.87	21.68	31.53	22.08	22.14
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.98	6.41	1.88	3.64	2.67	0.63	4.62	3.94	1.73	3.19	1.30	1.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.83	0.29	0.84	0.70	0.14	0.64	0.92	0.67	0.49	0.63	0.64
d, Delay for Lane Group [s/veh]	32.33	31.12	22.96	32.34	23.91	18.05	35.70	27.80	23.40	34.72	23.38	23.66
Lane Group LOS	C	C	C	C	C	B	D	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.62	5.49	1.53	3.47	4.83	0.79	1.55	7.02	4.04	0.95	4.18	3.77
50th-Percentile Queue Length [ft/ln]	40.62	137.27	38.22	86.78	120.81	19.63	38.87	175.46	100.96	23.66	104.43	94.26
95th-Percentile Queue Length [veh/ln]	2.92	9.33	2.75	6.25	8.44	1.41	2.80	11.36	7.27	1.70	7.52	6.79
95th-Percentile Queue Length [ft/ln]	73.11	233.34	68.80	156.20	210.94	35.33	69.97	284.08	181.74	42.59	187.98	169.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.33	31.12	22.96	32.34	23.91	18.05	35.70	27.80	23.40	34.72	23.43	23.66
Movement LOS	C	C	C	C	C	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	30.63			26.00			27.34			24.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.43											
Intersection LOS	C											
Intersection V/C	0.727											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1383	55	131	1329	73	12	7	19	66	13	356
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	365	15	35	351	19	3	2	5	17	3	94
Total Analysis Volume [veh/h]	38	1462	58	138	1405	77	13	7	20	70	14	376
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	30	30	8	34	34	4	4	22	22
g / C, Green / Cycle	0.05	0.37	0.37	0.10	0.42	0.42	0.05	0.05	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.02	0.30	0.04	0.08	0.29	0.29	0.01	0.01	0.04	0.25
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1753	1743	1530	1714	1538
c, Capacity [veh/h]	88	1830	571	172	1446	740	93	81	469	421
d1, Uniform Delay [s]	36.89	22.45	16.37	35.30	18.77	18.77	36.37	36.43	22.06	28.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.27	3.75	0.36	8.37	2.57	4.96	1.15	1.55	0.15	15.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

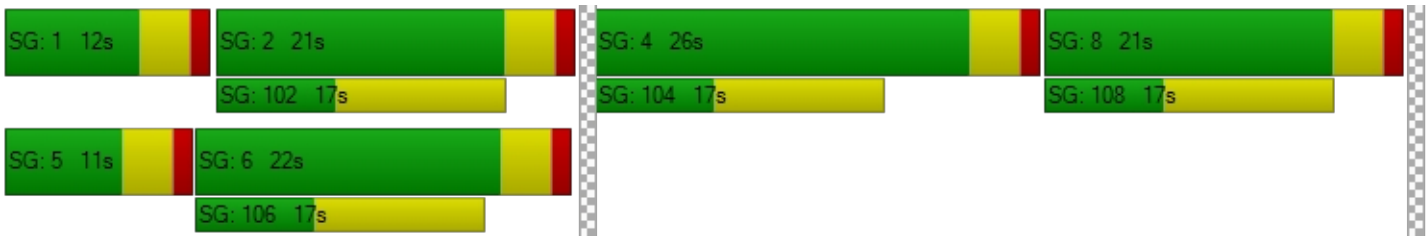
X, volume / capacity	0.43	0.80	0.10	0.80	0.68	0.68	0.22	0.25	0.15	0.93
d, Delay for Lane Group [s/veh]	40.16	26.20	16.73	43.67	21.34	23.72	37.52	37.98	22.21	44.02
Lane Group LOS	D	C	B	D	C	C	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	7.50	0.65	2.87	6.87	7.52	0.40	0.41	0.96	8.54
50th-Percentile Queue Length [ft/ln]	18.62	187.58	16.32	71.78	171.83	188.05	10.06	10.21	23.89	213.44
95th-Percentile Queue Length [veh/ln]	1.34	12.00	1.17	5.17	11.17	12.02	0.72	0.74	1.72	13.33
95th-Percentile Queue Length [ft/ln]	33.52	299.89	29.37	129.21	279.32	300.49	18.11	18.38	43.00	333.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.16	26.20	16.73	43.67	22.06	23.72	37.52	37.52	37.98	22.21	44.02	44.02
Movement LOS	D	C	B	D	C	C	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	26.18			23.98			37.75			40.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	27.15											
Intersection LOS	C											
Intersection V/C	0.717											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	43.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	6	0	0	0	2	0	6	6	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	673	21	119	684	453	352	334	58	100	429	271
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	173	5	31	176	117	91	86	15	26	110	70
Total Analysis Volume [veh/h]	82	693	22	123	704	467	363	344	60	103	442	279
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	16	30	0	23	21	0	28	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	26	26	7	27	27	19	34	34	7	22	22
g / C, Green / Cycle	0.07	0.29	0.29	0.07	0.30	0.30	0.21	0.38	0.38	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.01	0.04	0.14	0.31	0.21	0.10	0.04	0.06	0.25	0.18
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1439	449	248	1470	459	362	1293	577	132	438	372
d1, Uniform Delay [s]	41.07	26.17	22.80	40.05	25.77	31.52	35.52	19.41	18.17	40.80	34.07	31.54
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.18	0.11	0.11	0.11	0.26	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.46	1.16	0.21	1.54	1.12	46.58	29.35	0.11	0.08	9.51	33.27	3.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

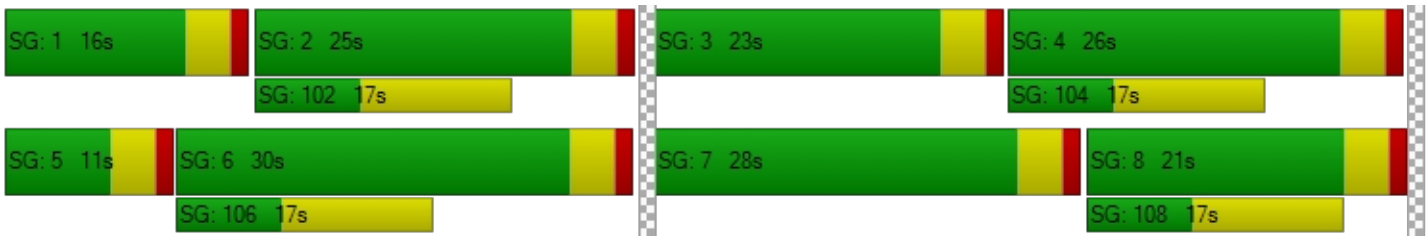
X, volume / capacity	0.70	0.48	0.05	0.50	0.48	1.02	1.00	0.27	0.10	0.78	1.01	0.75
d, Delay for Lane Group [s/veh]	48.52	27.33	23.01	41.58	26.89	78.10	64.87	19.52	18.25	50.31	67.34	34.87
Lane Group LOS	D	C	C	D	C	F	F	B	B	D	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.92	3.89	0.34	1.27	3.85	14.78	10.26	2.27	0.75	2.49	12.92	5.58
50th-Percentile Queue Length [ft/ln]	48.06	97.24	8.39	31.86	96.27	369.57	256.53	56.70	18.67	62.19	323.08	139.51
95th-Percentile Queue Length [veh/ln]	3.46	7.00	0.60	2.29	6.93	21.32	15.54	4.08	1.34	4.48	18.92	9.45
95th-Percentile Queue Length [ft/ln]	86.51	175.02	15.11	57.34	173.28	533.07	388.47	102.07	33.61	111.95	473.08	236.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.52	27.33	23.01	41.58	26.89	78.10	64.87	19.52	18.25	50.31	67.34	34.87
Movement LOS	D	C	C	D	C	F	F	B	B	D	F	C
d_A, Approach Delay [s/veh]	29.39			46.77			40.88			54.22		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	43.45											
Intersection LOS	D											
Intersection V/C	0.889											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	8.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.314

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	30	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	3	28	0	30	10	423	7	10	776	10
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	1	7	0	8	3	112	2	3	205	3
Total Analysis Volume [veh/h]	16	0	3	30	0	32	11	447	7	11	820	11
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	38	0	0	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	34	34	34	34	34	34
g / C, Green / Cycle	0.30	0.30	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.01	0.04	0.02	0.13	0.13	0.01	0.23	0.23
s, saturation flow rate [veh/h]	1418	1509	671	1800	1790	952	1800	1792
c, Capacity [veh/h]	536	542	390	1020	1014	568	1020	1015
d1, Uniform Delay [s]	14.86	15.27	10.87	6.45	6.45	8.51	7.33	7.33
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.12	0.43	0.13	0.51	0.51	0.06	1.21	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

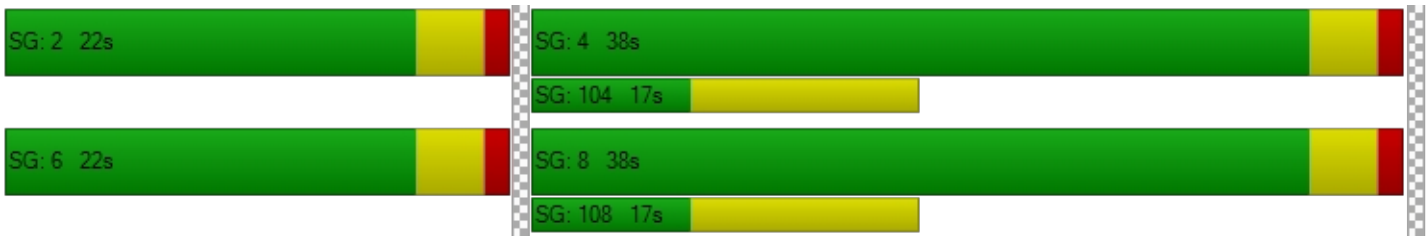
X, volume / capacity	0.04	0.11	0.03	0.22	0.22	0.02	0.41	0.41
d, Delay for Lane Group [s/veh]	14.99	15.70	11.01	6.95	6.96	8.57	8.54	8.55
Lane Group LOS	B	B	B	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.17	0.59	0.09	1.10	1.09	0.07	2.32	2.32
50th-Percentile Queue Length [ft/ln]	4.35	14.66	2.15	27.39	27.30	1.71	58.12	57.90
95th-Percentile Queue Length [veh/ln]	0.31	1.06	0.15	1.97	1.97	0.12	4.18	4.17
95th-Percentile Queue Length [ft/ln]	7.83	26.39	3.87	49.29	49.15	3.08	104.62	104.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.99	14.99	14.99	15.70	15.70	15.70	11.01	6.96	6.96	8.57	8.54	8.55
Movement LOS	B	B	B	B	B	B	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	14.99			15.70			7.05			8.54		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	8.45											
Intersection LOS	A											
Intersection V/C	0.314											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	341	3	48	369	34	49	61	31	31	183	45
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	103	1	15	112	10	15	18	9	9	55	14
Total Analysis Volume [veh/h]	41	412	4	58	446	41	59	74	37	37	221	54
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	455	488	488	463	496	504	484	509
Degree of Utilization, x	0.09	0.43	0.43	0.13	0.49	0.48	0.35	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.30	2.11	2.10	0.43	2.67	2.60	1.56	4.07
95th-Percentile Queue Length [ft]	7.38	52.67	52.52	10.66	66.75	64.88	39.07	101.82
Approach Delay [s/veh]	15.09			16.02			14.42	20.61
Approach LOS	C			C			B	C
Intersection Delay [s/veh]	16.52							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.455

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	3	25	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	232	15	60	228	134	85	262	76	28	611	69
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	68	4	18	67	39	25	77	22	8	178	20
Total Analysis Volume [veh/h]	113	271	18	70	266	157	99	306	89	33	714	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	21	21	7	20	20	9	20	20	5	17	17
g / C, Green / Cycle	0.13	0.30	0.30	0.11	0.28	0.28	0.12	0.29	0.29	0.07	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.08	0.10	0.06	0.09	0.06	0.02	0.21	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	425	1043	466	357	973	434	211	998	445	118	813	363
d1, Uniform Delay [s]	27.61	18.42	17.17	28.54	19.49	20.03	28.63	19.35	18.71	30.99	25.78	21.55
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.60	0.16	0.26	0.69	2.33	1.62	0.17	0.22	1.27	3.26	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.26	0.04	0.20	0.27	0.36	0.47	0.31	0.20	0.28	0.88	0.22
d, Delay for Lane Group [s/veh]	27.94	19.03	17.32	28.81	20.18	22.36	30.25	19.52	18.92	32.27	29.04	21.85
Lane Group LOS	C	B	B	C	C	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	1.52	0.20	0.50	1.56	2.06	1.49	1.70	0.97	0.52	5.35	0.98
50th-Percentile Queue Length [ft/ln]	19.77	38.03	4.94	12.48	38.91	51.39	37.27	42.54	24.27	13.11	133.69	24.38
95th-Percentile Queue Length [veh/ln]	1.42	2.74	0.36	0.90	2.80	3.70	2.68	3.06	1.75	0.94	9.14	1.76
95th-Percentile Queue Length [ft/ln]	35.59	68.45	8.89	22.46	70.04	92.49	67.09	76.57	43.68	23.59	228.50	43.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.94	19.03	17.32	28.81	20.18	22.36	30.25	19.52	18.92	32.27	29.04	21.85
Movement LOS	C	B	B	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.46			22.10			21.56			28.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.24											
Intersection LOS	C											
Intersection V/C	0.455											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	22	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	19	48	326	607	210
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	5	14	94	174	60
Total Analysis Volume [veh/h]	144	22	55	375	698	241
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	49	0	0	11	11	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C
C, Cycle Length [s]	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	44	44	44
g / C, Green / Cycle	0.13	0.74	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.10	0.09	0.21	0.55
s, saturation flow rate [veh/h]	1687	606	1800	1722
c, Capacity [veh/h]	216	345	1329	1272
d1, Uniform Delay [s]	25.31	13.05	2.59	4.52
k, delay calibration	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.61	0.99	0.53	3.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

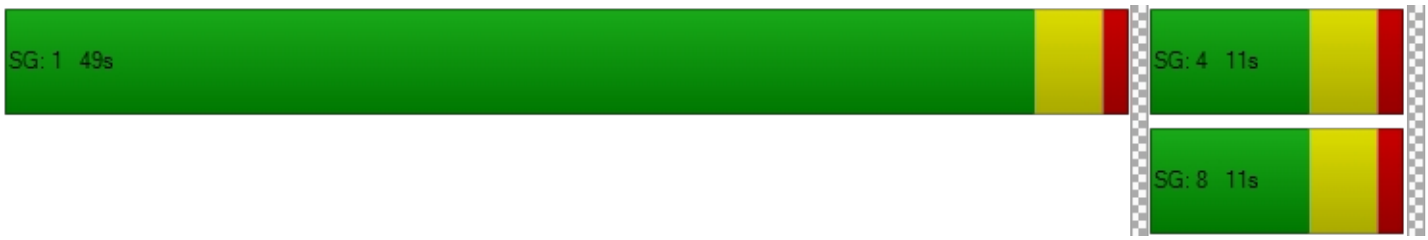
X, volume / capacity	0.77	0.16	0.28	0.74
d, Delay for Lane Group [s/veh]	30.92	14.04	3.12	8.38
Lane Group LOS	C	B	A	A
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.36	0.51	0.57	2.98
50th-Percentile Queue Length [ft/ln]	59.01	12.81	14.13	74.39
95th-Percentile Queue Length [veh/ln]	4.25	0.92	1.02	5.36
95th-Percentile Queue Length [ft/ln]	106.22	23.06	25.44	133.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.92	30.92	14.04	3.12	8.38	8.38
Movement LOS	C	C	B	A	A	A
d_A, Approach Delay [s/veh]	30.92		4.52		8.38	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	9.74					
Intersection LOS	A					
Intersection V/C	0.743					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	4	10	9	3	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	322	28	192	428	62	52	320	85	34	711	246
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	85	7	51	113	16	14	84	22	9	187	65
Total Analysis Volume [veh/h]	85	339	29	202	451	65	55	337	89	36	748	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	18	18	11	22	22	35	35	35	35	35	35
g / C, Green / Cycle	0.08	0.23	0.23	0.14	0.30	0.30	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.10	0.12	0.15	0.15	0.08	0.19	0.06	0.03	0.42	0.17
s, saturation flow rate [veh/h]	1714	1800	1751	1714	1800	1722	725	1800	1530	1060	1800	1530
c, Capacity [veh/h]	135	421	409	241	532	509	134	838	713	427	838	713
d1, Uniform Delay [s]	33.53	24.59	24.61	31.42	21.82	21.83	36.19	13.19	11.38	18.36	18.34	12.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.38	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.74	3.34	3.48	7.49	3.27	3.43	2.01	0.31	0.08	0.08	10.95	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

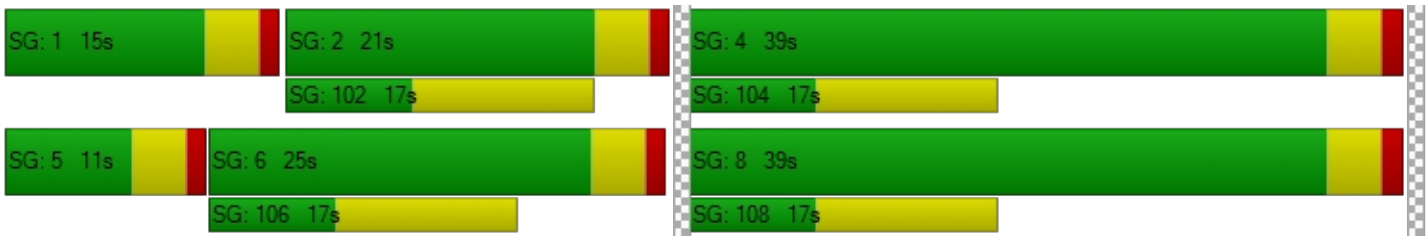
X, volume / capacity	0.63	0.44	0.45	0.84	0.49	0.50	0.41	0.40	0.12	0.08	0.89	0.36
d, Delay for Lane Group [s/veh]	38.26	27.93	28.10	38.92	25.09	25.27	38.21	13.50	11.46	18.44	29.29	13.22
Lane Group LOS	D	C	C	D	C	C	D	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.56	2.92	2.87	3.74	3.84	3.71	1.01	3.11	0.71	0.40	11.94	2.35
50th-Percentile Queue Length [ft/ln]	38.94	72.88	71.83	93.45	96.05	92.75	25.32	77.86	17.72	10.05	298.47	58.72
95th-Percentile Queue Length [veh/ln]	2.80	5.25	5.17	6.73	6.92	6.68	1.82	5.61	1.28	0.72	17.61	4.23
95th-Percentile Queue Length [ft/ln]	70.09	131.19	129.29	168.22	172.89	166.94	45.58	140.14	31.89	18.10	440.13	105.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.26	28.01	28.10	38.92	25.16	25.27	38.21	13.50	11.46	18.44	29.29	13.22
Movement LOS	D	C	C	D	C	C	D	B	B	B	C	B
d_A, Approach Delay [s/veh]	29.94			29.04			15.95			24.92		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	25.26											
Intersection LOS	C											
Intersection V/C	0.713											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	9	3	0	3	0	0	0	2	1	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**192**	**955**	**104**	**404**	**988**	**63**	**85**	**866**	**282**	**52**	**359**	**197**	**4547**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	18	0	0	6	0	0	0	0	0	0	0	24
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**36**	**1383**	**55**	**131**	**1329**	**73**	**12**	**7**	**19**	**66**	**13**	**356**	**3480**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	2	6	0	0	0	2	0	6	6	18	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**673**	**21**	**119**	**684**	**453**	**352**	**334**	**58**	**100**	**429**	**271**	**3574**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	28	0	30	10	0	0	0	0	10	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**0**	**3**	**28**	**0**	**30**	**10**	**423**	**7**	**10**	**776**	**10**	**1312**

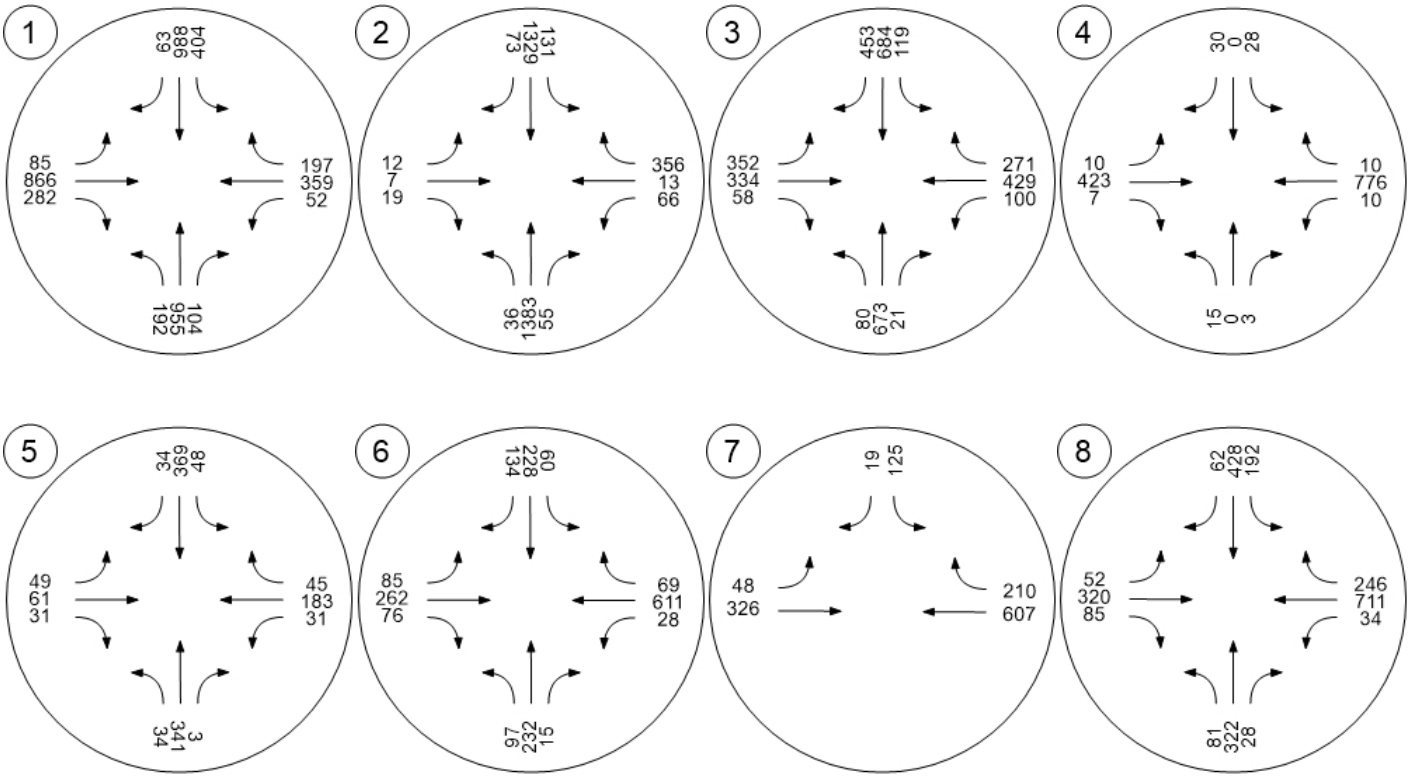
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	1	0	0	0	0	0	0	0	4
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**34**	**341**	**3**	**48**	**369**	**34**	**49**	**61**	**31**	**31**	**183**	**45**	**1229**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	3	25	0	0	9	0	38
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**97**	**232**	**15**	**60**	**228**	**134**	**85**	**262**	**76**	**28**	**611**	**69**	**1897**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	3	22	8	0	34
		Other	0	0	0	0	0	0	0
		Future Total	**125**	**19**	**48**	**326**	**607**	**210**	**1335**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	4	10	9	3	0	3	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**81**	**322**	**28**	**192**	**428**	**62**	**52**	**320**	**85**	**34**	**711**	**246**	**2561**

Traffic Volume - Future Total Volume



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Scenario 8 Future Year 2040 With Project - Improvements
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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.885	54.3	D
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.603	19.7	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.650	27.4	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.251	4.0	A
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	NB Thru	0.478	14.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.325	23.2	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.435	3.5	A
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.593	20.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	54.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	2	0	10	0	0	0	6	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	377	1162	62	346	1023	89	95	660	237	57	903	474
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	306	16	91	269	23	25	174	62	15	238	125
Total Analysis Volume [veh/h]	397	1224	65	365	1078	94	100	695	250	60	952	499
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	32	0	16	30	0	11	50	0	12	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	28	28	12	26	26	7	48	48	6	47	47
g / C, Green / Cycle	0.13	0.26	0.26	0.11	0.24	0.24	0.06	0.44	0.44	0.05	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.04	0.11	0.22	0.06	0.06	0.20	0.16	0.04	0.42	0.43
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1598
c, Capacity [veh/h]	424	1254	391	363	1165	364	109	1495	667	92	767	681
d1, Uniform Delay [s]	47.56	40.60	31.81	49.00	40.98	34.06	51.21	21.93	20.90	51.06	31.25	31.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.48
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.06	20.26	0.91	23.12	13.62	1.72	23.88	0.23	0.35	7.65	27.82	39.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.98	0.17	1.00	0.93	0.26	0.92	0.46	0.37	0.65	0.99	1.02
d, Delay for Lane Group [s/veh]	57.62	60.86	32.73	72.12	54.59	35.78	75.09	22.16	21.25	58.71	59.06	70.88
Lane Group LOS	E	E	C	F	D	D	E	C	C	E	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.80	12.79	1.40	5.99	10.57	2.15	3.38	5.99	4.14	1.77	24.12	23.98
50th-Percentile Queue Length [ft/ln]	144.96	319.74	35.06	149.73	264.13	53.79	84.59	149.86	103.55	44.29	602.93	599.39
95th-Percentile Queue Length [veh/ln]	9.75	18.65	2.52	10.02	15.90	3.87	6.09	10.01	7.46	3.19	32.17	32.51
95th-Percentile Queue Length [ft/ln]	243.69	466.36	63.10	250.54	397.40	96.81	152.27	250.24	186.39	79.72	804.28	812.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.62	60.86	32.73	72.12	54.59	35.78	75.09	22.16	21.25	58.71	61.50	70.88
Movement LOS	E	E	C	F	D	D	E	C	C	E	E	E
d_A, Approach Delay [s/veh]	59.01			57.61			27.01			64.48		
Approach LOS	E			E			C			E		
d_I, Intersection Delay [s/veh]	54.28											
Intersection LOS	D											
Intersection V/C	0.885											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	19	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	1413	73	206	1755	34	15	16	27	42	4	148
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	386	20	56	479	9	4	4	7	11	1	40
Total Analysis Volume [veh/h]	23	1543	80	225	1916	37	16	17	29	46	4	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	17	27	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	36	36	12	45	45	5	5	11	11
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.57	0.57	0.07	0.07	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.31	0.05	0.13	0.37	0.38	0.02	0.02	0.03	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1757	1530	1714	1536
c, Capacity [veh/h]	62	2194	684	263	1936	1007	116	101	228	205
d1, Uniform Delay [s]	37.74	17.85	12.91	33.05	12.13	12.14	35.59	35.60	30.92	33.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	1.92	0.35	7.83	1.81	3.46	1.32	1.53	0.43	7.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.70	0.12	0.86	0.66	0.66	0.28	0.29	0.20	0.81
d, Delay for Lane Group [s/veh]	41.45	19.77	13.26	40.87	13.94	15.61	36.91	37.13	31.35	41.23
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	6.58	0.76	4.53	6.73	7.49	0.65	0.58	0.78	3.39
50th-Percentile Queue Length [ft/ln]	11.75	164.44	19.05	113.16	168.34	187.31	16.29	14.46	19.52	84.85
95th-Percentile Queue Length [veh/ln]	0.85	10.78	1.37	8.02	10.99	11.98	1.17	1.04	1.41	6.11
95th-Percentile Queue Length [ft/ln]	21.14	269.59	34.29	200.40	274.74	299.54	29.33	26.04	35.14	152.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	19.77	13.26	40.87	14.49	15.61	36.91	36.91	37.13	31.35	41.23	41.23
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	19.76			17.23			37.01			39.09		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.68											
Intersection LOS	B											
Intersection V/C	0.603											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	19	0	0	0	6	0	4	4	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	842	106	356	958	237	247	171	24	204	287	264
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	217	27	92	246	61	64	44	6	52	74	68
Total Analysis Volume [veh/h]	65	866	109	366	986	244	254	176	25	210	295	272
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	13	23	0	15	21	0	15	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	11	15	15	10	15	15
g / C, Green / Cycle	0.07	0.28	0.28	0.13	0.33	0.33	0.16	0.22	0.22	0.15	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.07	0.11	0.20	0.16	0.15	0.05	0.02	0.12	0.16	0.18
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	126	1363	425	430	1635	510	270	744	332	254	373	317
d1, Uniform Delay [s]	31.33	22.24	19.72	29.92	19.53	18.56	29.26	22.70	21.89	29.07	26.39	26.84
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	2.27	1.45	4.80	1.66	3.19	14.63	0.16	0.10	6.80	3.77	6.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.64	0.26	0.85	0.60	0.48	0.94	0.24	0.08	0.83	0.79	0.86
d, Delay for Lane Group [s/veh]	34.54	24.51	21.17	34.72	21.19	21.75	43.89	22.86	21.98	35.86	30.17	33.50
Lane Group LOS	C	C	C	C	C	C	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.08	3.89	1.38	2.95	3.93	3.05	4.86	1.08	0.30	3.60	4.58	4.51
50th-Percentile Queue Length [ft/ln]	26.92	97.20	34.43	73.72	98.34	76.27	121.53	26.95	7.49	90.06	114.49	112.86
95th-Percentile Queue Length [veh/ln]	1.94	7.00	2.48	5.31	7.08	5.49	8.48	1.94	0.54	6.48	8.09	8.00
95th-Percentile Queue Length [ft/ln]	48.46	174.97	61.98	132.70	177.01	137.28	211.93	48.51	13.48	162.11	202.23	199.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.54	24.51	21.17	34.72	21.19	21.75	43.89	22.86	21.98	35.86	30.17	33.50
Movement LOS	C	C	C	C	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.79			24.38			34.55			32.87		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.39											
Intersection LOS	C											
Intersection V/C	0.650											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	4.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.251

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	20	31	0	0	0	0	32
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	0	12	18	0	20	31	633	49	13	620	32
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	3	5	0	5	8	165	13	3	162	8
Total Analysis Volume [veh/h]	20	0	13	19	0	21	32	661	51	14	647	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	12	0	0	12	0	0	68	0	0	68	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	64	64	64	64	64	64
g / C, Green / Cycle	0.10	0.10	0.80	0.80	0.80	0.80	0.80	0.80
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.04	0.20	0.20	0.02	0.19	0.19
s, saturation flow rate [veh/h]	1548	1577	772	1800	1755	750	1800	1769
c, Capacity [veh/h]	227	224	652	1440	1404	633	1440	1416
d1, Uniform Delay [s]	33.05	33.21	3.09	2.00	2.00	3.09	1.98	1.98
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.34	1.74	0.14	0.42	0.43	0.06	0.39	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.18	0.05	0.25	0.25	0.02	0.24	0.24
d, Delay for Lane Group [s/veh]	34.39	34.94	3.23	2.42	2.43	3.15	2.37	2.37
Lane Group LOS	C	C	A	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.64	0.78	0.11	0.56	0.55	0.05	0.53	0.52
50th-Percentile Queue Length [ft/ln]	15.95	19.55	2.72	14.07	13.84	1.19	13.20	13.07
95th-Percentile Queue Length [veh/ln]	1.15	1.41	0.20	1.01	1.00	0.09	0.95	0.94
95th-Percentile Queue Length [ft/ln]	28.71	35.18	4.89	25.32	24.92	2.14	23.77	23.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.39	34.39	34.39	34.94	34.94	34.94	3.23	2.42	2.43	3.15	2.37	2.37
Movement LOS	C	C	C	C	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	34.39			34.94			2.46			2.39		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	3.98											
Intersection LOS	A											
Intersection V/C	0.251											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.478

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	428	16	100	413	27	28	110	34	7	92	33
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	122	5	29	118	8	8	31	10	2	26	9
Total Analysis Volume [veh/h]	87	489	18	114	472	31	32	126	39	8	105	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	494	531	535	496	533	540	513	509
Degree of Utilization, x	0.18	0.48	0.47	0.23	0.47	0.47	0.38	0.30

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.63	2.55	2.52	0.88	2.50	2.45	1.79	1.23
95th-Percentile Queue Length [ft]	15.85	63.85	63.06	22.01	62.56	61.22	44.74	30.76
Approach Delay [s/veh]	14.87			14.63			14.33	13.02
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	14.52							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	2	16	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	352	21	88	238	76	44	433	170	10	467	75
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	93	6	23	63	20	12	114	45	3	123	20
Total Analysis Volume [veh/h]	131	371	22	93	251	80	46	456	179	11	492	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	27	27	8	26	26	6	17	17	2	13	13
g / C, Green / Cycle	0.13	0.38	0.38	0.12	0.37	0.37	0.09	0.24	0.24	0.03	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.11	0.01	0.03	0.07	0.05	0.03	0.13	0.12	0.01	0.14	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	443	1313	586	403	1272	568	149	817	365	51	621	277
d1, Uniform Delay [s]	27.49	14.99	13.57	27.91	14.98	14.65	30.11	23.50	23.07	33.29	27.49	24.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.54	0.12	0.29	0.35	0.52	1.17	0.60	1.02	2.11	2.32	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.28	0.04	0.23	0.20	0.14	0.31	0.56	0.49	0.22	0.79	0.28
d, Delay for Lane Group [s/veh]	27.86	15.53	13.69	28.20	15.33	15.17	31.27	24.10	24.10	35.40	29.82	25.39
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.92	1.80	0.20	0.65	1.20	0.79	0.71	2.97	2.34	0.20	3.69	1.06
50th-Percentile Queue Length [ft/ln]	22.91	45.04	5.06	16.36	30.05	19.82	17.77	74.37	58.61	4.93	92.37	26.41
95th-Percentile Queue Length [veh/ln]	1.65	3.24	0.36	1.18	2.16	1.43	1.28	5.35	4.22	0.36	6.65	1.90
95th-Percentile Queue Length [ft/ln]	41.24	81.07	9.10	29.45	54.08	35.67	31.99	133.87	105.49	8.88	166.27	47.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.86	15.53	13.69	28.20	15.33	15.17	31.27	24.10	24.10	35.40	29.82	25.39
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	18.54			18.12			24.58			29.32		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.16											
Intersection LOS	C											
Intersection V/C	0.325											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	3.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	14	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	13	12	555	553	21
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	4	3	157	156	6
Total Analysis Volume [veh/h]	27	15	14	627	625	24
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	12	0	0	63	63	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C
C, Cycle Length [s]	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	63	63	63
g / C, Green / Cycle	0.06	0.84	0.84	0.84
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.35	0.36
s, saturation flow rate [veh/h]	1644	795	1800	1788
c, Capacity [veh/h]	92	659	1508	1498
d1, Uniform Delay [s]	34.30	3.24	1.52	1.55
k, delay calibration	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.55	0.06	0.85	0.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.02	0.42	0.43
d, Delay for Lane Group [s/veh]	37.85	3.30	2.36	2.47
Lane Group LOS	D	A	A	A
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.78	0.05	0.35	0.38
50th-Percentile Queue Length [ft/ln]	19.62	1.23	8.87	9.52
95th-Percentile Queue Length [veh/ln]	1.41	0.09	0.64	0.69
95th-Percentile Queue Length [ft/ln]	35.32	2.21	15.97	17.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.85	37.85	3.30	2.36	2.47	2.47
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	37.85		2.39		2.47	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.54					
Intersection LOS	A					
Intersection V/C	0.435					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.593

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	13	6	6	2	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	435	82	186	414	43	49	456	81	33	445	253
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	118	22	50	112	12	13	124	22	9	121	69
Total Analysis Volume [veh/h]	75	472	89	202	449	47	53	495	88	36	483	274
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.32	0.32	0.15	0.38	0.38	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.12	0.14	0.14	0.06	0.28	0.06	0.04	0.27	0.18
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1741	927	1800	1530	917	1800	1530
c, Capacity [veh/h]	146	579	547	250	688	665	168	600	510	160	600	510
d1, Uniform Delay [s]	26.32	16.48	16.51	24.87	13.35	13.36	28.63	18.46	14.20	28.61	18.29	16.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.76	3.03	3.24	6.06	1.50	1.56	1.06	3.31	0.16	0.70	2.69	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.50	0.50	0.81	0.37	0.37	0.31	0.83	0.17	0.22	0.81	0.54
d, Delay for Lane Group [s/veh]	29.07	19.52	19.75	30.93	14.86	14.92	29.68	21.77	14.36	29.31	20.98	17.18
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.01	3.06	2.95	2.82	2.19	2.14	0.73	5.56	0.71	0.49	5.29	2.57
50th-Percentile Queue Length [ft/ln]	25.33	76.51	73.64	70.50	54.83	53.43	18.13	139.00	17.69	12.18	132.28	64.34
95th-Percentile Queue Length [veh/ln]	1.82	5.51	5.30	5.08	3.95	3.85	1.31	9.43	1.27	0.88	9.06	4.63
95th-Percentile Queue Length [ft/ln]	45.59	137.71	132.55	126.90	98.69	96.18	32.64	235.68	31.84	21.92	226.59	115.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.07	19.61	19.75	30.93	14.89	14.92	29.68	21.77	14.36	29.31	20.98	17.18
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	20.74			19.53			21.40			20.05		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	20.39											
Intersection LOS	C											
Intersection V/C	0.593											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TTM 37884

Vistro File: C:\...\PM - Mitigation.vistro
Report File: C:\...\PM FYp_Improvements.pdf

Scenario 8 Future Year 2040 With Project - Improvements
1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	6	2	0	10	0	0	0	6	3	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**377**	**1162**	**62**	**346**	**1023**	**89**	**95**	**660**	**237**	**57**	**903**	**474**	**5485**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	12	0	0	19	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**21**	**1413**	**73**	**206**	**1755**	**34**	**15**	**16**	**27**	**42**	**4**	**148**	**3754**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	6	19	0	0	0	6	0	4	4	12	51
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**63**	**842**	**106**	**356**	**958**	**237**	**247**	**171**	**24**	**204**	**287**	**264**	**3759**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	18	0	20	31	0	0	0	0	32	101
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**19**	**0**	**12**	**18**	**0**	**20**	**31**	**633**	**49**	**13**	**620**	**32**	**1447**

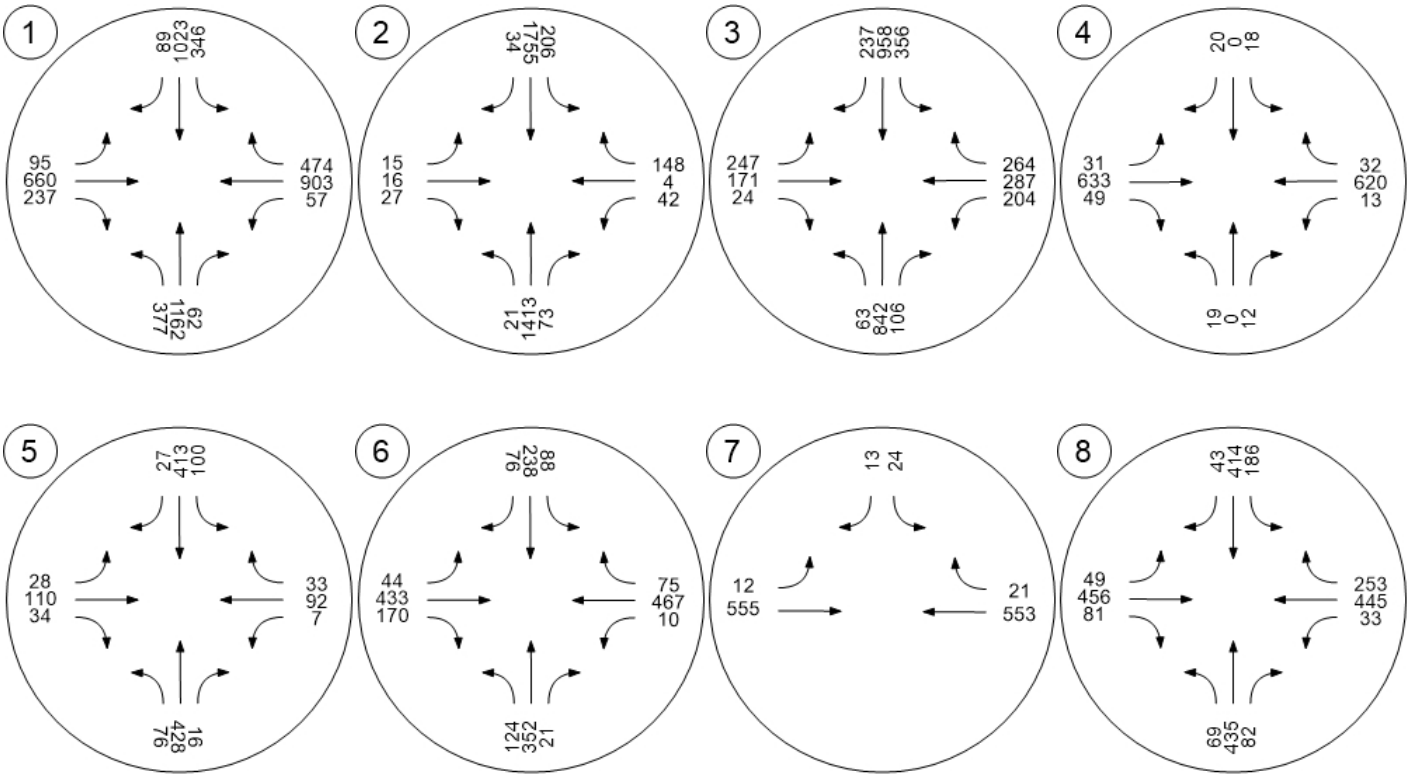
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	0	3	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**76**	**428**	**16**	**100**	**413**	**27**	**28**	**110**	**34**	**7**	**92**	**33**	**1364**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	3	2	16	0	0	29	0	50
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**124**	**352**	**21**	**88**	**238**	**76**	**44**	**433**	**170**	**10**	**467**	**75**	**2098**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	14	26	0	45
		Other	0	0	0	0	0	0	0
		Future Total	**24**	**13**	**12**	**555**	**553**	**21**	**1178**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	13	6	6	2	0	10	0	40
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**69**	**435**	**82**	**186**	**414**	**43**	**49**	**456**	**81**	**33**	**445**	**253**	**2546**

Traffic Volume - Future Total Volume



Year 2040 With Project – Potential Maximum Density

TTM 37884

Vistro File: C:\...\AM.vistro
Report File: C:\...\AM FYp_MD.pdf

Scenario 9 Future Year 2040 With Project MD
1/17/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.728	27.5	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	WB Right	0.718	27.2	C
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.891	43.7	D
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.303	45.4	E
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.613	16.5	C
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.456	24.3	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.886	108.8	F
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.714	25.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	4	0	4	0	0	0	3	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	957	105	404	989	63	85	866	283	52	359	197
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	257	28	109	266	17	23	233	76	14	97	53
Total Analysis Volume [veh/h]	209	1029	113	434	1063	68	91	931	304	56	386	212
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	15	25	0	11	23	0	11	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	11	22	22	6	21	21	5	20	20
g / C, Green / Cycle	0.10	0.25	0.25	0.16	0.31	0.31	0.08	0.30	0.30	0.07	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.21	0.07	0.13	0.22	0.04	0.05	0.27	0.20	0.03	0.18	0.18
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1589
c, Capacity [veh/h]	328	1242	387	519	1523	475	143	1013	452	115	502	443
d1, Uniform Delay [s]	30.37	24.73	21.09	28.70	21.26	17.42	31.08	23.87	21.69	31.53	22.08	22.14
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.05	6.47	1.90	3.64	2.68	0.63	4.62	3.94	1.74	3.19	1.30	1.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.83	0.29	0.84	0.70	0.14	0.64	0.92	0.67	0.49	0.63	0.64
d, Delay for Lane Group [s/veh]	32.43	31.20	23.00	32.34	23.94	18.06	35.70	27.80	23.44	34.72	23.38	23.66
Lane Group LOS	C	C	C	C	C	B	D	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.65	5.51	1.54	3.47	4.84	0.79	1.55	7.02	4.06	0.95	4.18	3.77
50th-Percentile Queue Length [ft/ln]	41.29	137.75	38.60	86.78	121.01	19.63	38.87	175.46	101.41	23.66	104.43	94.26
95th-Percentile Queue Length [veh/ln]	2.97	9.36	2.78	6.25	8.45	1.41	2.80	11.36	7.30	1.70	7.52	6.79
95th-Percentile Queue Length [ft/ln]	74.32	233.99	69.49	156.20	211.21	35.34	69.97	284.08	182.54	42.59	187.97	169.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.43	31.20	23.00	32.34	23.94	18.06	35.70	27.80	23.44	34.72	23.43	23.66
Movement LOS	C	C	C	C	C	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	30.70			26.01			27.34			24.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.46											
Intersection LOS	C											
Intersection V/C	0.728											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1388	55	131	1331	73	12	7	19	66	13	356
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	367	15	35	352	19	3	2	5	17	3	94
Total Analysis Volume [veh/h]	38	1467	58	138	1407	77	13	7	20	70	14	376
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	30	30	8	34	34	4	4	22	22
g / C, Green / Cycle	0.05	0.37	0.37	0.10	0.42	0.42	0.05	0.05	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.02	0.30	0.04	0.08	0.29	0.29	0.01	0.01	0.04	0.25
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1753	1743	1530	1714	1538
c, Capacity [veh/h]	88	1830	571	172	1446	740	93	81	469	421
d1, Uniform Delay [s]	36.89	22.48	16.37	35.30	18.78	18.78	36.37	36.43	22.06	28.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.27	3.81	0.36	8.37	2.58	4.98	1.15	1.55	0.15	15.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

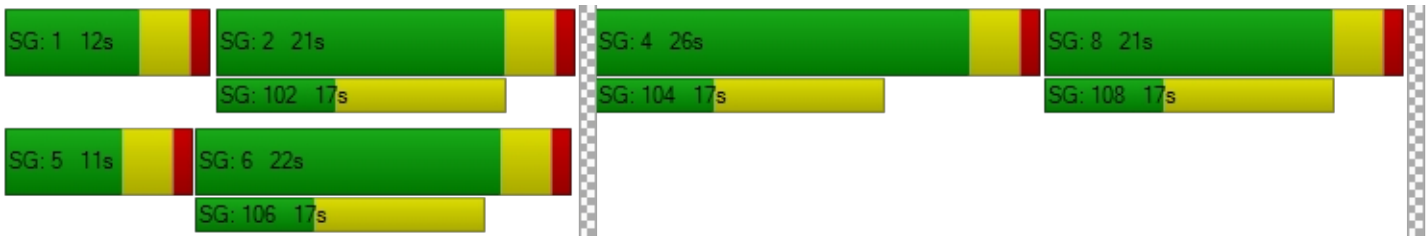
X, volume / capacity	0.43	0.80	0.10	0.80	0.68	0.68	0.22	0.25	0.15	0.93
d, Delay for Lane Group [s/veh]	40.16	26.29	16.73	43.67	21.36	23.75	37.52	37.98	22.21	44.02
Lane Group LOS	D	C	B	D	C	C	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	7.55	0.65	2.87	6.89	7.54	0.40	0.41	0.96	8.54
50th-Percentile Queue Length [ft/ln]	18.62	188.68	16.32	71.78	172.18	188.46	10.06	10.21	23.89	213.44
95th-Percentile Queue Length [veh/ln]	1.34	12.05	1.17	5.17	11.19	12.04	0.72	0.74	1.72	13.33
95th-Percentile Queue Length [ft/ln]	33.52	301.31	29.37	129.21	279.78	301.03	18.11	18.38	43.00	333.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.16	26.29	16.73	43.67	22.08	23.75	37.52	37.52	37.98	22.21	44.02	44.02
Movement LOS	D	C	B	D	C	C	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	26.27			24.00			37.75			40.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	27.20											
Intersection LOS	C											
Intersection V/C	0.718											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	43.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	8	0	0	0	3	0	8	8	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	673	22	121	684	453	352	335	58	102	431	276
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	173	6	31	176	117	91	86	15	26	111	71
Total Analysis Volume [veh/h]	82	693	23	125	704	467	363	345	60	105	444	284
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	16	30	0	23	21	0	28	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	26	26	7	27	27	19	34	34	7	22	22
g / C, Green / Cycle	0.07	0.29	0.29	0.07	0.30	0.30	0.21	0.38	0.38	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.02	0.04	0.14	0.31	0.21	0.10	0.04	0.06	0.25	0.19
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1438	449	248	1470	459	362	1288	575	134	438	372
d1, Uniform Delay [s]	41.07	26.18	22.83	40.06	25.77	31.52	35.52	19.50	18.25	40.73	34.07	31.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.18	0.11	0.11	0.11	0.26	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.46	1.16	0.22	1.57	1.12	46.58	29.35	0.11	0.08	9.40	34.60	3.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

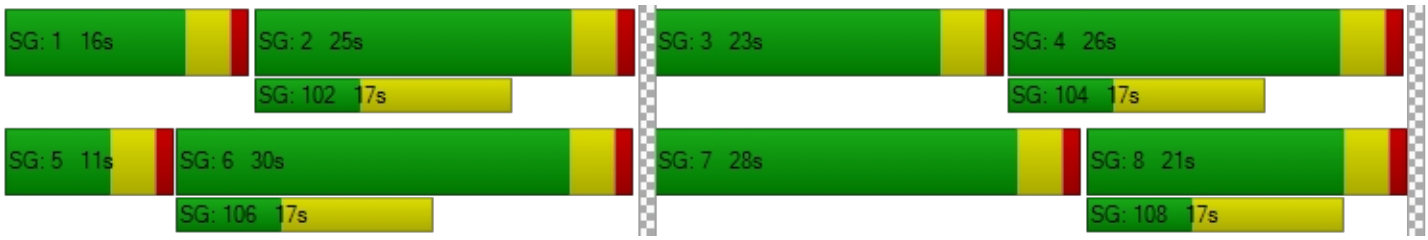
X, volume / capacity	0.70	0.48	0.05	0.50	0.48	1.02	1.00	0.27	0.10	0.78	1.01	0.76
d, Delay for Lane Group [s/veh]	48.52	27.34	23.04	41.63	26.89	78.10	64.87	19.61	18.33	50.13	68.68	35.44
Lane Group LOS	D	C	C	D	C	F	F	B	B	D	F	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.92	3.89	0.35	1.30	3.85	14.78	10.26	2.28	0.75	2.53	13.09	5.74
50th-Percentile Queue Length [ft/ln]	48.06	97.27	8.78	32.40	96.27	369.57	256.53	57.06	18.73	63.26	327.13	143.55
95th-Percentile Queue Length [veh/ln]	3.46	7.00	0.63	2.33	6.93	21.32	15.54	4.11	1.35	4.55	19.17	9.67
95th-Percentile Queue Length [ft/ln]	86.51	175.09	15.81	58.33	173.28	533.07	388.47	102.70	33.71	113.87	479.32	241.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.52	27.34	23.04	41.63	26.89	78.10	64.87	19.61	18.33	50.13	68.68	35.44
Movement LOS	D	C	C	D	C	F	F	B	B	D	F	D
d_A, Approach Delay [s/veh]	29.39			46.76			40.90			55.01		
Approach LOS	C			D			D			E		
d_I, Intersection Delay [s/veh]	43.65											
Intersection LOS	D											
Intersection V/C	0.891											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	45.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.303

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	39	14	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	3	37	0	39	14	423	7	10	776	12
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	1	10	0	10	4	112	2	3	205	3
Total Analysis Volume [veh/h]	16	0	3	39	0	41	15	447	7	11	820	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.00	0.00	0.30	0.00	0.11	0.02	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	41.91	33.86	15.63	45.44	41.54	27.06	9.54	0.00	0.00	8.25	0.00	0.00
Movement LOS	E	D	C	E	E	D	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.50	0.50	0.50	1.86	1.86	1.86	0.05	0.03	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	12.53	12.53	12.53	46.58	46.58	46.58	1.32	0.66	0.00	0.68	0.68	0.68
d_A, Approach Delay [s/veh]	37.76			36.02			0.31			0.11		
Approach LOS	E			E			A			A		
d_I, Intersection Delay [s/veh]	2.71											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	342	3	48	369	34	49	61	31	31	183	45
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	103	1	15	112	10	15	18	9	9	55	14
Total Analysis Volume [veh/h]	41	414	4	58	446	41	59	74	37	37	221	54
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	455	487	488	462	496	504	483	509
Degree of Utilization, x	0.09	0.43	0.43	0.13	0.49	0.48	0.35	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.30	2.12	2.12	0.43	2.67	2.60	1.56	4.08
95th-Percentile Queue Length [ft]	7.38	53.10	52.95	10.67	66.83	64.95	39.12	101.95
Approach Delay [s/veh]	15.14			16.04			14.43	20.64
Approach LOS	C			C			B	C
Intersection Delay [s/veh]	16.54							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	4	33	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	232	15	60	228	134	86	270	76	28	613	69
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	68	4	18	67	39	25	79	22	8	179	20
Total Analysis Volume [veh/h]	113	271	18	70	266	157	100	315	89	33	716	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	21	21	7	20	20	9	21	21	5	17	17
g / C, Green / Cycle	0.13	0.30	0.30	0.11	0.28	0.28	0.12	0.29	0.29	0.07	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.08	0.10	0.06	0.09	0.06	0.02	0.21	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	425	1041	465	357	971	433	211	1000	447	118	814	363
d1, Uniform Delay [s]	27.61	18.46	17.20	28.54	19.53	20.08	28.62	19.36	18.67	30.99	25.77	21.53
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.61	0.16	0.26	0.70	2.34	1.64	0.18	0.22	1.27	3.29	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.26	0.04	0.20	0.27	0.36	0.47	0.31	0.20	0.28	0.88	0.22
d, Delay for Lane Group [s/veh]	27.94	19.07	17.36	28.81	20.23	22.42	30.26	19.54	18.88	32.27	29.06	21.83
Lane Group LOS	C	B	B	C	C	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	1.52	0.20	0.50	1.56	2.06	1.51	1.75	0.97	0.52	5.37	0.97
50th-Percentile Queue Length [ft/ln]	19.77	38.09	4.95	12.48	38.98	51.48	37.66	43.86	24.23	13.11	134.13	24.37
95th-Percentile Queue Length [veh/ln]	1.42	2.74	0.36	0.90	2.81	3.71	2.71	3.16	1.74	0.94	9.16	1.75
95th-Percentile Queue Length [ft/ln]	35.59	68.57	8.91	22.46	70.16	92.67	67.78	78.94	43.61	23.59	229.09	43.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.94	19.07	17.36	28.81	20.23	22.42	30.26	19.54	18.88	32.27	29.06	21.83
Movement LOS	C	B	B	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.49			22.14			21.55			28.48		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.25											
Intersection LOS	C											
Intersection V/C	0.456											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	108.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	29	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	19	49	333	609	210
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	5	14	96	175	60
Total Analysis Volume [veh/h]	144	22	56	383	700	241
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.89	0.06	0.08	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	108.84	96.21	10.29	0.00	0.00	0.00
Movement LOS	F	F	B	A	A	A
95th-Percentile Queue Length [veh/ln]	7.30	7.30	0.25	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	182.62	182.62	6.15	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	107.16		1.31		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	11.88					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	5	14	11	4	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	322	28	192	428	63	56	322	86	34	712	246
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	85	7	51	113	17	15	85	23	9	187	65
Total Analysis Volume [veh/h]	85	339	29	202	451	66	59	339	91	36	749	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	18	18	11	22	22	35	35	35	35	35	35
g / C, Green / Cycle	0.08	0.23	0.23	0.14	0.30	0.30	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.10	0.12	0.15	0.15	0.08	0.19	0.06	0.03	0.42	0.17
s, saturation flow rate [veh/h]	1714	1800	1751	1714	1800	1721	724	1800	1530	1058	1800	1530
c, Capacity [veh/h]	135	421	409	241	532	509	133	838	713	426	838	713
d1, Uniform Delay [s]	33.53	24.59	24.61	31.42	21.83	21.84	36.33	13.21	11.40	18.41	18.36	12.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.38	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.74	3.34	3.48	7.49	3.28	3.45	2.30	0.31	0.08	0.08	11.07	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

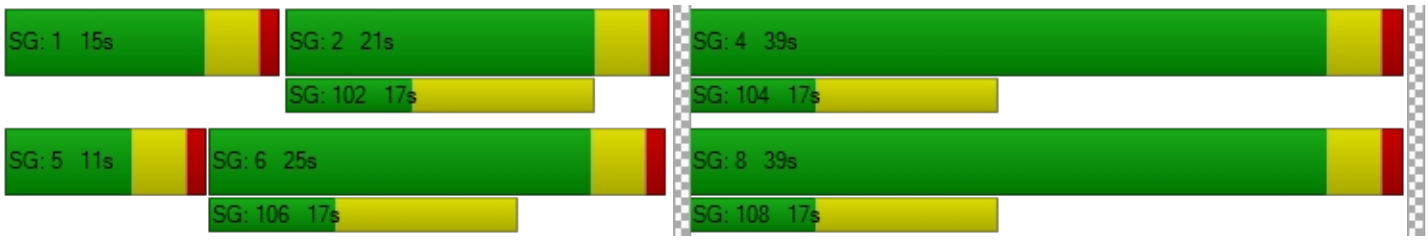
X, volume / capacity	0.63	0.44	0.45	0.84	0.50	0.50	0.44	0.40	0.13	0.08	0.89	0.36
d, Delay for Lane Group [s/veh]	38.26	27.93	28.10	38.92	25.11	25.29	38.63	13.52	11.48	18.49	29.43	13.22
Lane Group LOS	D	C	C	D	C	C	D	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.56	2.92	2.87	3.74	3.85	3.72	1.09	3.14	0.73	0.40	11.99	2.35
50th-Percentile Queue Length [ft/ln]	38.94	72.88	71.83	93.45	96.32	92.96	27.28	78.43	18.14	10.07	299.69	58.72
95th-Percentile Queue Length [veh/ln]	2.80	5.25	5.17	6.73	6.94	6.69	1.96	5.65	1.31	0.73	17.67	4.23
95th-Percentile Queue Length [ft/ln]	70.09	131.19	129.29	168.22	173.38	167.33	49.11	141.17	32.65	18.13	441.65	105.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.26	28.01	28.10	38.92	25.19	25.29	38.63	13.52	11.48	18.49	29.43	13.22
Movement LOS	D	C	C	D	C	C	D	B	B	B	C	B
d_A, Approach Delay [s/veh]	29.94			29.05			16.17			25.03		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	25.32											
Intersection LOS	C											
Intersection V/C	0.714											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 9 Future Year 2040 With Project MD
1/17/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	4	0	4	0	0	0	3	1	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**194**	**957**	**105**	**404**	**989**	**63**	**85**	**866**	**283**	**52**	**359**	**197**	**4554**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	23	0	0	8	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**36**	**1388**	**55**	**131**	**1331**	**73**	**12**	**7**	**19**	**66**	**13**	**356**	**3487**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	3	8	0	0	0	3	0	8	8	23	53
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**673**	**22**	**121**	**684**	**453**	**352**	**335**	**58**	**102**	**431**	**276**	**3587**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	37	0	39	14	0	0	0	0	12	102
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**0**	**3**	**37**	**0**	**39**	**14**	**423**	**7**	**10**	**776**	**12**	**1336**

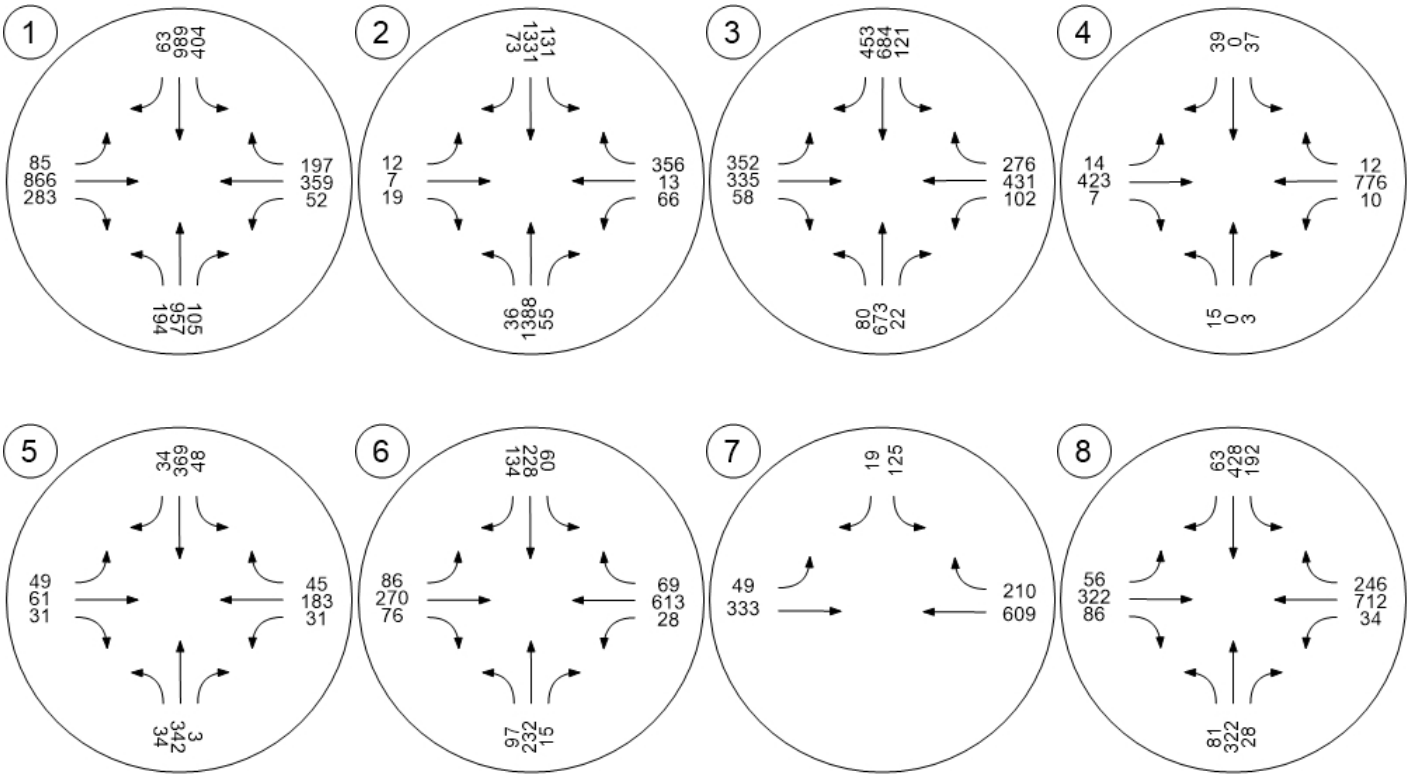
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	1	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**34**	**342**	**3**	**48**	**369**	**34**	**49**	**61**	**31**	**31**	**183**	**45**	**1230**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	4	33	0	0	11	0	49
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**97**	**232**	**15**	**60**	**228**	**134**	**86**	**270**	**76**	**28**	**613**	**69**	**1908**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	4	29	10	0	44
		Other	0	0	0	0	0	0	0
		Future Total	**125**	**19**	**49**	**333**	**609**	**210**	**1345**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	5	14	11	4	0	4	0	39
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**81**	**322**	**28**	**192**	**428**	**63**	**56**	**322**	**86**	**34**	**712**	**246**	**2570**

Traffic Volume - Future Total Volume



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Scenario 9 Future Year 2040 With Project MD
1/17/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.885	54.5	D
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.604	19.7	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.654	27.5	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.258	51.9	F
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	NB Thru	0.479	14.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.329	23.2	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Two-way stop	HCM 2010	SB Left	0.154	29.2	D
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.594	20.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	54.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	8	3	0	13	0	0	0	8	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	378	1164	63	346	1026	89	95	660	239	58	903	474
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	307	17	91	270	23	25	174	63	15	238	125
Total Analysis Volume [veh/h]	398	1227	66	365	1081	94	100	695	252	61	952	499
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	32	0	16	30	0	11	50	0	12	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	28	28	12	26	26	7	48	48	6	47	47
g / C, Green / Cycle	0.13	0.26	0.26	0.11	0.24	0.24	0.06	0.44	0.44	0.05	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.04	0.11	0.22	0.06	0.06	0.20	0.16	0.04	0.42	0.44
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1598
c, Capacity [veh/h]	424	1254	391	363	1165	364	109	1494	667	92	767	681
d1, Uniform Delay [s]	47.58	40.63	31.84	49.00	41.01	34.06	51.21	21.96	20.96	51.06	31.25	31.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.48
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.30	20.72	0.93	23.12	13.91	1.72	23.88	0.23	0.35	7.83	27.80	39.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.98	0.17	1.00	0.93	0.26	0.92	0.47	0.38	0.66	0.99	1.02
d, Delay for Lane Group [s/veh]	57.88	61.35	32.77	72.12	54.92	35.78	75.09	22.18	21.31	58.89	59.05	70.90
Lane Group LOS	E	E	C	F	D	D	E	C	C	E	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.83	12.88	1.43	5.99	10.63	2.15	3.38	6.00	4.18	1.80	24.11	23.98
50th-Percentile Queue Length [ft/ln]	145.69	321.93	35.63	149.73	265.73	53.79	84.59	149.96	104.62	45.10	602.80	599.48
95th-Percentile Queue Length [veh/ln]	9.79	18.76	2.57	10.02	15.98	3.87	6.09	10.02	7.53	3.25	32.16	32.52
95th-Percentile Queue Length [ft/ln]	244.67	469.05	64.13	250.54	399.40	96.81	152.27	250.38	188.31	81.18	804.12	812.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.88	61.35	32.77	72.12	54.92	35.78	75.09	22.18	21.31	58.89	61.49	70.90
Movement LOS	E	E	C	F	D	D	E	C	C	E	E	E
d_A, Approach Delay [s/veh]	59.42			57.83			27.03			64.49		
Approach LOS	E			E			C			E		
d_I, Intersection Delay [s/veh]	54.46											
Intersection LOS	D											
Intersection V/C	0.885											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	1417	73	206	1761	34	15	16	27	42	4	148
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	387	20	56	481	9	4	4	7	11	1	40
Total Analysis Volume [veh/h]	23	1547	80	225	1922	37	16	17	29	46	4	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	17	27	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	36	36	12	45	45	5	5	11	11
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.57	0.57	0.07	0.07	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.32	0.05	0.13	0.38	0.38	0.02	0.02	0.03	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1757	1530	1714	1536
c, Capacity [veh/h]	62	2194	684	263	1936	1007	116	101	228	205
d1, Uniform Delay [s]	37.74	17.87	12.91	33.05	12.15	12.17	35.59	35.60	30.92	33.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	1.94	0.35	7.83	1.83	3.50	1.32	1.53	0.43	7.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.71	0.12	0.86	0.67	0.67	0.28	0.29	0.20	0.81
d, Delay for Lane Group [s/veh]	41.45	19.81	13.26	40.87	13.98	15.66	36.91	37.13	31.35	41.23
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	6.60	0.76	4.53	6.77	7.53	0.65	0.58	0.78	3.39
50th-Percentile Queue Length [ft/ln]	11.75	165.10	19.05	113.16	169.22	188.34	16.29	14.46	19.52	84.85
95th-Percentile Queue Length [veh/ln]	0.85	10.82	1.37	8.02	11.04	12.03	1.17	1.04	1.41	6.11
95th-Percentile Queue Length [ft/ln]	21.14	270.47	34.29	200.40	275.88	300.87	29.33	26.04	35.14	152.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	19.81	13.26	40.87	14.53	15.66	36.91	36.91	37.13	31.35	41.23	41.23
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	19.79			17.26			37.01			39.09		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.70											
Intersection LOS	B											
Intersection V/C	0.604											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	25	0	0	0	8	0	5	5	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	842	108	362	958	237	247	173	24	205	288	268
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	217	28	93	246	61	64	44	6	53	74	69
Total Analysis Volume [veh/h]	65	866	111	372	986	244	254	178	25	211	296	276
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	13	23	0	15	21	0	15	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	11	15	15	10	15	15
g / C, Green / Cycle	0.07	0.28	0.28	0.13	0.33	0.33	0.16	0.22	0.22	0.15	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.07	0.11	0.20	0.16	0.15	0.05	0.02	0.12	0.16	0.18
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	126	1352	422	430	1625	507	270	749	335	255	377	321
d1, Uniform Delay [s]	31.33	22.37	19.86	29.98	19.66	18.68	29.26	22.62	21.80	29.05	26.27	26.78
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	2.34	1.52	5.30	1.69	3.25	14.63	0.16	0.09	6.80	3.62	6.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.64	0.26	0.86	0.61	0.48	0.94	0.24	0.07	0.83	0.78	0.86
d, Delay for Lane Group [s/veh]	34.54	24.71	21.38	35.29	21.35	21.93	43.89	22.78	21.89	35.85	29.89	33.55
Lane Group LOS	C	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.08	3.91	1.41	3.03	3.96	3.07	4.86	1.09	0.30	3.62	4.57	4.59
50th-Percentile Queue Length [ft/ln]	26.92	97.73	35.31	75.70	98.89	76.72	121.53	27.19	7.47	90.47	114.24	114.65
95th-Percentile Queue Length [veh/ln]	1.94	7.04	2.54	5.45	7.12	5.52	8.48	1.96	0.54	6.51	8.08	8.10
95th-Percentile Queue Length [ft/ln]	48.46	175.92	63.56	136.27	178.00	138.10	211.93	48.95	13.44	162.85	201.88	202.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.54	24.71	21.38	35.29	21.35	21.93	43.89	22.78	21.89	35.85	29.89	33.55
Movement LOS	C	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.97			24.68			34.47			32.79		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.54											
Intersection LOS	C											
Intersection V/C	0.654											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	51.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.258

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	24	0	26	41	0	0	0	0	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	0	12	24	0	26	41	633	49	13	620	42
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	3	6	0	7	11	165	13	3	162	11
Total Analysis Volume [veh/h]	20	0	13	25	0	27	43	661	51	14	647	44
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.00	0.03	0.26	0.00	0.06	0.05	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	50.38	43.15	20.55	51.88	46.39	22.61	9.14	0.00	0.00	9.08	0.00	0.00
Movement LOS	F	E	C	F	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.87	0.87	0.87	1.27	1.27	1.27	0.14	0.07	0.00	0.04	0.04	0.04
95th-Percentile Queue Length [ft/ln]	21.81	21.81	21.81	31.79	31.79	31.79	3.52	1.76	0.00	1.10	1.10	1.10
d_A, Approach Delay [s/veh]	38.63			36.68			0.52			0.18		
Approach LOS	E			E			A			A		
d_I, Intersection Delay [s/veh]	2.40											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.479

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	4	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	429	16	100	414	27	28	110	34	7	92	33
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	123	5	29	118	8	8	31	10	2	26	9
Total Analysis Volume [veh/h]	87	490	18	114	473	31	32	126	39	8	105	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	494	531	535	496	533	540	513	509
Degree of Utilization, x	0.18	0.48	0.48	0.23	0.47	0.47	0.38	0.30

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.63	2.56	2.53	0.88	2.51	2.46	1.79	1.23
95th-Percentile Queue Length [ft]	15.86	64.11	63.31	22.02	62.82	61.46	44.77	30.78
Approach Delay [s/veh]	14.89			14.65			14.34	13.03
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	14.55							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.329

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	3	21	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	352	21	88	238	77	45	438	170	10	476	75
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	93	6	23	63	20	12	115	45	3	125	20
Total Analysis Volume [veh/h]	131	371	22	93	251	81	47	462	179	11	502	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	27	27	8	26	26	6	17	17	2	13	13
g / C, Green / Cycle	0.13	0.38	0.38	0.12	0.37	0.37	0.09	0.24	0.24	0.03	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.11	0.01	0.03	0.07	0.05	0.03	0.13	0.12	0.01	0.15	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	443	1299	580	403	1259	562	151	831	371	51	631	282
d1, Uniform Delay [s]	27.49	15.19	13.74	27.91	15.17	14.85	30.05	23.30	22.83	33.29	27.40	24.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.55	0.12	0.29	0.36	0.54	1.17	0.58	0.97	2.11	2.34	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.29	0.04	0.23	0.20	0.14	0.31	0.56	0.48	0.22	0.80	0.28
d, Delay for Lane Group [s/veh]	27.86	15.74	13.86	28.20	15.53	15.39	31.22	23.89	23.81	35.40	29.73	25.19
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.92	1.82	0.20	0.65	1.21	0.81	0.73	3.00	2.33	0.20	3.77	1.05
50th-Percentile Queue Length [ft/ln]	22.91	45.48	5.11	16.36	30.33	20.28	18.13	74.94	58.13	4.93	94.15	26.27
95th-Percentile Queue Length [veh/ln]	1.65	3.27	0.37	1.18	2.18	1.46	1.31	5.40	4.19	0.36	6.78	1.89
95th-Percentile Queue Length [ft/ln]	41.24	81.87	9.19	29.45	54.60	36.50	32.63	134.90	104.63	8.88	169.46	47.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.86	15.74	13.86	28.20	15.53	15.39	31.22	23.89	23.81	35.40	29.73	25.19
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	18.69			18.28			24.37			29.23		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.16											
Intersection LOS	C											
Intersection V/C	0.329											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	29.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.154

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	18	34	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	14	13	559	561	21
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	4	4	158	158	6
Total Analysis Volume [veh/h]	27	16	15	632	634	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.03	0.02	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	29.20	16.19	8.89	0.00	0.00	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.68	0.68	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	16.88	16.88	1.22	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	24.36		0.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.88					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.594

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	17	7	8	3	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	435	82	186	414	47	50	458	82	33	448	253
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	118	22	50	112	13	14	124	22	9	121	69
Total Analysis Volume [veh/h]	76	472	89	202	449	51	54	497	89	36	486	274
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.32	0.32	0.15	0.38	0.38	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.12	0.14	0.14	0.06	0.28	0.06	0.04	0.27	0.18
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1736	924	1800	1530	915	1800	1530
c, Capacity [veh/h]	147	579	547	250	687	663	166	600	510	159	600	510
d1, Uniform Delay [s]	26.30	16.48	16.51	24.87	13.40	13.40	28.77	18.48	14.21	28.69	18.33	16.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.78	3.03	3.24	6.06	1.53	1.59	1.12	3.43	0.16	0.72	2.84	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.50	0.50	0.81	0.37	0.37	0.32	0.83	0.17	0.23	0.81	0.54
d, Delay for Lane Group [s/veh]	29.08	19.52	19.75	30.93	14.93	15.00	29.89	21.91	14.37	29.41	21.17	17.18
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.03	3.06	2.95	2.82	2.22	2.16	0.74	5.61	0.72	0.49	5.36	2.57
50th-Percentile Queue Length [ft/ln]	25.66	76.51	73.63	70.50	55.53	54.01	18.58	140.18	17.90	12.21	133.90	64.34
95th-Percentile Queue Length [veh/ln]	1.85	5.51	5.30	5.08	4.00	3.89	1.34	9.49	1.29	0.88	9.15	4.63
95th-Percentile Queue Length [ft/ln]	46.20	137.72	132.54	126.90	99.96	97.22	33.45	237.27	32.22	21.98	228.79	115.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.08	19.61	19.75	30.93	14.96	15.00	29.89	21.91	14.37	29.41	21.17	17.18
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	20.76			19.56			21.54			20.17		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	20.46											
Intersection LOS	C											
Intersection V/C	0.594											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Scenario 9 Future Year 2040 With Project MD
1/17/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	8	3	0	13	0	0	0	8	4	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**378**	**1164**	**63**	**346**	**1026**	**89**	**95**	**660**	**239**	**58**	**903**	**474**	**5495**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	16	0	0	25	0	0	0	0	0	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**21**	**1417**	**73**	**206**	**1761**	**34**	**15**	**16**	**27**	**42**	**4**	**148**	**3764**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	8	25	0	0	0	8	0	5	5	16	67
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**63**	**842**	**108**	**362**	**958**	**237**	**247**	**173**	**24**	**205**	**288**	**268**	**3775**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	24	0	26	41	0	0	0	0	42	133
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**19**	**0**	**12**	**24**	**0**	**26**	**41**	**633**	**49**	**13**	**620**	**42**	**1479**

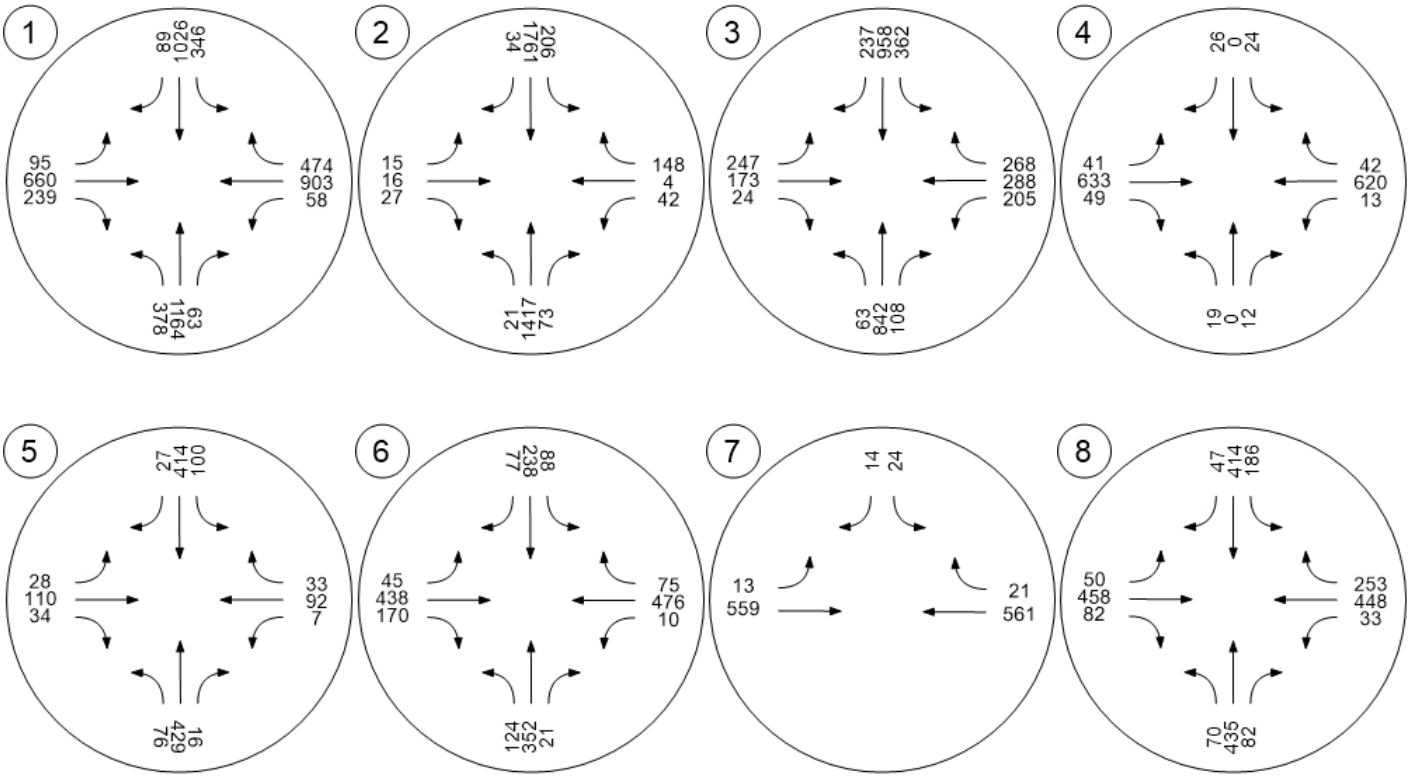
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	4	0	0	0	0	0	0	0	7
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**76**	**429**	**16**	**100**	**414**	**27**	**28**	**110**	**34**	**7**	**92**	**33**	**1366**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	4	3	21	0	0	38	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**124**	**352**	**21**	**88**	**238**	**77**	**45**	**438**	**170**	**10**	**476**	**75**	**2114**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	3	18	34	0	59
		Other	0	0	0	0	0	0	0
		Future Total	**24**	**14**	**13**	**559**	**561**	**21**	**1192**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	17	7	8	3	0	13	0	52
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**70**	**435**	**82**	**186**	**414**	**47**	**50**	**458**	**82**	**33**	**448**	**253**	**2558**

Traffic Volume - Future Total Volume



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Scenario 9 Future Year 2040 With Project MD - Improvements

Report File: C:\...\AM FYp_MD_Improvements.pdf

1/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.728	27.5	C
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	WB Right	0.718	27.2	C
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.891	43.7	D
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.325	4.0	A
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	WB Thru	0.613	16.5	C
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.456	24.3	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.744	9.7	A
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.714	25.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	635	68	271	661	42	57	581	188	34	241	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	4	0	4	0	0	0	3	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	957	105	404	989	63	85	866	283	52	359	197
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	257	28	109	266	17	23	233	76	14	97	53
Total Analysis Volume [veh/h]	209	1029	113	434	1063	68	91	931	304	56	386	212
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	15	25	0	11	23	0	11	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	11	22	22	6	21	21	5	20	20
g / C, Green / Cycle	0.10	0.25	0.25	0.16	0.31	0.31	0.08	0.30	0.30	0.07	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.21	0.07	0.13	0.22	0.04	0.05	0.27	0.20	0.03	0.18	0.18
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1589
c, Capacity [veh/h]	328	1242	387	519	1523	475	143	1013	452	115	502	443
d1, Uniform Delay [s]	30.37	24.73	21.09	28.70	21.26	17.42	31.08	23.87	21.69	31.53	22.08	22.14
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.05	6.47	1.90	3.64	2.68	0.63	4.62	3.94	1.74	3.19	1.30	1.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.83	0.29	0.84	0.70	0.14	0.64	0.92	0.67	0.49	0.63	0.64
d, Delay for Lane Group [s/veh]	32.43	31.20	23.00	32.34	23.94	18.06	35.70	27.80	23.44	34.72	23.38	23.66
Lane Group LOS	C	C	C	C	C	B	D	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.65	5.51	1.54	3.47	4.84	0.79	1.55	7.02	4.06	0.95	4.18	3.77
50th-Percentile Queue Length [ft/ln]	41.29	137.75	38.60	86.78	121.01	19.63	38.87	175.46	101.41	23.66	104.43	94.26
95th-Percentile Queue Length [veh/ln]	2.97	9.36	2.78	6.25	8.45	1.41	2.80	11.36	7.30	1.70	7.52	6.79
95th-Percentile Queue Length [ft/ln]	74.32	233.99	69.49	156.20	211.21	35.34	69.97	284.08	182.54	42.59	187.97	169.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.43	31.20	23.00	32.34	23.94	18.06	35.70	27.80	23.44	34.72	23.43	23.66
Movement LOS	C	C	C	C	C	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	30.70			26.01			27.34			24.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.46											
Intersection LOS	C											
Intersection V/C	0.728											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	916	37	88	888	49	8	5	13	44	9	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1388	55	131	1331	73	12	7	19	66	13	356
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	367	15	35	352	19	3	2	5	17	3	94
Total Analysis Volume [veh/h]	38	1467	58	138	1407	77	13	7	20	70	14	376
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	12	22	0	0	21	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	30	30	8	34	34	4	4	22	22
g / C, Green / Cycle	0.05	0.37	0.37	0.10	0.42	0.42	0.05	0.05	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.02	0.30	0.04	0.08	0.29	0.29	0.01	0.01	0.04	0.25
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1753	1743	1530	1714	1538
c, Capacity [veh/h]	88	1830	571	172	1446	740	93	81	469	421
d1, Uniform Delay [s]	36.89	22.48	16.37	35.30	18.78	18.78	36.37	36.43	22.06	28.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.27	3.81	0.36	8.37	2.58	4.98	1.15	1.55	0.15	15.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

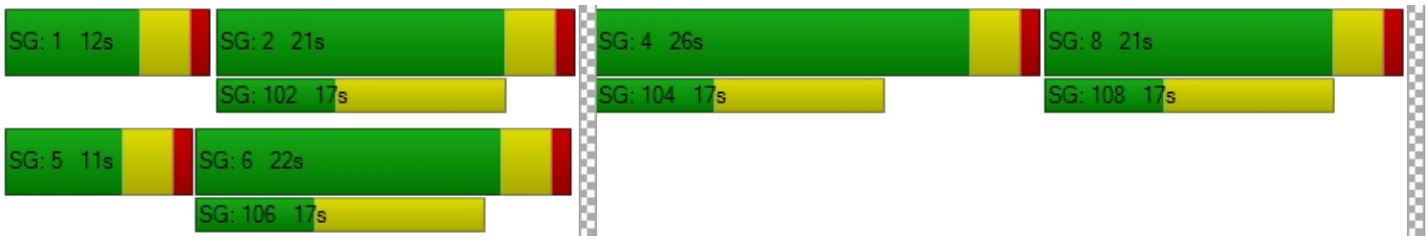
X, volume / capacity	0.43	0.80	0.10	0.80	0.68	0.68	0.22	0.25	0.15	0.93
d, Delay for Lane Group [s/veh]	40.16	26.29	16.73	43.67	21.36	23.75	37.52	37.98	22.21	44.02
Lane Group LOS	D	C	B	D	C	C	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	7.55	0.65	2.87	6.89	7.54	0.40	0.41	0.96	8.54
50th-Percentile Queue Length [ft/ln]	18.62	188.68	16.32	71.78	172.18	188.46	10.06	10.21	23.89	213.44
95th-Percentile Queue Length [veh/ln]	1.34	12.05	1.17	5.17	11.19	12.04	0.72	0.74	1.72	13.33
95th-Percentile Queue Length [ft/ln]	33.52	301.31	29.37	129.21	279.78	301.03	18.11	18.38	43.00	333.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.16	26.29	16.73	43.67	22.08	23.75	37.52	37.52	37.98	22.21	44.02	44.02
Movement LOS	D	C	B	D	C	C	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	26.27			24.00			37.75			40.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	27.20											
Intersection LOS	C											
Intersection V/C	0.718											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	43.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	452	13	76	459	304	236	223	39	63	284	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	8	0	0	0	3	0	8	8	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	673	22	121	684	453	352	335	58	102	431	276
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	173	6	31	176	117	91	86	15	26	111	71
Total Analysis Volume [veh/h]	82	693	23	125	704	467	363	345	60	105	444	284
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	16	30	0	23	21	0	28	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	26	26	7	27	27	19	34	34	7	22	22
g / C, Green / Cycle	0.07	0.29	0.29	0.07	0.30	0.30	0.21	0.38	0.38	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.02	0.04	0.14	0.31	0.21	0.10	0.04	0.06	0.25	0.19
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	117	1438	449	248	1470	459	362	1288	575	134	438	372
d1, Uniform Delay [s]	41.07	26.18	22.83	40.06	25.77	31.52	35.52	19.50	18.25	40.73	34.07	31.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.18	0.11	0.11	0.11	0.26	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.46	1.16	0.22	1.57	1.12	46.58	29.35	0.11	0.08	9.40	34.60	3.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

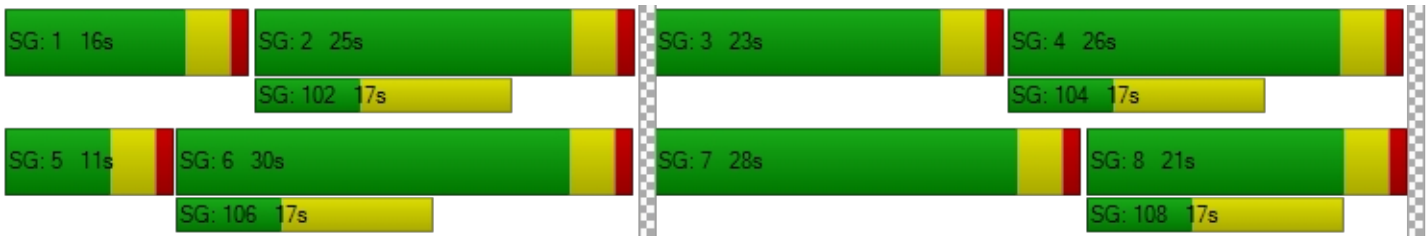
X, volume / capacity	0.70	0.48	0.05	0.50	0.48	1.02	1.00	0.27	0.10	0.78	1.01	0.76
d, Delay for Lane Group [s/veh]	48.52	27.34	23.04	41.63	26.89	78.10	64.87	19.61	18.33	50.13	68.68	35.44
Lane Group LOS	D	C	C	D	C	F	F	B	B	D	F	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.92	3.89	0.35	1.30	3.85	14.78	10.26	2.28	0.75	2.53	13.09	5.74
50th-Percentile Queue Length [ft/ln]	48.06	97.27	8.78	32.40	96.27	369.57	256.53	57.06	18.73	63.26	327.13	143.55
95th-Percentile Queue Length [veh/ln]	3.46	7.00	0.63	2.33	6.93	21.32	15.54	4.11	1.35	4.55	19.17	9.67
95th-Percentile Queue Length [ft/ln]	86.51	175.09	15.81	58.33	173.28	533.07	388.47	102.70	33.71	113.87	479.32	241.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.52	27.34	23.04	41.63	26.89	78.10	64.87	19.61	18.33	50.13	68.68	35.44
Movement LOS	D	C	C	D	C	F	F	B	B	D	F	D
d_A, Approach Delay [s/veh]	29.39			46.76			40.90			55.01		
Approach LOS	C			D			D			E		
d_I, Intersection Delay [s/veh]	43.65											
Intersection LOS	D											
Intersection V/C	0.891											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	4.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	10	0	2	0	0	0	0	284	5	7	521	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	39	14	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	3	37	0	39	14	423	7	10	776	12
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	1	10	0	10	4	112	2	3	205	3
Total Analysis Volume [veh/h]	16	0	3	39	0	41	15	447	7	11	820	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	12	0	0	12	0	0	48	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	47	47	47	47	47	47
g / C, Green / Cycle	0.09	0.09	0.78	0.78	0.78	0.78	0.78	0.78
(v / s)_i Volume / Saturation Flow Rate	0.01	0.05	0.02	0.13	0.13	0.01	0.23	0.23
s, saturation flow rate [veh/h]	1307	1604	669	1800	1790	952	1800	1790
c, Capacity [veh/h]	225	230	570	1402	1395	794	1402	1395
d1, Uniform Delay [s]	25.28	26.20	3.30	1.68	1.68	2.58	1.91	1.91
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.90	0.09	0.25	0.25	0.03	0.54	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

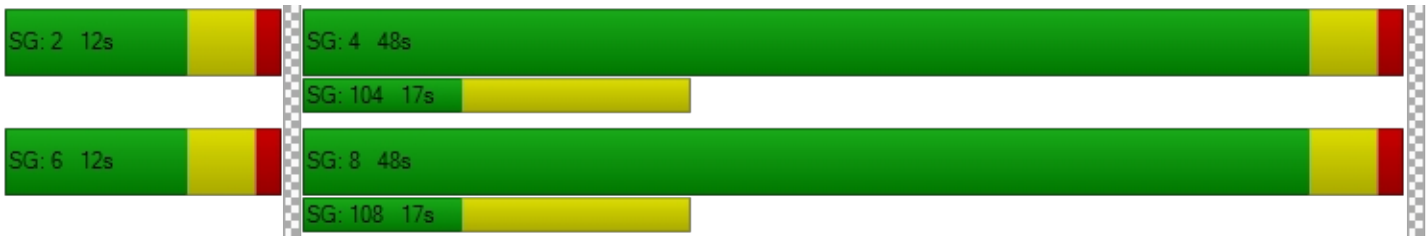
X, volume / capacity	0.08	0.35	0.03	0.16	0.16	0.01	0.30	0.30
d, Delay for Lane Group [s/veh]	25.44	27.10	3.38	1.92	1.93	2.61	2.45	2.45
Lane Group LOS	C	C	A	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.23	1.04	0.04	0.12	0.12	0.02	0.27	0.27
50th-Percentile Queue Length [ft/ln]	5.85	25.88	1.06	3.09	3.10	0.53	6.70	6.70
95th-Percentile Queue Length [veh/ln]	0.42	1.86	0.08	0.22	0.22	0.04	0.48	0.48
95th-Percentile Queue Length [ft/ln]	10.53	46.58	1.91	5.57	5.57	0.96	12.07	12.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.44	25.44	25.44	27.10	27.10	27.10	3.38	1.93	1.93	2.61	2.45	2.45
Movement LOS	C	C	C	C	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	25.44			27.10			1.97			2.45		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	4.00											
Intersection LOS	A											
Intersection V/C	0.325											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	23	227	2	32	247	23	33	41	21	21	123	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	342	3	48	369	34	49	61	31	31	183	45
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	103	1	15	112	10	15	18	9	9	55	14
Total Analysis Volume [veh/h]	41	414	4	58	446	41	59	74	37	37	221	54
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	455	487	488	462	496	504	483	509
Degree of Utilization, x	0.09	0.43	0.43	0.13	0.49	0.48	0.35	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.30	2.12	2.12	0.43	2.67	2.60	1.56	4.08
95th-Percentile Queue Length [ft]	7.38	53.10	52.95	10.67	66.83	64.95	39.12	101.95
Approach Delay [s/veh]	15.14			16.04			14.43	20.64
Approach LOS	C			C			B	C
Intersection Delay [s/veh]	16.54							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	65	156	10	40	153	89	55	159	51	19	404	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	4	33	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	232	15	60	228	134	86	270	76	28	613	69
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	68	4	18	67	39	25	79	22	8	179	20
Total Analysis Volume [veh/h]	113	271	18	70	266	157	100	315	89	33	716	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	21	21	7	20	20	9	21	21	5	17	17
g / C, Green / Cycle	0.13	0.30	0.30	0.11	0.28	0.28	0.12	0.29	0.29	0.07	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.01	0.02	0.08	0.10	0.06	0.09	0.06	0.02	0.21	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	425	1041	465	357	971	433	211	1000	447	118	814	363
d1, Uniform Delay [s]	27.61	18.46	17.20	28.54	19.53	20.08	28.62	19.36	18.67	30.99	25.77	21.53
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.61	0.16	0.26	0.70	2.34	1.64	0.18	0.22	1.27	3.29	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.26	0.04	0.20	0.27	0.36	0.47	0.31	0.20	0.28	0.88	0.22
d, Delay for Lane Group [s/veh]	27.94	19.07	17.36	28.81	20.23	22.42	30.26	19.54	18.88	32.27	29.06	21.83
Lane Group LOS	C	B	B	C	C	C	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.79	1.52	0.20	0.50	1.56	2.06	1.51	1.75	0.97	0.52	5.37	0.97
50th-Percentile Queue Length [ft/ln]	19.77	38.09	4.95	12.48	38.98	51.48	37.66	43.86	24.23	13.11	134.13	24.37
95th-Percentile Queue Length [veh/ln]	1.42	2.74	0.36	0.90	2.81	3.71	2.71	3.16	1.74	0.94	9.16	1.75
95th-Percentile Queue Length [ft/ln]	35.59	68.57	8.91	22.46	70.16	92.67	67.78	78.94	43.61	23.59	229.09	43.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.94	19.07	17.36	28.81	20.23	22.42	30.26	19.54	18.88	32.27	29.06	21.83
Movement LOS	C	B	B	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	21.49			22.14			21.55			28.48		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.25											
Intersection LOS	C											
Intersection V/C	0.456											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.744

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	84	12	30	204	402	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	29	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	19	49	333	609	210
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	5	14	96	175	60
Total Analysis Volume [veh/h]	144	22	56	383	700	241
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	49	0	0	11	11	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C
C, Cycle Length [s]	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	44	44	44
g / C, Green / Cycle	0.13	0.74	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.10	0.09	0.21	0.55
s, saturation flow rate [veh/h]	1687	605	1800	1722
c, Capacity [veh/h]	216	344	1329	1272
d1, Uniform Delay [s]	25.31	13.14	2.61	4.53
k, delay calibration	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.61	1.02	0.55	3.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

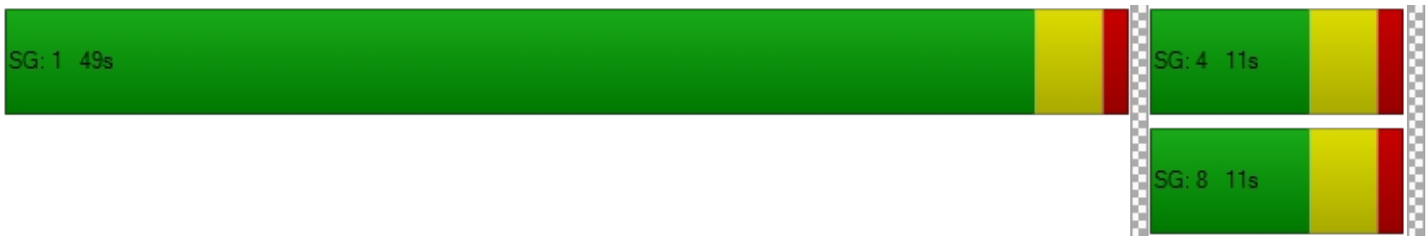
X, volume / capacity	0.77	0.16	0.29	0.74
d, Delay for Lane Group [s/veh]	30.92	14.16	3.16	8.42
Lane Group LOS	C	B	A	A
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.36	0.52	0.58	2.99
50th-Percentile Queue Length [ft/ln]	59.01	13.12	14.53	74.82
95th-Percentile Queue Length [veh/ln]	4.25	0.94	1.05	5.39
95th-Percentile Queue Length [ft/ln]	106.22	23.62	26.15	134.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.92	30.92	14.16	3.16	8.42	8.42
Movement LOS	C	C	B	A	A	A
d_A, Approach Delay [s/veh]	30.92		4.56		8.42	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	9.74					
Intersection LOS	A					
Intersection V/C	0.744					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	216	19	129	287	39	28	209	55	23	475	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	5	14	11	4	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	322	28	192	428	63	56	322	86	34	712	246
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	85	7	51	113	17	15	85	23	9	187	65
Total Analysis Volume [veh/h]	85	339	29	202	451	66	59	339	91	36	749	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	18	18	11	22	22	35	35	35	35	35	35
g / C, Green / Cycle	0.08	0.23	0.23	0.14	0.30	0.30	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.10	0.12	0.15	0.15	0.08	0.19	0.06	0.03	0.42	0.17
s, saturation flow rate [veh/h]	1714	1800	1751	1714	1800	1721	724	1800	1530	1058	1800	1530
c, Capacity [veh/h]	135	421	409	241	532	509	133	838	713	426	838	713
d1, Uniform Delay [s]	33.53	24.59	24.61	31.42	21.83	21.84	36.33	13.21	11.40	18.41	18.36	12.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.38	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.74	3.34	3.48	7.49	3.28	3.45	2.30	0.31	0.08	0.08	11.07	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

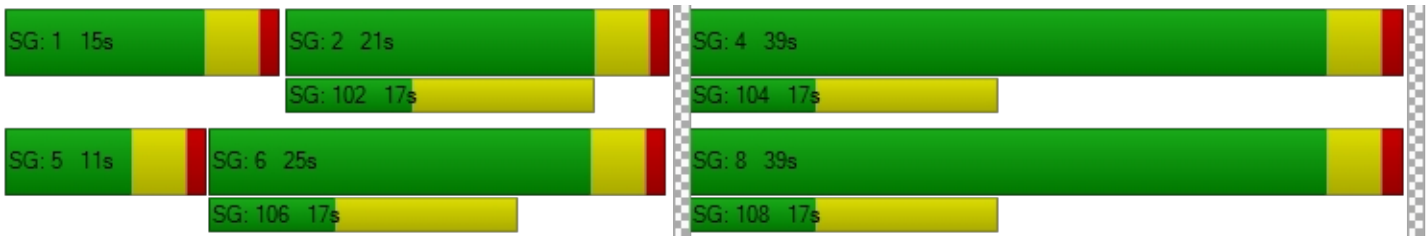
X, volume / capacity	0.63	0.44	0.45	0.84	0.50	0.50	0.44	0.40	0.13	0.08	0.89	0.36
d, Delay for Lane Group [s/veh]	38.26	27.93	28.10	38.92	25.11	25.29	38.63	13.52	11.48	18.49	29.43	13.22
Lane Group LOS	D	C	C	D	C	C	D	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.56	2.92	2.87	3.74	3.85	3.72	1.09	3.14	0.73	0.40	11.99	2.35
50th-Percentile Queue Length [ft/ln]	38.94	72.88	71.83	93.45	96.32	92.96	27.28	78.43	18.14	10.07	299.69	58.72
95th-Percentile Queue Length [veh/ln]	2.80	5.25	5.17	6.73	6.94	6.69	1.96	5.65	1.31	0.73	17.67	4.23
95th-Percentile Queue Length [ft/ln]	70.09	131.19	129.29	168.22	173.38	167.33	49.11	141.17	32.65	18.13	441.65	105.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.26	28.01	28.10	38.92	25.19	25.29	38.63	13.52	11.48	18.49	29.43	13.22
Movement LOS	D	C	C	D	C	C	D	B	B	B	C	B
d_A, Approach Delay [s/veh]	29.94			29.05			16.17			25.03		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	25.32											
Intersection LOS	C											
Intersection V/C	0.714											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



TTM 37884

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Scenario 9 Future Year 2040 With Project MD - Improvements

Report File: C:\...\AM FYp_MD_Improvements.pdf

1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	125	635	68	271	661	42	57	581	188	34	241	132	3035
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	4	0	4	0	0	0	3	1	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**194**	**957**	**105**	**404**	**989**	**63**	**85**	**866**	**283**	**52**	**359**	**197**	**4554**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	24	916	37	88	888	49	8	5	13	44	9	239	2320
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	23	0	0	8	0	0	0	0	0	0	0	31
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**36**	**1388**	**55**	**131**	**1331**	**73**	**12**	**7**	**19**	**66**	**13**	**356**	**3487**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	54	452	13	76	459	304	236	223	39	63	284	170	2373
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	3	8	0	0	0	3	0	8	8	23	53
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**80**	**673**	**22**	**121**	**684**	**453**	**352**	**335**	**58**	**102**	**431**	**276**	**3587**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	10	0	2	0	0	0	0	284	5	7	521	0	829
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	37	0	39	14	0	0	0	0	12	102
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**0**	**3**	**37**	**0**	**39**	**14**	**423**	**7**	**10**	**776**	**12**	**1336**

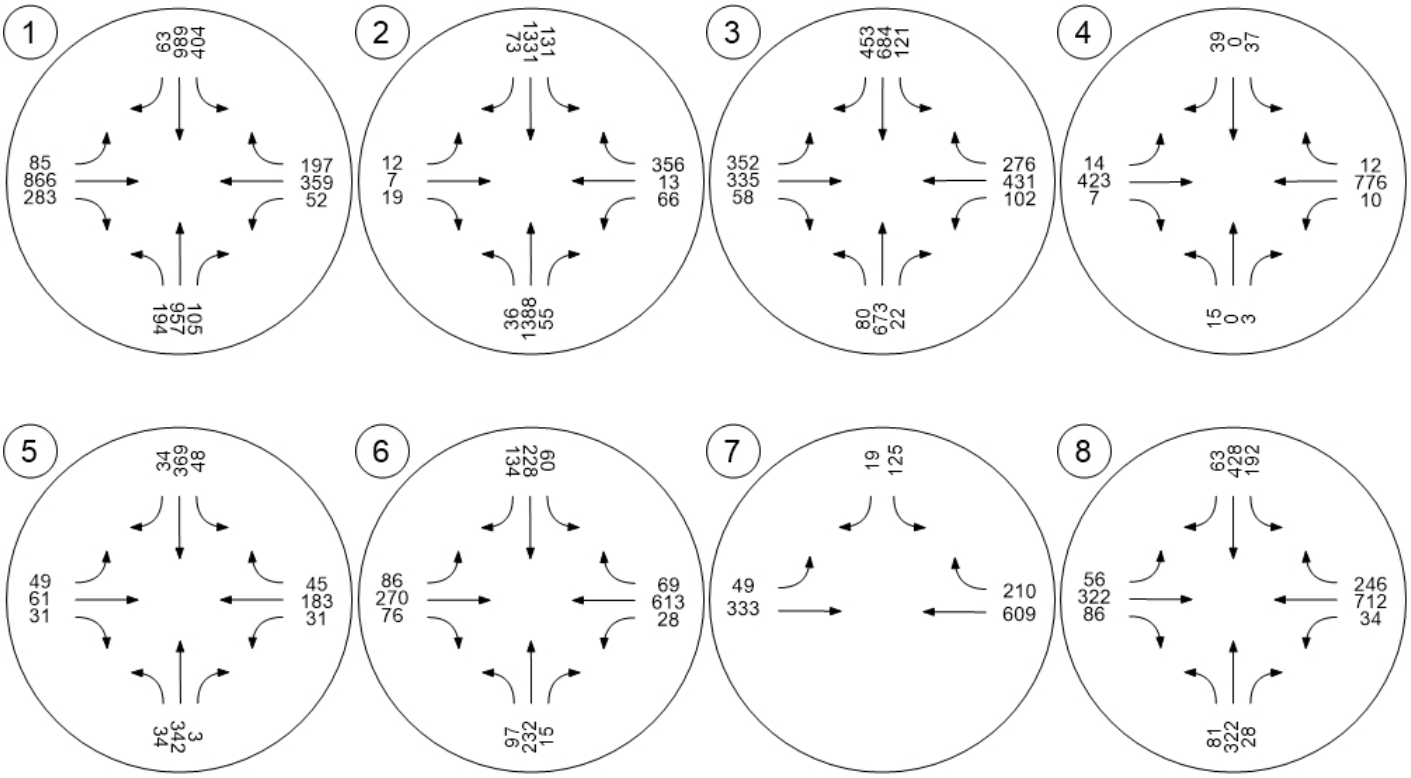
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	23	227	2	32	247	23	33	41	21	21	123	30	823
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	1	0	0	0	0	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**34**	**342**	**3**	**48**	**369**	**34**	**49**	**61**	**31**	**31**	**183**	**45**	**1230**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	65	156	10	40	153	89	55	159	51	19	404	46	1247
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	1	4	33	0	0	11	0	49
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**97**	**232**	**15**	**60**	**228**	**134**	**86**	**270**	**76**	**28**	**613**	**69**	**1908**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	84	12	30	204	402	141	873
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	4	29	10	0	44
		Other	0	0	0	0	0	0	0
		Future Total	**125**	**19**	**49**	**333**	**609**	**210**	**1345**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	54	216	19	129	287	39	28	209	55	23	475	165	1699
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	5	14	11	4	0	4	0	39
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**81**	**322**	**28**	**192**	**428**	**63**	**56**	**322**	**86**	**34**	**712**	**246**	**2570**

Traffic Volume - Future Total Volume



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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Jefferson Street (NS) at: Avenue 48 (EW)	Signalized	HCM 2010	EB Left	0.885	54.5	D
2	Jefferson Street (NS) at: Avenue 49 (EW)	Signalized	HCM 2010	NB Left	0.604	19.7	B
3	Jefferson Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	EB Left	0.654	27.5	C
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Right	0.268	3.4	A
5	Madison Street (NS) at: Avenue 49 (EW)	All-way stop	HCM 2010	NB Thru	0.479	14.5	B
6	Madison Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	WB Left	0.329	23.2	C
7	Hjorth Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.441	3.6	A
8	Monroe Street (NS) at: Avenue 50 (EW)	Signalized	HCM 2010	SB Left	0.594	20.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Jefferson Street (NS) at: Avenue 48 (EW)

Control Type:	Signalized	Delay (sec / veh):	54.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	0
Pocket Length [ft]	300.00	100.00	200.00	270.00	100.00	250.00	200.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	776	40	232	680	60	64	443	155	36	606	318
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	8	3	0	13	0	0	0	8	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	378	1164	63	346	1026	89	95	660	239	58	903	474
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	307	17	91	270	23	25	174	63	15	238	125
Total Analysis Volume [veh/h]	398	1227	66	365	1081	94	100	695	252	61	952	499
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	32	0	16	30	0	11	50	0	12	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	28	28	12	26	26	7	48	48	6	47	47
g / C, Green / Cycle	0.13	0.26	0.26	0.11	0.24	0.24	0.06	0.44	0.44	0.05	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.04	0.11	0.22	0.06	0.06	0.20	0.16	0.04	0.42	0.44
s, saturation flow rate [veh/h]	3329	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1598
c, Capacity [veh/h]	424	1254	391	363	1165	364	109	1494	667	92	767	681
d1, Uniform Delay [s]	47.58	40.63	31.84	49.00	41.01	34.06	51.21	21.96	20.96	51.06	31.25	31.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.48
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.30	20.72	0.93	23.12	13.91	1.72	23.88	0.23	0.35	7.83	27.80	39.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.98	0.17	1.00	0.93	0.26	0.92	0.47	0.38	0.66	0.99	1.02
d, Delay for Lane Group [s/veh]	57.88	61.35	32.77	72.12	54.92	35.78	75.09	22.18	21.31	58.89	59.05	70.90
Lane Group LOS	E	E	C	F	D	D	E	C	C	E	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.83	12.88	1.43	5.99	10.63	2.15	3.38	6.00	4.18	1.80	24.11	23.98
50th-Percentile Queue Length [ft/ln]	145.69	321.93	35.63	149.73	265.73	53.79	84.59	149.96	104.62	45.10	602.80	599.48
95th-Percentile Queue Length [veh/ln]	9.79	18.76	2.57	10.02	15.98	3.87	6.09	10.02	7.53	3.25	32.16	32.52
95th-Percentile Queue Length [ft/ln]	244.67	469.05	64.13	250.54	399.40	96.81	152.27	250.38	188.31	81.18	804.12	812.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.88	61.35	32.77	72.12	54.92	35.78	75.09	22.18	21.31	58.89	61.49	70.90
Movement LOS	E	E	C	F	D	D	E	C	C	E	E	E
d_A, Approach Delay [s/veh]	59.42			57.83			27.03			64.49		
Approach LOS	E			E			C			E		
d_I, Intersection Delay [s/veh]	54.46											
Intersection LOS	D											
Intersection V/C	0.885											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Jefferson Street (NS) at: Avenue 49 (EW)

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	170.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			45.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	14	940	49	138	1165	23	10	11	18	28	3	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	1417	73	206	1761	34	15	16	27	42	4	148
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	387	20	56	481	9	4	4	7	11	1	40
Total Analysis Volume [veh/h]	23	1547	80	225	1922	37	16	17	29	46	4	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	17	27	0	0	21	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	36	36	12	45	45	5	5	11	11
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.57	0.57	0.07	0.07	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.32	0.05	0.13	0.38	0.38	0.02	0.02	0.03	0.11
s, saturation flow rate [veh/h]	1714	4903	1530	1714	3427	1783	1757	1530	1714	1536
c, Capacity [veh/h]	62	2194	684	263	1936	1007	116	101	228	205
d1, Uniform Delay [s]	37.74	17.87	12.91	33.05	12.15	12.17	35.59	35.60	30.92	33.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	1.94	0.35	7.83	1.83	3.50	1.32	1.53	0.43	7.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.71	0.12	0.86	0.67	0.67	0.28	0.29	0.20	0.81
d, Delay for Lane Group [s/veh]	41.45	19.81	13.26	40.87	13.98	15.66	36.91	37.13	31.35	41.23
Lane Group LOS	D	B	B	D	B	B	D	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	6.60	0.76	4.53	6.77	7.53	0.65	0.58	0.78	3.39
50th-Percentile Queue Length [ft/ln]	11.75	165.10	19.05	113.16	169.22	188.34	16.29	14.46	19.52	84.85
95th-Percentile Queue Length [veh/ln]	0.85	10.82	1.37	8.02	11.04	12.03	1.17	1.04	1.41	6.11
95th-Percentile Queue Length [ft/ln]	21.14	270.47	34.29	200.40	275.88	300.87	29.33	26.04	35.14	152.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.45	19.81	13.26	40.87	14.53	15.66	36.91	36.91	37.13	31.35	41.23	41.23
Movement LOS	D	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	19.79			17.26			37.01			39.09		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.70											
Intersection LOS	B											
Intersection V/C	0.604											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Jefferson Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	360.00	100.00	260.00	280.00	100.00	230.00	200.00	100.00	100.00	110.00	100.00	230.00
Speed [mph]	50.00			55.00			50.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	565	67	226	643	159	166	111	16	134	190	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	25	0	0	0	8	0	5	5	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	842	108	362	958	237	247	173	24	205	288	268
Peak Hour Factor	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720	0.9720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	217	28	93	246	61	64	44	6	53	74	69
Total Analysis Volume [veh/h]	65	866	111	372	986	244	254	178	25	211	296	276
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	13	23	0	15	21	0	15	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	11	15	15	10	15	15
g / C, Green / Cycle	0.07	0.28	0.28	0.13	0.33	0.33	0.16	0.22	0.22	0.15	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.07	0.11	0.20	0.16	0.15	0.05	0.02	0.12	0.16	0.18
s, saturation flow rate [veh/h]	1714	4903	1530	3329	4903	1530	1714	3427	1530	1714	1800	1530
c, Capacity [veh/h]	126	1352	422	430	1625	507	270	749	335	255	377	321
d1, Uniform Delay [s]	31.33	22.37	19.86	29.98	19.66	18.68	29.26	22.62	21.80	29.05	26.27	26.78
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	2.34	1.52	5.30	1.69	3.25	14.63	0.16	0.09	6.80	3.62	6.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.64	0.26	0.86	0.61	0.48	0.94	0.24	0.07	0.83	0.78	0.86
d, Delay for Lane Group [s/veh]	34.54	24.71	21.38	35.29	21.35	21.93	43.89	22.78	21.89	35.85	29.89	33.55
Lane Group LOS	C	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.08	3.91	1.41	3.03	3.96	3.07	4.86	1.09	0.30	3.62	4.57	4.59
50th-Percentile Queue Length [ft/ln]	26.92	97.73	35.31	75.70	98.89	76.72	121.53	27.19	7.47	90.47	114.24	114.65
95th-Percentile Queue Length [veh/ln]	1.94	7.04	2.54	5.45	7.12	5.52	8.48	1.96	0.54	6.51	8.08	8.10
95th-Percentile Queue Length [ft/ln]	48.46	175.92	63.56	136.27	178.00	138.10	211.93	48.95	13.44	162.85	201.88	202.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.54	24.71	21.38	35.29	21.35	21.93	43.89	22.78	21.89	35.85	29.89	33.55
Movement LOS	C	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.97			24.68			34.47			32.79		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.54											
Intersection LOS	C											
Intersection V/C	0.654											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Project / Verano Drive (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	3.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.268

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	13	0	8	0	0	0	0	425	33	9	416	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	24	0	26	41	0	0	0	0	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	0	12	24	0	26	41	633	49	13	620	42
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	3	6	0	7	11	165	13	3	162	11
Total Analysis Volume [veh/h]	20	0	13	25	0	27	43	661	51	14	647	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	38	0	0	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	4	48	48	48	48	48	48
g / C, Green / Cycle	0.07	0.07	0.80	0.80	0.80	0.80	0.80	0.80
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.06	0.20	0.20	0.02	0.19	0.19
s, saturation flow rate [veh/h]	1585	1643	764	1800	1755	750	1800	1760
c, Capacity [veh/h]	206	203	661	1435	1399	649	1435	1403
d1, Uniform Delay [s]	26.52	26.81	2.72	1.54	1.54	2.65	1.53	1.53
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	0.66	0.19	0.42	0.43	0.06	0.40	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

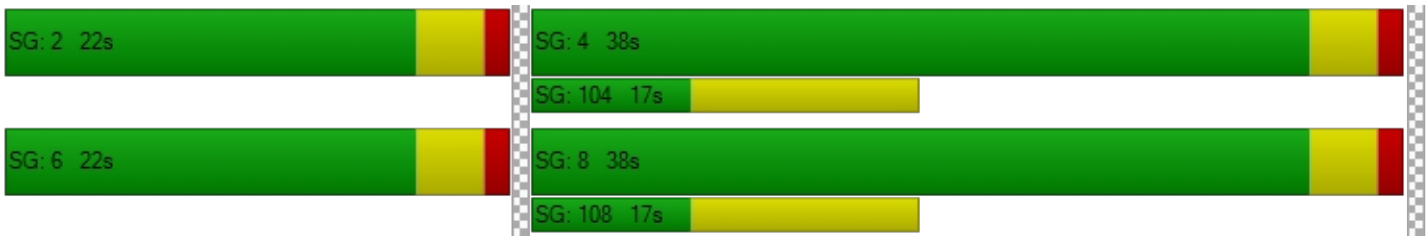
X, volume / capacity	0.16	0.26	0.07	0.25	0.25	0.02	0.24	0.24
d, Delay for Lane Group [s/veh]	26.87	27.47	2.91	1.96	1.97	2.71	1.93	1.94
Lane Group LOS	C	C	A	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.42	0.68	0.10	0.17	0.17	0.03	0.16	0.16
50th-Percentile Queue Length [ft/ln]	10.58	16.97	2.57	4.18	4.19	0.82	4.01	4.02
95th-Percentile Queue Length [veh/ln]	0.76	1.22	0.19	0.30	0.30	0.06	0.29	0.29
95th-Percentile Queue Length [ft/ln]	19.05	30.54	4.63	7.53	7.54	1.48	7.22	7.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.87	26.87	26.87	27.47	27.47	27.47	2.91	1.97	1.97	2.71	1.94	1.94
Movement LOS	C	C	C	C	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	26.87			27.47			2.02			1.95		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	3.38											
Intersection LOS	A											
Intersection V/C	0.268											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Madison Street (NS) at: Avenue 49 (EW)

Control Type:	All-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.479

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	180.00	100.00	100.00	170.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	51	286	11	67	275	18	19	74	23	5	62	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	4	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	429	16	100	414	27	28	110	34	7	92	33
Peak Hour Factor	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750	0.8750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	123	5	29	118	8	8	31	10	2	26	9
Total Analysis Volume [veh/h]	87	490	18	114	473	31	32	126	39	8	105	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	494	531	535	496	533	540	513	509
Degree of Utilization, x	0.18	0.48	0.48	0.23	0.47	0.47	0.38	0.30

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.63	2.56	2.53	0.88	2.51	2.46	1.79	1.23
95th-Percentile Queue Length [ft]	15.86	64.11	63.31	22.02	62.82	61.46	44.77	30.78
Approach Delay [s/veh]	14.89			14.65			14.34	13.03
Approach LOS	B			B			B	B
Intersection Delay [s/veh]	14.55							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 6: Madison Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.329

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Pocket Length [ft]	280.00	100.00	220.00	200.00	100.00	200.00	300.00	100.00	76.00	300.00	100.00	240.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	83	236	14	59	160	49	28	280	114	7	294	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	3	21	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	352	21	88	238	77	45	438	170	10	476	75
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	93	6	23	63	20	12	115	45	3	125	20
Total Analysis Volume [veh/h]	131	371	22	93	251	81	47	462	179	11	502	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	10	0	10	10	0	10	10	0	10	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	0	14	21	0	14	21	0	14	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	27	27	8	26	26	6	17	17	2	13	13
g / C, Green / Cycle	0.13	0.38	0.38	0.12	0.37	0.37	0.09	0.24	0.24	0.03	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.11	0.01	0.03	0.07	0.05	0.03	0.13	0.12	0.01	0.15	0.05
s, saturation flow rate [veh/h]	3329	3427	1530	3329	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	443	1299	580	403	1259	562	151	831	371	51	631	282
d1, Uniform Delay [s]	27.49	15.19	13.74	27.91	15.17	14.85	30.05	23.30	22.83	33.29	27.40	24.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.55	0.12	0.29	0.36	0.54	1.17	0.58	0.97	2.11	2.34	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.29	0.04	0.23	0.20	0.14	0.31	0.56	0.48	0.22	0.80	0.28
d, Delay for Lane Group [s/veh]	27.86	15.74	13.86	28.20	15.53	15.39	31.22	23.89	23.81	35.40	29.73	25.19
Lane Group LOS	C	B	B	C	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.92	1.82	0.20	0.65	1.21	0.81	0.73	3.00	2.33	0.20	3.77	1.05
50th-Percentile Queue Length [ft/ln]	22.91	45.48	5.11	16.36	30.33	20.28	18.13	74.94	58.13	4.93	94.15	26.27
95th-Percentile Queue Length [veh/ln]	1.65	3.27	0.37	1.18	2.18	1.46	1.31	5.40	4.19	0.36	6.78	1.89
95th-Percentile Queue Length [ft/ln]	41.24	81.87	9.19	29.45	54.60	36.50	32.63	134.90	104.63	8.88	169.46	47.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.86	15.74	13.86	28.20	15.53	15.39	31.22	23.89	23.81	35.40	29.73	25.19
Movement LOS	C	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	18.69			18.28			24.37			29.23		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.16											
Intersection LOS	C											
Intersection V/C	0.329											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Hjorth Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	3.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.441

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	16	7	7	363	354	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	18	34	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	14	13	559	561	21
Peak Hour Factor	0.8850	0.8850	0.8850	0.8850	0.8850	0.8850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	4	4	158	158	6
Total Analysis Volume [veh/h]	27	16	15	632	634	24
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	12	0	0	63	63	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C
C, Cycle Length [s]	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	63	63	63
g / C, Green / Cycle	0.06	0.84	0.84	0.84
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.35	0.37
s, saturation flow rate [veh/h]	1641	788	1800	1788
c, Capacity [veh/h]	93	652	1506	1497
d1, Uniform Delay [s]	34.27	3.32	1.54	1.58
k, delay calibration	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.58	0.07	0.86	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.02	0.42	0.44
d, Delay for Lane Group [s/veh]	37.84	3.39	2.40	2.52
Lane Group LOS	D	A	A	A
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.80	0.05	0.36	0.39
50th-Percentile Queue Length [ft/ln]	20.08	1.34	9.01	9.77
95th-Percentile Queue Length [veh/ln]	1.45	0.10	0.65	0.70
95th-Percentile Queue Length [ft/ln]	36.14	2.42	16.21	17.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.84	37.84	3.39	2.40	2.52	2.52
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	37.84		2.42		2.52	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.60					
Intersection LOS	A					
Intersection V/C	0.441					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Monroe Street (NS) at: Avenue 50 (EW)

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.594

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	170.00	100.00	100.00	210.00	100.00	110.00	220.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	292	55	125	278	20	29	302	53	22	292	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	17	7	8	3	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	435	82	186	414	47	50	458	82	33	448	253
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	118	22	50	112	13	14	124	22	9	121	69
Total Analysis Volume [veh/h]	76	472	89	202	449	51	54	497	89	36	486	274
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	21	0	15	25	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	19	9	23	23	20	20	20	20	20	20
g / C, Green / Cycle	0.08	0.32	0.32	0.15	0.38	0.38	0.33	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.12	0.14	0.14	0.06	0.28	0.06	0.04	0.27	0.18
s, saturation flow rate [veh/h]	1714	1800	1702	1714	1800	1736	924	1800	1530	915	1800	1530
c, Capacity [veh/h]	147	579	547	250	687	663	166	600	510	159	600	510
d1, Uniform Delay [s]	26.30	16.48	16.51	24.87	13.40	13.40	28.77	18.48	14.21	28.69	18.33	16.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.78	3.03	3.24	6.06	1.53	1.59	1.12	3.43	0.16	0.72	2.84	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.50	0.50	0.81	0.37	0.37	0.32	0.83	0.17	0.23	0.81	0.54
d, Delay for Lane Group [s/veh]	29.08	19.52	19.75	30.93	14.93	15.00	29.89	21.91	14.37	29.41	21.17	17.18
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.03	3.06	2.95	2.82	2.22	2.16	0.74	5.61	0.72	0.49	5.36	2.57
50th-Percentile Queue Length [ft/ln]	25.66	76.51	73.63	70.50	55.53	54.01	18.58	140.18	17.90	12.21	133.90	64.34
95th-Percentile Queue Length [veh/ln]	1.85	5.51	5.30	5.08	4.00	3.89	1.34	9.49	1.29	0.88	9.15	4.63
95th-Percentile Queue Length [ft/ln]	46.20	137.72	132.54	126.90	99.96	97.22	33.45	237.27	32.22	21.98	228.79	115.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.08	19.61	19.75	30.93	14.96	15.00	29.89	21.91	14.37	29.41	21.17	17.18
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	20.76			19.56			21.54			20.17		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	20.46											
Intersection LOS	C											
Intersection V/C	0.594											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TTM 37884

Vistro File: C:\...\PM - Mitigation.vistro

Scenario 9 Future Year 2040 With Project MD - Improvements

Report File: C:\...\PM FYp_MD_Improvements.pdf

1/19/2021

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Jefferson Street (NS) at: Avenue 48 (EW)	Final Base	250	776	40	232	680	60	64	443	155	36	606	318	3660
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	8	3	0	13	0	0	0	8	4	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**378**	**1164**	**63**	**346**	**1026**	**89**	**95**	**660**	**239**	**58**	**903**	**474**	**5495**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Jefferson Street (NS) at: Avenue 49 (EW)	Final Base	14	940	49	138	1165	23	10	11	18	28	3	99	2498
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	16	0	0	25	0	0	0	0	0	0	0	41
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**21**	**1417**	**73**	**206**	**1761**	**34**	**15**	**16**	**27**	**42**	**4**	**148**	**3764**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Jefferson Street (NS) at: Avenue 50 (EW)	Final Base	42	565	67	226	643	159	166	111	16	134	190	169	2488
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	8	25	0	0	0	8	0	5	5	16	67
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**63**	**842**	**108**	**362**	**958**	**237**	**247**	**173**	**24**	**205**	**288**	**268**	**3775**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project / Verano Drive (NS) at: Avenue 50 (EW)	Final Base	13	0	8	0	0	0	0	425	33	9	416	0	904
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	24	0	26	41	0	0	0	0	42	133
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**19**	**0**	**12**	**24**	**0**	**26**	**41**	**633**	**49**	**13**	**620**	**42**	**1479**

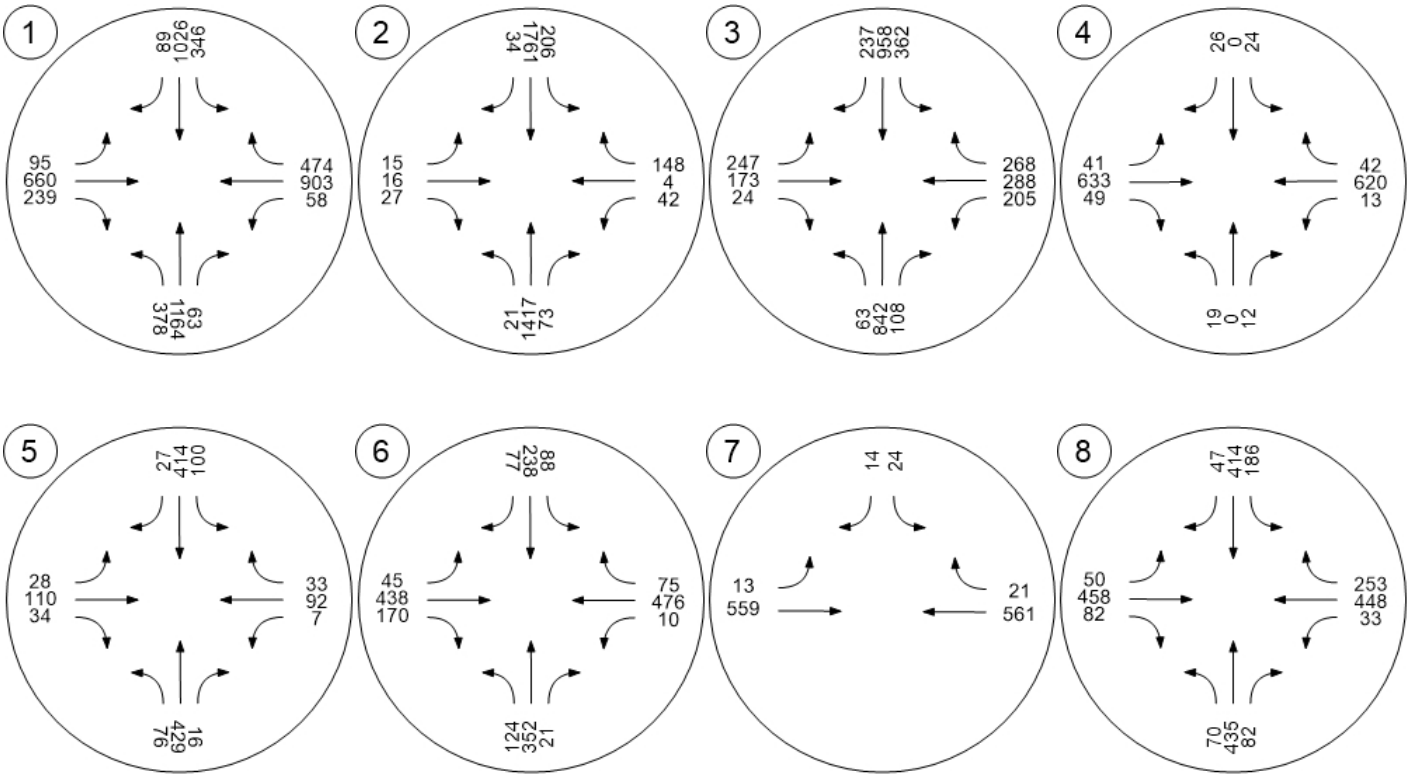
ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Madison Street (NS) at: Avenue 49 (EW)	Final Base	51	286	11	67	275	18	19	74	23	5	62	22	913
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	4	0	0	0	0	0	0	0	7
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**76**	**429**	**16**	**100**	**414**	**27**	**28**	**110**	**34**	**7**	**92**	**33**	**1366**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Madison Street (NS) at: Avenue 50 (EW)	Final Base	83	236	14	59	160	49	28	280	114	7	294	50	1374
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	4	3	21	0	0	38	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**124**	**352**	**21**	**88**	**238**	**77**	**45**	**438**	**170**	**10**	**476**	**75**	**2114**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
7	Hjorth Street (NS) at: Avenue 50 (EW)	Final Base	16	7	7	363	354	14	761
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	3	18	34	0	59
		Other	0	0	0	0	0	0	0
		Future Total	**24**	**14**	**13**	**559**	**561**	**21**	**1192**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
8	Monroe Street (NS) at: Avenue 50 (EW)	Final Base	44	292	55	125	278	20	29	302	53	22	292	170	1682
		Growth Factor	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	17	7	8	3	0	13	0	52
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**70**	**435**	**82**	**186**	**414**	**47**	**50**	**458**	**82**	**33**	**448**	**253**	**2558**

Traffic Volume - Future Total Volume



APPENDIX D

TRAFFIC SIGNAL WARRANT WORKSHEETS

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Opening Year 2040 With Project

Major Street Name = **Avenue 50**

Total of Both Approaches (VPH) = **1242**

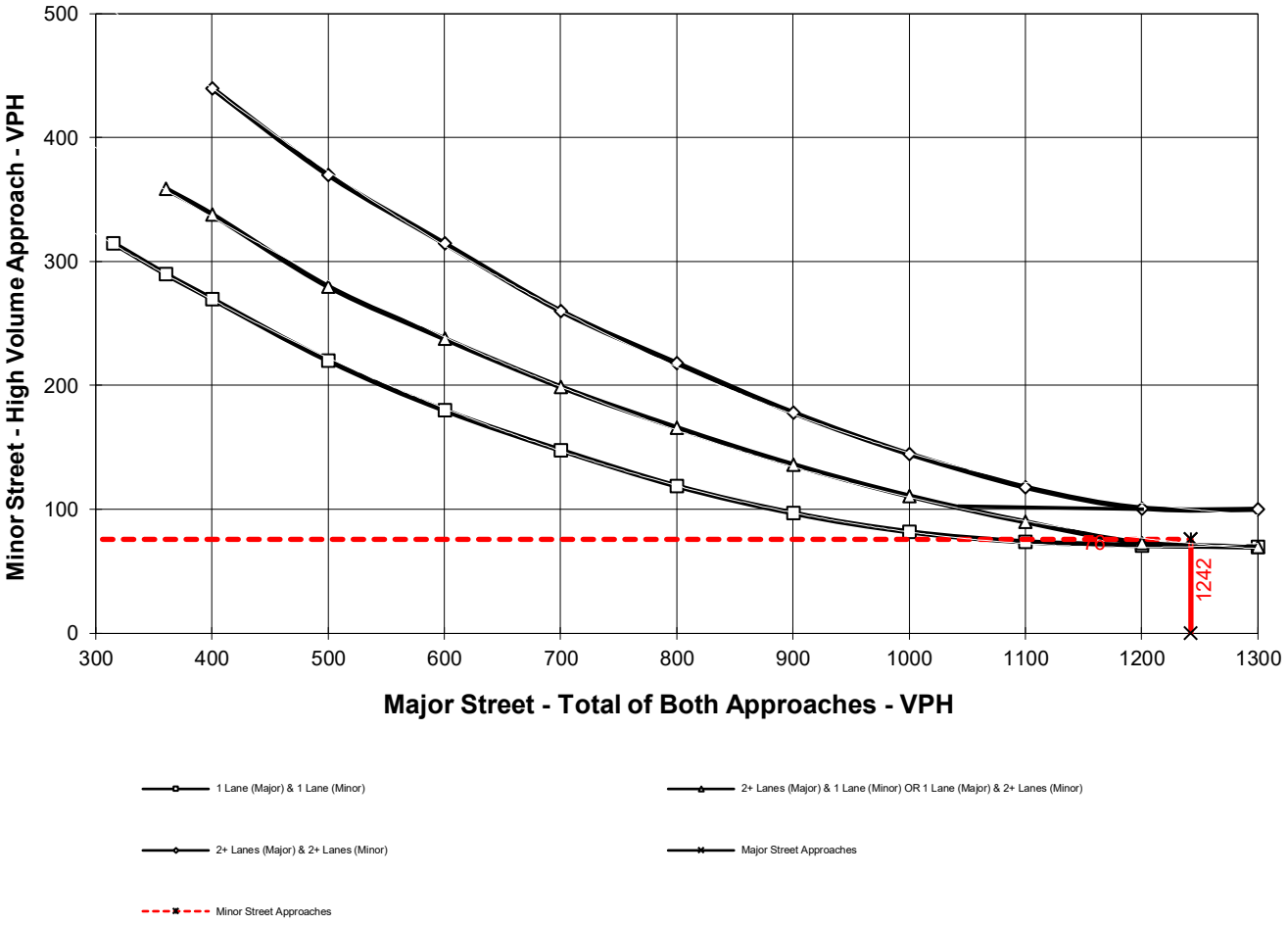
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Verano Drive**

High Volume Approach (VPH) = **76**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Opening Year 2040 Without Project

Major Street Name = **Avenue 50**

Total of Both Approaches (VPH) = **897**

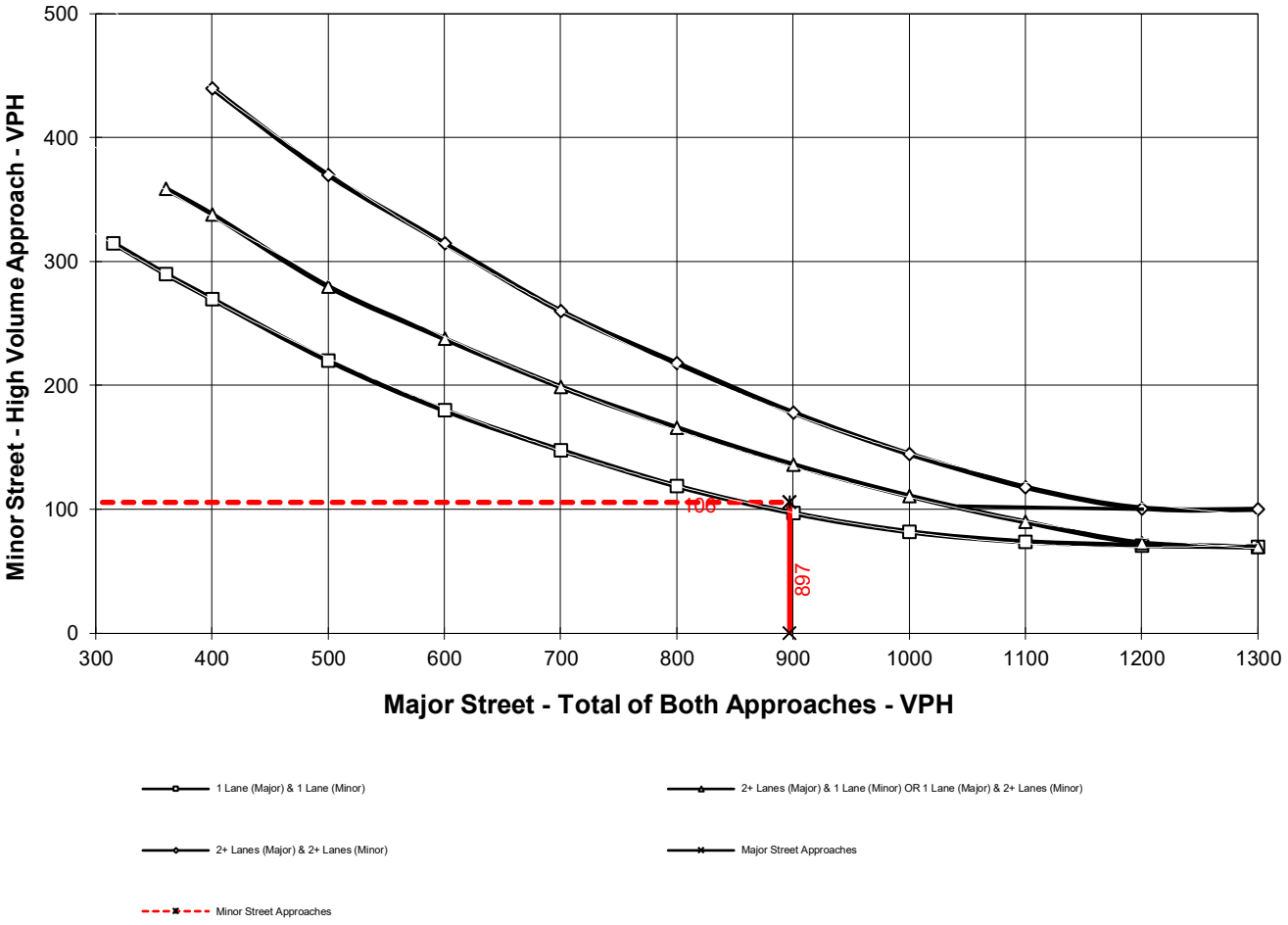
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Hjorth Street**

High Volume Approach (VPH) = **106**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.