San Bruno Glenview Terrace

Draft Traffic Impact Analysis Report

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Table of Contents

1 INTRODUCTION 1

1.1 PROJECT DESCRIPTION 1
1.2 STUDY METHODOLOGY 4
1.3 DIRECTIONAL CONVENTION 4

2 ANALYSIS METHODOLOGY 5

2.1 LEVEL OF SERVICE DEFINITION 5
2.2 STANDARDS OF SIGNIFICANCE 6

3 EXISTING CONDITIONS 7

3.1 ROADWAY NETWORK 7
3.2 TRANSIT NETWORK AND SERVICES 7
3.3 PEDESTRIAN AND BICYCLE FACILITIES 8
3.4 ROADWAY NETWORK AND TRAFFIC VOLUMES 12
3.5 INTERSECTION LEVEL OF SERVICE 12
3.6 VEHICLE QUEUES 12

4 CUT-THROUGH TRAFFIC ANALYSIS 16

5 PROJECT CONDITIONS 18

5.1 PROJECT DESCRIPTION 18
5.2 TRIP GENERATION 18
5.3 TRIP DISTRIBUTION 19
5.4 TRIP ASSIGNMENT 19
5.5 EXISTING PLUS PROJECT CONDITIONS 21

6 BACKGROUND CONDITIONS 24

6.1 APPROVED DEVELOPMENTS 24
6.2 PROGRAMMED/PLANNED TRANSPORTATION FACILITY IMPROVEMENTS 24
6.3 ROADWAY NETWORK AND TRAFFIC VOLUMES 25
6.4 BACKGROUND CONDITIONS INTERSECTION LEVEL OF SERVICE 25
6.5 BACKGROUND PLUS PROJECT CONDITIONS 28

7 CUMULATIVE (2040) CONDITIONS 32

7.1 FORECAST METHODOLOGY 32
7.2 CUMULATIVE AND CUMULATIVE PLUS PROJECT INTERSECTION ANALYSIS 35
7.3 CUMULATIVE AND CUMULATIVE PLUS PROJECT QUEUING SUMMARY 36

8 SUMMARY AND CONCLUSIONS 37

8.1 IMPACTS TO INTERSECTION OPERATIONS 37
8.2 OTHER IMPACTS AND CONSIDERATIONS 39

APPENDIX A TURNING MOVEMENT COUNTS I

APPENDIX B SYNCHRO REPORTS II

APPENDIX C SIGNAL WARRANTS III

APPENDIX D STOP WARRANTS IV

List of Figures

FIGURE 1. REGION MAP 2
FIGURE 2. GLENVIEW TERRACE PROJECT STUDY INTERSECTIONS 3
FIGURE 3. PUBLIC TRANSIT NETWORK IN THE STUDY AREA 8
FIGURE 4. EXISTING AND PROPOSED BICYCLE FACILITIES IN PROJECT VICINITY 9
FIGURE 5. ON-STREET PARKING DATA COLLECTION SITES 11
FIGURE 6. LANE CONFIGURATIONS AND INTERSECTION CONTROL 13
FIGURE 7. EXISTING TURNING MOVEMENTS 14
FIGURE 8. DISTRIBUTION OF CUT-THROUGH TRAFFIC IN THE STUDY AREA 17
FIGURE 9. PROJECT TRIP DISTRIBUTION 19
FIGURE 10. PROJECT TURNING MOVEMENTS 20
FIGURE 11. EXISTING PLUS PROJECT TURNING MOVEMENT VOLUMES 22
FIGURE 12. ADDITIONAL BACKGROUND TURNING MOVEMENT VOLUMES 26
FIGURE 13. TOTAL BACKGROUND TURNING MOVEMENT VOLUMES 27
FIGURE 14. BACKGROUND PLUS PROJECT TURNING MOVEMENT VOLUMES 29
FIGURE 15. CUMULATIVE TURNING MOVEMENT VOLUMES 33
FIGURE 16. CUMULATIVE PLUS PROJECT TURNING MOVEMENT VOLUMES 34

List of Tables

TABLE 1. INTERSECTION LEVEL OF SERVICE CRITERIA 5
TABLE 2. STREET PARKING OCCUPANCY DATA 12
TABLE 3. EXISTING CONDITIONS LOS SUMMARY 15
TABLE 4. EXISTING CONDITIONS QUEUING SUMMARY 15
TABLE 5. SENSITIVITY ANALYSIS OF THE EFFECT OF CUT-THROUGH TRAFFIC ON INTERSECTION LOS 17
TABLE 6. PROJECT TRIP GENERATION 18
TABLE 7. EXISTING PLUS PROJECT LOS SUMMARY 21
TABLE 8. EXISTING PLUS PROJECT QUEUING SUMMARY 23
TABLE 9. BACKGROUND CONDITIONS LOS SUMMARY 28
TABLE 10. BACKGROUND CONDITIONS QUEUING SUMMARY 28
TABLE 11. BACKGROUND PLUS PROJECT LOS SUMMARY 30
TABLE 12. BACKGROUND PLUS PROJECT QUEUING SUMMARY 31
TABLE 13. CUMULATIVE PLUS PROJECT LOS SUMMARY 35
TABLE 14. CUMULATIVE PLUS PROJECT QUEUING SUMMARY 36
TABLE 15. SAN BRUNO AVENUE AND GLENVIEW DRIVE AWSC LOS SUMMARY 38
TABLE 16. CUMULATIVE + PROJECT AWSC QUEUING SUMMARY 38

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1 INTRODUCTION

1.1 Project Description

This report provides an evaluation of traffic and transportation issues related to the proposed project. The project involves construction of 29 single-family homes on the northeast corner of San Bruno Avenue and Glenview Drive. The proposed project is a residential subdivision located at 2880-2890 San Bruno Avenue and 850 Glenview Drive. 2880-2890 San Bruno Avenue are vacant parcels amounting to approximately 1.08 acres in total area. 850 Glenview Drive is currently developed with a church, parking lot, and one single family house. The church and house are not in use and are currently vacant. The proposed homes range in size from 2,148 square feet to 3,034 square feet. All proposed homes include two-car garage and additional two spaces the driveway. A total of 20 guest spaces are proposed throughout the site.

As shown in **Figure 1**, The project site is located between Interstate 280 (I-280) to the east and Skyline Boulevard/State Route 35 to the west with direct access provided by San Bruno Avenue to the south, and Sneath Lane to the north. I-380 has an interchange with I-280 between Sneath Lane and San Bruno Avenue, allowing access to and from El Camino Real and US-101 further to the west. Land use adjacent to the project site include single-family residential, neighborhood commercial, elementary school, fire station and open space.

This analysis includes eight study intersections nearby to the project site as shown in **Figure 2**.

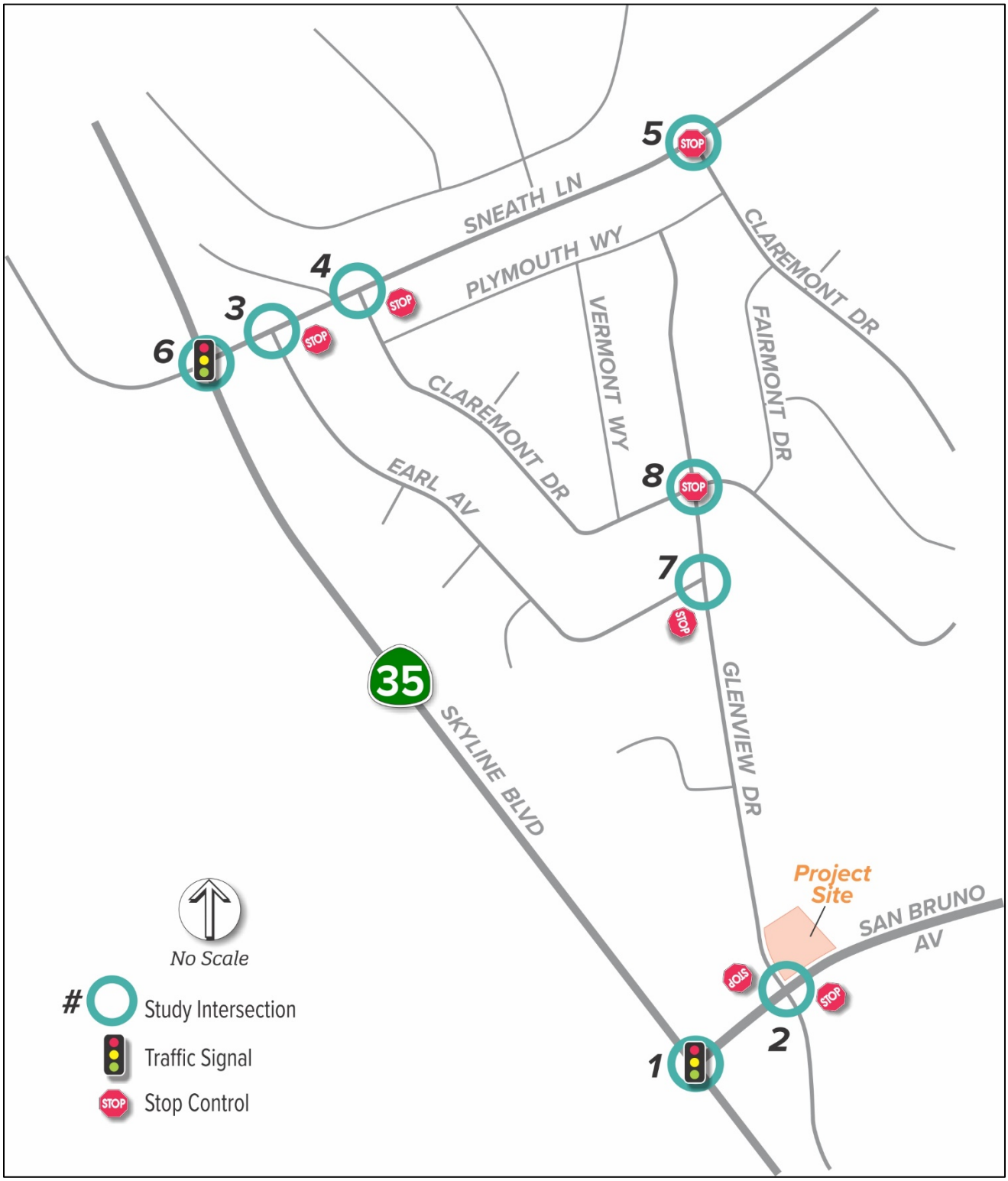
1. San Bruno Avenue /Glenview Drive intersection (TWSC)
2. San Bruno Avenue /Skyline Blvd. (SR 35) intersection (signalized)
3. Sneath Lane/Earl Avenue intersection (TWSC)
4. Sneath Lane/Claremont Drive (west) intersection (TWSC)
5. Sneath Lane/Claremont Drive (east) intersection (AWSC)
6. Sneath Lane/Skyline Blvd. (SR 35) intersection (signalized)
7. Glenview Drive/Earl Avenue (TWSC)
8. Glenview Drive/Claremont Drive (AWSC)

The Glenview Terrace project site can be accessed through four major gateways:

- Sneath Lane/Skyline Blvd. (SR 35) intersection (southwest)
- San Bruno Avenue/Skyline Blvd. (SR 35) intersection (northwest)
- Sneath Lane/I-280 ramps (northeast)
- San Bruno Avenue/I-280 ramps (southeast)

Figure 1. Region Map

Figure 2. Glenview Terrace Project Study Intersections



1.2 Study Methodology

This study was prepared according to standard transportation impact analysis practices. Traffic conditions were analyzed at all study intersections during weekday AM and PM peak periods (7:00-9:00 AM and 4:00-7:00 PM respectively). The data collection period at the intersection of San Bruno Avenue and Glenview Drive was extended (6:00-10:00 AM and 2:00-7:00 PM) to support signal warrant analysis.

This report also presents field observations to document intersection geometry, parking demand, and pedestrian, bicycle, and transit access relevant to the site. This report provides a general description of the transportation facilities in the project vicinity and summarizes transportation operations within the study area under the following scenarios:

- Existing Conditions
- Existing plus Project Conditions
- Background Conditions: Background traffic volumes reflect the traffic added by approved but not yet completed or occupied developments in the vicinity of project area. The list of approved projects and corresponding project trips information was obtained from the City of San Bruno.
- Background plus Project Conditions
- Cumulative plus Project Conditions: Analysis incorporated regional traffic growth as forecasted by the C/CAG travel demand model. The C/CAG model Transportation Analysis Zone (TAZ) corresponding to the study area encompasses the neighborhood bounded by Skyline Boulevard, San Bruno Avenue, Sneath Lane and Interstate 280. As the project does not represent an intensification of land use, and as the number of 2040 housing units assumed in the C\CAG model TAZ can more than accommodate the Glenview Terrace development plus existing units, the model outputs can represent the “plus Project” condition.
- Cumulative Conditions: Volumes acquired from the C/CAG 2040 model forecast minus project generated trips.

1.3 Directional Convention

For the purpose of this study, I-280, SR-35/Skyline Boulevard, Glenview Drive, Claremont Drive and Earl Avenue are assumed to provide travel in the north-south direction. Primary east-west directional travel is provided by Sneath Lane and San Bruno Avenue.

2 ANALYSIS METHODOLOGY

To evaluate traffic conditions as well as provide a basis for comparison of conditions before and after project-generated traffic is added to the street system, intersection Level of Service (LOS) analysis was evaluated at all eight study intersections. Signal timing sheets (signal timing plans for signalized intersections) were provided by the City and Caltrans staff and used in this analysis.

2.1 Level of Service Definition

Per the City of San Bruno requirements, traffic conditions for the study intersections were evaluated using the methodologies provided in the 2010 Highway Capacity Manual (HCM). For reference purposes, Level of Service (LOS) as defined in the HCM is a quality measure describing operating conditions within a traffic stream. For intersections, LOS characterizes the level of delay per vehicle. Level of Service at study intersections was calculated using Synchro 10.0 software.

The LOS evaluation indicates the degree of congestion that occurs during peak travel periods and is the principal measure of intersection performance. Level of Service can range from "A" representing free-flow conditions, to "F" representing extremely long delays. LOS B and C signify stable conditions with acceptable delays. LOS D is typically considered acceptable for a peak hour in urban areas. LOS E is approaching capacity and LOS F represents conditions at or above capacity.

At signalized and All-Way Stop Controlled (AWSC) intersections, level of service is evaluated on the basis of average stopped delay for all vehicles at the intersection, while at Two-Way Stop Controlled (TWSC) intersections, the worst approach defines the level of service. Table 1 defines the levels of service for signalized and unsignalized intersections based on HCM methodology.

Table 1. Intersection Level of Service Criteria

Level of Service (LOS)	Total Delay Per Vehicle (seconds)	
	Signalized	Unsignalized
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80	> 50

Source: Highway Capacity Manual 2010, Transportation Research Board.

2.2 Standards of Significance

Significance criteria are used to establish thresholds of impact. In order to be consistent with General Plan policies, a significant impact on *signalized intersection operations* would occur if, for either peak hour:

1. The level of service at the intersection degrades from an acceptable level (LOS D or better) under existing conditions to an unacceptable level under existing plus project conditions; or
2. The level of service at the intersection is an unacceptable level (LOS E or F) under existing conditions, and the addition of project trips would cause the critical-movement delay at the intersection to increase by four or more seconds.

For *unsignalized intersections*, an unsignalized intersection would have a significant impact if the following would occur:

1. The intersection or a stop-controlled approach degrades from an acceptable LOS D to an unacceptable LOS E or F or is already operating below LOS D; and
2. The project would add ten or more vehicle trips to the critical movement of the intersection or stop-controlled approach during the peak hour; and
3. The intersection meets the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour volume traffic signal warrant after project completion.

In addition, Skyline Boulevard (State Route 35) is under Caltrans' jurisdiction and subject to Caltrans LOS standards. According to Caltrans' Guide for the Preparation of Traffic Impact Studies, Caltrans seeks to maintain a target LOS at the transition between LOS C and LOS D on state highway facilities but acknowledges that this may not always be feasible. In instances where a facility is currently operating worse than the target LOS, the existing LOS should be maintained. For consistency with City of San Bruno standards, LOS D is considered the appropriate target LOS for this Caltrans facility.

Finally, Skyline Boulevard is part of the Congestion Management Program (CMP) network monitored by the San Mateo City/County Council of Governments (C/CAG). Jurisdictions are required to notify C/CAG and perform analysis of impacts to the CMP network for projects that would generate more than 100 peak hour trips. Because the proposed Project falls below this threshold, no CMP impact analysis is required.

3 EXISTING CONDITIONS

This section provides an evaluation of traffic and transportation issues related to the existing state of the study area. A description of the existing transportation facilities in terms of the roadway network, intersections, transit service, bicycle facilities, pedestrian facilities and parking is provided below.

3.1 Roadway Network

This section describes the regional roadway network serving the project study area as well as the local access routes serving the project site.

3.1.1 Regional Facilities

The project area is surrounded by two regional routes: Interstate 280 (I-280) and State Route 35/Skyline Boulevard. These facilities fall under the jurisdiction of Caltrans for maintenance and operations.

- I-280 is an eight-lane freeway that runs north-south to the east of the study area and provides access to and from the North Bay and South Bay. Exits serving the study sites are located at Sneath Lane and at San Bruno Avenue.
- SR-35/Skyline Boulevard is a north-south principal arterial with four lanes north of the study area, converting to two-lanes within the study area.

3.1.2 Local Facilities

Locally, the study area is bordered by Sneath Lane to the north and San Bruno Avenue to the south. Both of these facilities are minor arterials running east-west and laterally connecting I-280 and SR-35. Several local streets run within this area, connecting single family homes and commercial zones.

3.2 Transit Network and Services

3.2.1 Regional Services

The study area benefits from regional transit access with both Bay Area Rapid Transit District (BART) and Caltrain. These stations are located in downtown San Bruno, less than a mile apart from one another, and around two miles from the project site. Due to the regional nature of these services, they are mainly used for work commutes outside the city. Existing transit service routes in the study area are detailed in **Figure 3**.

3.2.2 SamTrans Bus Service

SamTrans operates local bus routes 49 and 140 running through the north end of the area along Sneath Lane and Rollingwood Drive, a bit over half a mile from the Project site. Bus stops are located at Sneath Lane and Claremont Drive and at Sequoia Avenue just north of Sneath Lane. Going north, route 49 starts from the City of Pacifica, serving important stops in San Bruno such as Skyline College, Bayhill Shopping Center in downtown, and Caltrain station before heading north along US-101 to the City of Brisbane. This route runs on school days only. Route 140 provides connections to the San Francisco International Airport via downtown San Bruno, making essential stops at the Caltrain and BART stations.

Figure 3. Public Transit Network in the Study Area

Source: SamTrans

3.3 Pedestrian and Bicycle Facilities

The San Bruno Walk'n Bike Plan, adopted in 2016, describes existing bicycle and pedestrian facilities in the project vicinity as well as planned improvement projects.

3.3.1 Pedestrian Facilities

As noted during a site visit, pedestrian facilities within the vicinity of the project site include sidewalks, crosswalks, curb ramps and traffic signals with pedestrian crosswalks. There are crosswalks and traffic signals with flashing walk/don't walk pedestrian signals at the intersections of Skyline Boulevard and Sneath Lane, and Skyline Boulevard and San Bruno Avenue. Current pedestrian traffic flow is relatively light in the vicinity of the project site.

Skyline Boulevard, a state highway, does not have sidewalks along its length, and segments of Sneath Lane have missing or discontinuous sidewalks. The Walk n' Bike Plan proposes a sidewalk gap closure project on Sneath Lane between Claremont Drive and Sequoia Avenue.

3.3.2 Bicycle Facilities

The existing bicycle network in San Bruno consists of three classifications of facilities:

- Class I Bikeway (bike path) – completely separated, with paved right of way (shared with pedestrians) which excludes general motor vehicle traffic.
- Class II Bikeway (bike lane) – provides a striped and stenciled lane for one-way bike travel on a street or highway
- Class III Bikeway (bike route) – a shared use roadway with motor vehicle traffic and is identified by signage or permanent markings.

Cyclists can use any non-freeway street in San Bruno but there are limited dedicated bicycle facilities. In the vicinity of the project site, Class II bicycle lanes are provided on both sides of Sneath Lane. A Class I bicycle path (the San Andreas Trail) exists south of the study area parallel to Skyline Blvd. San Bruno Avenue has wide shoulders that act as bike lanes but there is no bike lane striping or signage. Existing and proposed bikeways in the study area from the 2016 Walk n' Bike Plan are depicted in **Figure 4**.

Figure 4. Existing and Proposed Bicycle Facilities in Project Vicinity

Source: San Bruno Walk 'n Bike Plan 2016

3.3.3 Parking Facilities

On-street parking is permitted along Glenview Drive adjacent to the project site. These are unmarked residential type parking spaces. A parking lot for a nearby church exists on the northeast corner of Skyline Boulevard and Glenview Drive, west of the project site.

On-street parking occupancy data was collected along Glenview Drive near the project site as shown in **Figure 5**. The number of parked vehicles along the four segments depicted in the figure were observed on Tuesday May 13, 2019 and Saturday May 18, 2019 at 4:00 PM and 10:00 PM on both days. The capacity and occupancy at each of the four segments have been shown in **Table 2**. Segments 2 and 3 experience very low occupancy rates (0-10%), while segments 1 and 4 have occupancy ranging from 15% to 30%.

Figure 5. On-Street Parking Data Collection Sites

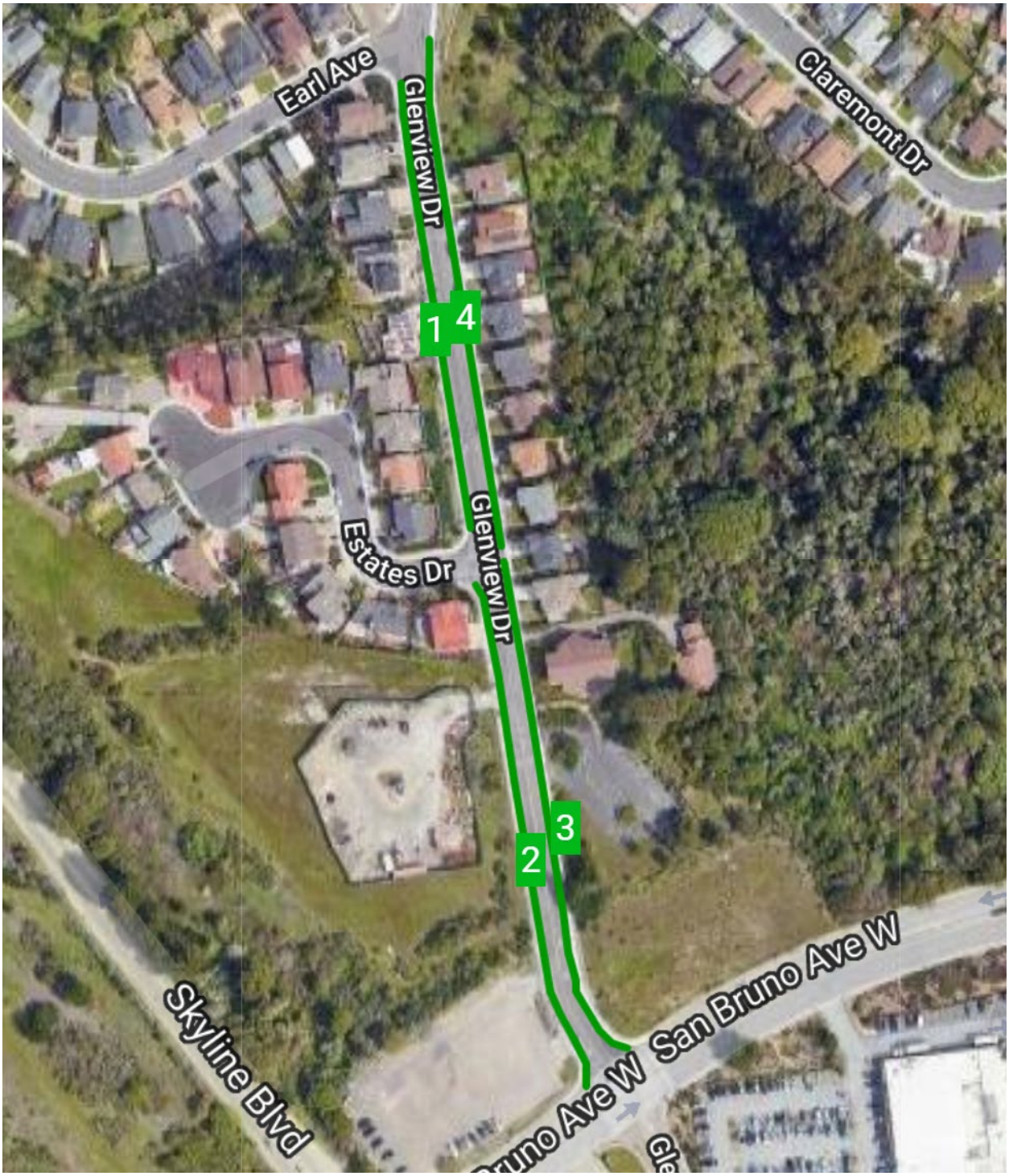


Table 2. Street Parking Occupancy Data

Location ID	Capacity	Occupancy			
		Tuesday		Saturday	
		4:00 PM	10:00 PM	4:00 PM	10:00 PM
1	26	4	4	3	4
2	23	0	0	0	1
3	21	2	2	0	0
4	23	4	6	7	8

Source: DKS 2019

3.4 Roadway Network and Traffic Volumes

Turning movements counts at the eight study intersections were collected on May 14, 2019 for the weekday AM (7:00 - 9:00 AM) and PM (4:00 - 7:00 PM) peak periods. The data collection period at the intersection of San Bruno Avenue and Glenview Drive was extended (6:00 - 10:00 AM and 2:00 - 7:00 PM) to support signal warrant analysis. Detailed count information can be found in **Appendix A**. Existing conditions lane configurations and traffic volumes are presented in **Figure 6** and **Figure 7**.

3.5 Intersection Level of Service

Intersection LOS was calculated using HCM 2010 methodology with the Synchro software package (Version 10.0). These results are shown in **Table 3.** According to intersection level-of-service standards outlined by the City of San Bruno General Plan, the following intersections operate worse than acceptable standards under existing conditions:

- San Bruno Ave and Glenview Dr (LOS F during AM peak hour)
- Sneath Lane and Claremont Dr (LOS F in the AM peak hour)
- Skyline Blvd and Sneath Lane (LOS F in the AM and PM peak hours)

3.6 Vehicle Queues

Potential queueing impacts were examined at the intersections most likely to be impacted by project traffic. The 95th percentile vehicle queues were examined for the westbound approach at the intersection of Skyline Boulevard and San Bruno Avenue and for all approaches at the intersection of Skyline Boulevard and Sneath Lane. Vehicle queues were generated with the Synchro software package (Version 10.0). Approaches where the 95th percentile queue exceeded available storage are shown in **Table 4.**

Vehicle queues exceeded available storage for five movements in the existing condition. For each of these movements the available storage is governed by the distance from the upstream intersection. Only the northbound left movement at Skyline Boulevard and Sneath Lane occurs at a turn pocket.

Figure 6. Lane Configurations and Intersection Control

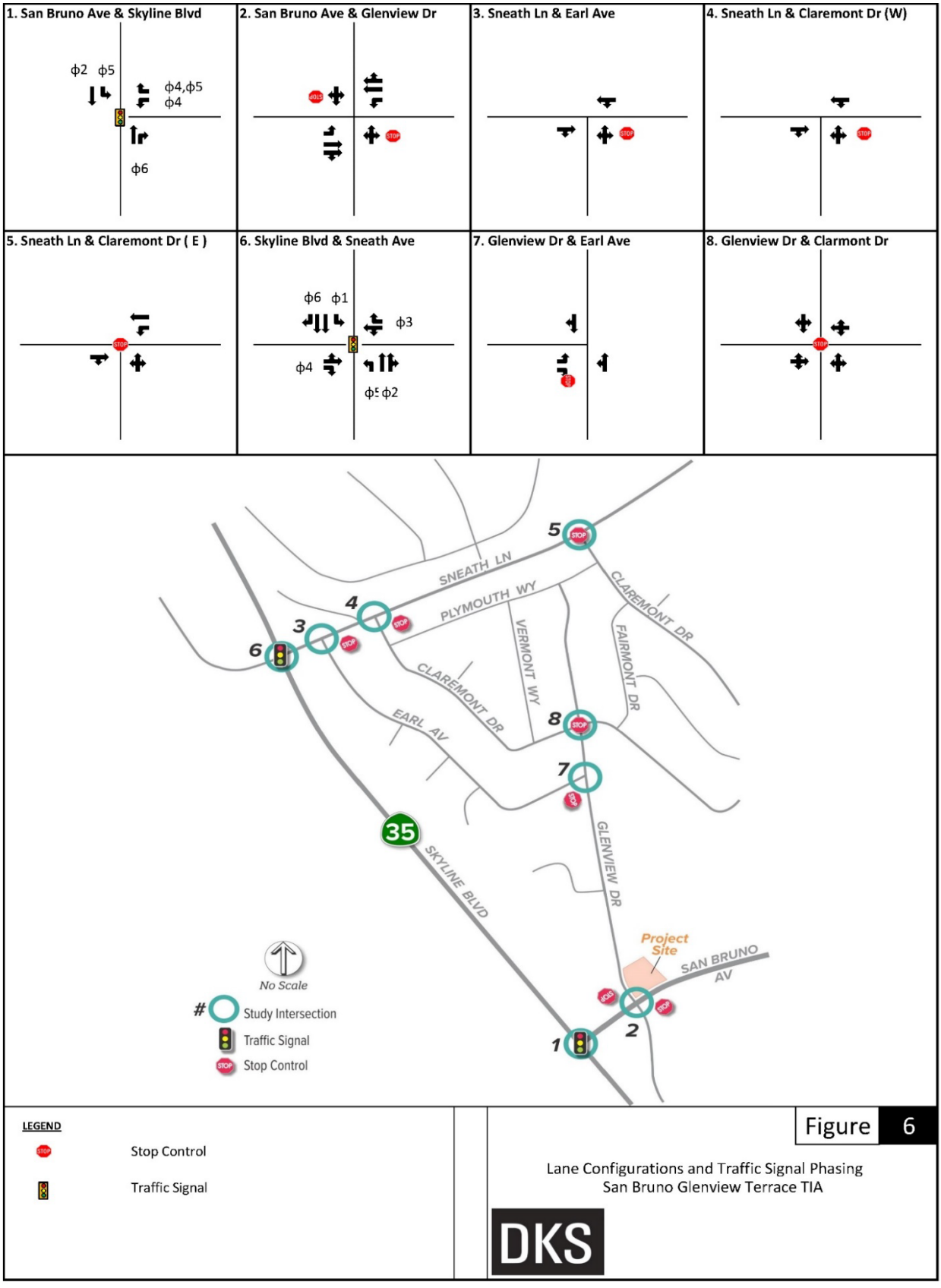


Figure 7. Existing Turning Movements

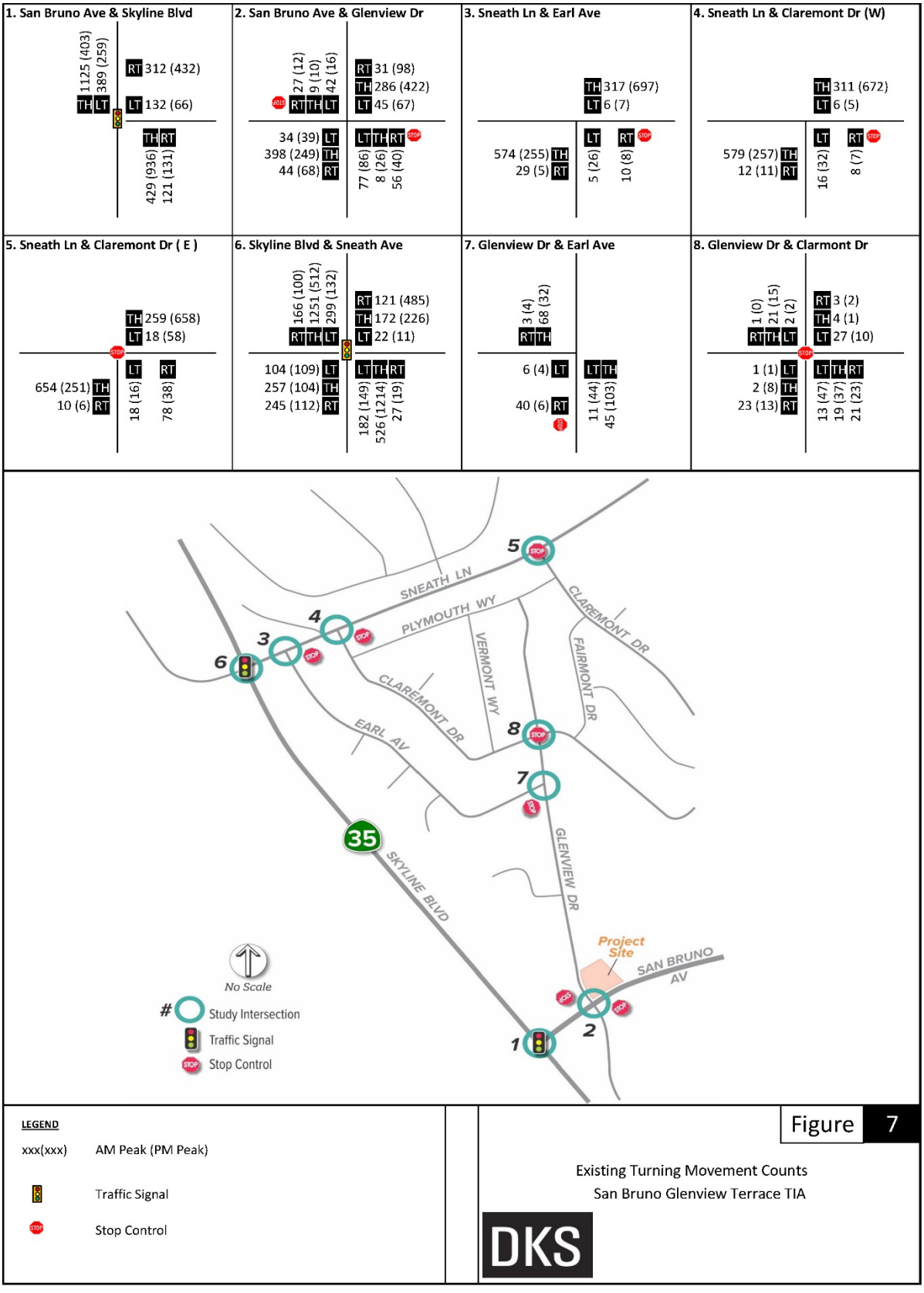


Table 3. Existing Conditions LOS Summary

Intersection	Control	Approach Direction	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1. Skyline Blvd & San Bruno Ave	Signalized	All	27.4	C	41.2	D
2. San Bruno Ave & Glenview Dr	TWSC	NB	**107.5**	**F**	**45.4**	**E**
3. Earl Ave & Sneath Ln	TWSC	NB	16.3	C	18.8	C
4. Claremont Dr (W) & Sneath Ln	TWSC	NB	19.9	C	19.8	C
5. Claremont Dr (E) & Sneath Ln	AWSC	All	**64.5**	**F**	32.4	D
6. Skyline Blvd. & Sneath Ln	Signalized	All	**192.9**	**F**	**158.5**	**F**
7. Glenview Dr & Earl Ave	TWSC	EB	9.1	A	9.3	A
8. Glenview Dr & Claremont Dr	AWSC	All	7.3	A	7.5	A

Source: DKS Associates, 2019.

Notes: Average Delay (AWSC/Signalized); Worst Approach Delay (TWSC) (seconds per vehicle), LOS: Level of Service

Intersections operating below acceptable LOS are in **bold.**

Table 4. Existing Conditions Queuing Summary

Intersection	Approach Direction	Available Storage	95th %-ile Queue (feet)	
			AM Peak Hour	PM Peak Hour
1. Skyline Blvd & San Bruno Ave	WBR	280	100.0	**375.0**
6. Skyline Blvd. & Sneath Ln	EBT	280	**575.0**	275.0
	WBT/L	165	**400.0**	**425.0**
	WBR	165	0.0	**175.0**
	NBL	275	**325.0**	200.0

Source: DKS Associates, 2019.

Approaches where the 95th percentile queue exceeds available storage are shaded and in **bold.**

4 CUT-THROUGH TRAFFIC ANALYSIS

To assess the extent of traffic that passes through the study area with neither origin nor destination in this area during the PM period, a cut-through analysis was conducted. A license plate survey using video license plate matching was employed to count the number of cut-through vehicles. The survey was conducted by setting up observation points at four potential access/egress points, as identified in **Figure 8**. The license plate numbers and times were recorded for each vehicle passing through the observation points. Given the distance and speed limit between the access/egress points, it was determined that a cut-through trip would have a travel time of under 10 minutes.

Figure 8 shows the number and distribution of cut-through trips originating from Sneath Lane and San Bruno Avenue. Cut-through patterns are similar to the prevalent PM travel patterns, with the majority of trips being northbound to avoid excessive delays and long queues along Skyline Boulevard. The majority of the cut-through traffic enters the study area at Glenview Drive from San Bruno Avenue and exits to Sneath Lane from Claremont Drive. The red arrows and associated numbers show the direction and magnitude of cut-through trips presented as both total number as well as a percentage of total vehicles entering the study area from San Bruno Avenue and Sneath Lane during the PM peak period. Accordingly, 28% of trips entering the study area from San Bruno Avenue were found to be cut-through while this number for Sneath Lane drops to 7%.

A sensitivity analysis of the effect of cut-through traffic on the operations of these intersections was conducted. To test the impact of cut-through traffic, cut-through traffic volumes at the Glenview Drive and Claremont Drive intersections was removed and the intersections' LOS recalculated. Currently, these affected intersections are operating at LOS D or better during the PM peak hour. Northbound cut-through traffic was assumed to avoid congestion along S-35 by turning right onto Glenview Drive from San Bruno Avenue, and then distributing through to Earl Avenue, Claremont Drive (W) and Claremont Drive (E) to turn left onto Sneath Lane and eventually access SR-35. To determine the effect of the cut-through traffic on the study intersections, the identified volumes were rerouted directly to San Bruno Avenue and Skyline Drive and LOS was recalculated. The analysis showed no improvement of LOS at these intersections. The intersection of San Bruno Avenue and Glenview Drive saw increased delay due to increased through movements. **Table 5** summarizes the results of the sensitivity analysis.

While the presence of cut-through traffic is not currently affecting the operation of the study intersections, it can still be negatively perceived by residents. Moreover, the volume of cut-through traffic could potentially increase as regional traffic congestion worsens. This would not be an effect of the proposed project since all trips to or from the project site are, by definition, project trips. However, should cut-through traffic become problematic at some point in the future, traffic calming measures could be considered. These measures could include the installation of speed humps and cushions, bulb-outs and curb extensions at intersections, or turn restrictions (either through turn prohibition signs for peak periods or the installation of physical barriers at the neighborhood entrances).

Figure 8. Distribution of Cut-Through Traffic in the Study Area

Table 5. Sensitivity Analysis of the Effect of Cut-Through Traffic on Intersection LOS

Intersection	Control	Approach Direction	PM Peak Hour			
			Existing		No Cut-Through	
			Delay	LOS	Delay	LOS
2. San Bruno Ave & Glenview Dr	TWSC	NB	42.4	E	44.3	E
3. Earl Ave & Sneath Ln	TWSC	NB	18.8	C	16.6	C
4. Claremont Dr (W) & Sneath Ln	TWSC	NB	19.8	C	17.4	C
5. Claremont Dr (E) & Sneath Ln	AWSC	All	32.4	D	32.3	D

Source: DKS Associates, 2019.

Notes: Average Delay (seconds per vehicle), LOS: Level of Service

5 PROJECT CONDITIONS

5.1 Project Description

The Glenview Terrace Residential project involves the construction of 29 single-family homes on the northeast corner of San Bruno Avenue and Glenview Drive. The project site is located between Interstate 280 (I-280) to the east and Skyline Boulevard/State Route 35 to the west with direct access provided by San Bruno Avenue to the south, and Sneath Lane to the north. I-380 has an interchange with I-280 between Sneath Lane and San Bruno Avenue, allowing access to and from El Camino Real and US-101 further to the west. Land uses adjacent to the project site include single-family residential, neighborhood commercial, elementary school, fire station and open space. A total of 20 guest spaces are proposed throughout the site in addition to the driveways and garages in each unit. On-street parking in the vicinity of the project site includes a total of 93 spaces along Glenview Drive.

The development is expected to create additional volume throughout the neighborhood that will be split between northbound and southbound travelers commuting toward San Francisco and Silicon Valley, respectively. This commute will primarily be split between I-280 and Skyline Boulevard/State Route 35.

5.2 Trip Generation

Trip generation of the proposed project was based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (2017), as summarized in **Table 6**, for the AM and PM peak hours respectively. The proposed project would generate 274 daily trips, including 21 net new AM peak hour trips (5 inbound, 16 outbound) and 29 net new PM peak hour trips (18 inbound, 11 outbound).

Table 6. Project Trip Generation

Site Use	ITE Code	Size	Units	Trip Rate			Daily Trips
				Daily Rate	AM Peak Hour [1]	PM Peak Hour [1]	
Single Family Detached Housing	210	29	DU	9.44	0.74	0.99	**274**
New Trips							**274**

Trip Generation							
AM Peak Hour [1]				PM Peak Hour [1]			
Total Trips	% In	In	Out	Total Trips	% In	In	Out
21	25%	5	16	**29**	63%	18	11
21		5	16	**29**		18	11

Source: Institute of Transportation Engineers, Trip Generation Manual, 10th edition, 2017.

[1] Rates based on peak hour of adjacent street.

5.3 Trip Distribution

The direction of approach and departure for project trips varies depending on the type of land use. DKS reviewed traffic volumes, turning movements at the study intersections, and locations of various land uses as part of this analysis. Trip distribution patterns were derived by evaluating popular workplace locations general points of interest in consultation with the City of San Bruno. The trip distribution patterns are illustrated in **Figure 9**.

5.4 Trip Assignment

Project-generated trips were assigned to the roadway network based on access points, trip distribution assumptions and likely travel patterns. The proportion of these trips that would travel through the study intersections was used for the intersection LOS analysis under the project condition. **Figure 10** illustrates the Peak Hour Project Trips at each study intersection for the AM and PM peak hours.

Figure 9. Project Trip Distribution

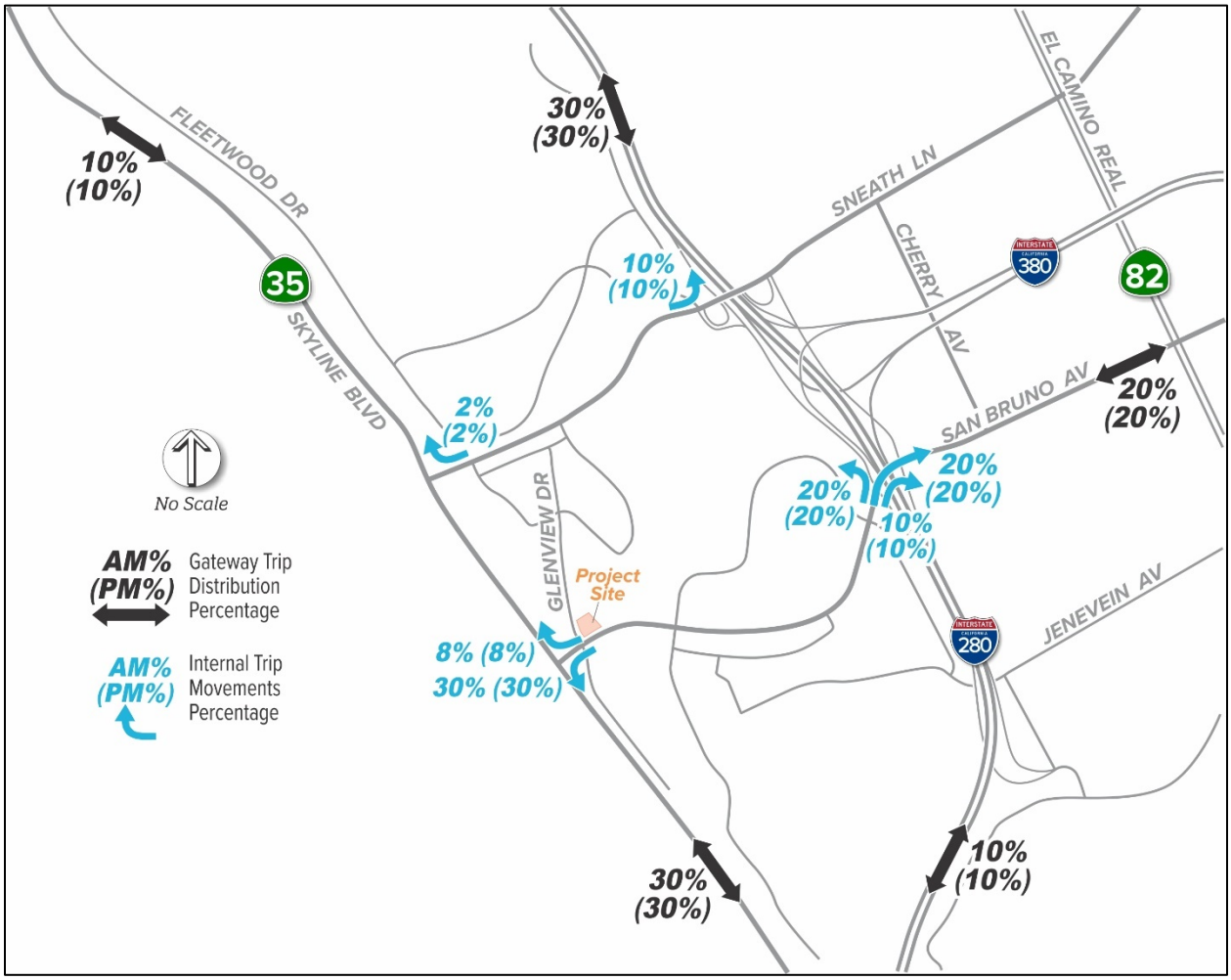
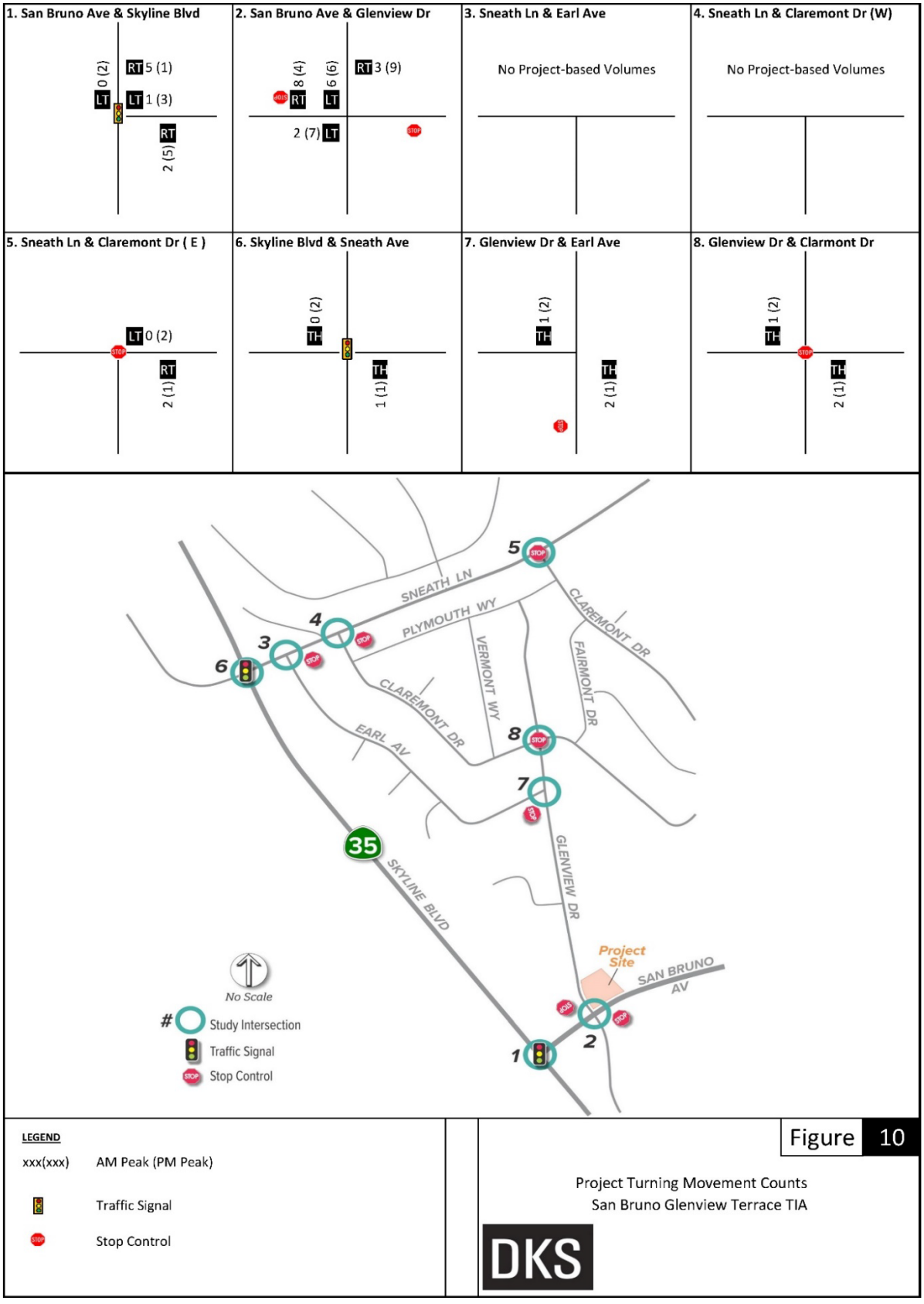


Figure 10. Project Turning Movements



5.5 Existing plus Project Conditions

Project-generated trips, as obtained from trip assignment in the previous section, were added to the existing traffic volumes to obtain existing plus project traffic volumes. These are shown in **Figure 11.**

5.5.1 Existing Plus Project Intersection Level of Service

Table 7 summarizes the results of the level of service analysis under Existing plus Project traffic conditions. With the addition of project generated trips, the intersection of **San Bruno Ave and Glenview Drive**, which was already operating worse than the standard in the AM peak hour, shows an increase to the worst approach delay of 8 seconds for the northbound approach when compared to existing conditions. This intersection also goes from LOS E to LOS F in the PM peak hour. However, because the project adds fewer than ten additional trips to the critical movement (northbound left turn) and the intersection does not meet volume warrants for signalization, the additional delay does not constitute an impact.

The intersection of **Claremont Drive (E) and Sneath Lane** is already operating at LOS F during the AM peak hour under existing conditions. Because the project adds fewer than ten additional trips to the critical movement (eastbound through) during the AM peak and the intersection does not meet volume warrants for signalization, the additional delay does not constitute an impact.

The intersection of **Skyline Boulevard and Sneath Lane** also operates below the standard under existing conditions in both the AM and PM peak periods. Here, the addition of project generated trips results in fewer than four seconds of additional delay to the critical movement (westbound through (AM), northbound through (PM). All other study intersections would operate at LOS D or better under Existing plus Project conditions.

Table 7. Existing Plus Project LOS Summary

Intersection	Control	Approach Direction	AM Peak Hour				PM Peak Hour			
			Existing		Ex. + Proj.		Existing		Ex. + Proj.	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Skyline Blvd & San Bruno Ave	Signalized	All	27.4	C	27.5	C	41.2	D	41.6	D
2. San Bruno Ave & Glenview Dr	TWSC	NB	**107.5**	**F**	**115.5**	**F**	**45.4**	**E**	**50.8**	**F**
3. Earl Ave & Sneath Ln	TWSC	NB	16.3	C	16.3	C	18.8	C	18.8	C
4. Claremont Dr (W) & Sneath Ln	TWSC	NB	19.9	C	19.9	C	19.8	C	19.8	C
5. Claremont Dr (E) & Sneath Ln	AWSC	All	**64.5**	**F**	**64.6**	**F**	32.4	D	32.4	D
6. Skyline Blvd. & Sneath Ln	Signalized	All	**192.9**	**F**	**192.9**	**F**	**158.5**	**F**	**157.8***	**F**
7. Glenview Dr & Earl Ave	TWSC	EB	9.1	A	9.1	A	9.3	A	9.3	A
8. Glenview Dr & Claremont Dr	AWSC	All	7.3	A	7.3	A	7.5	A	7.5	A

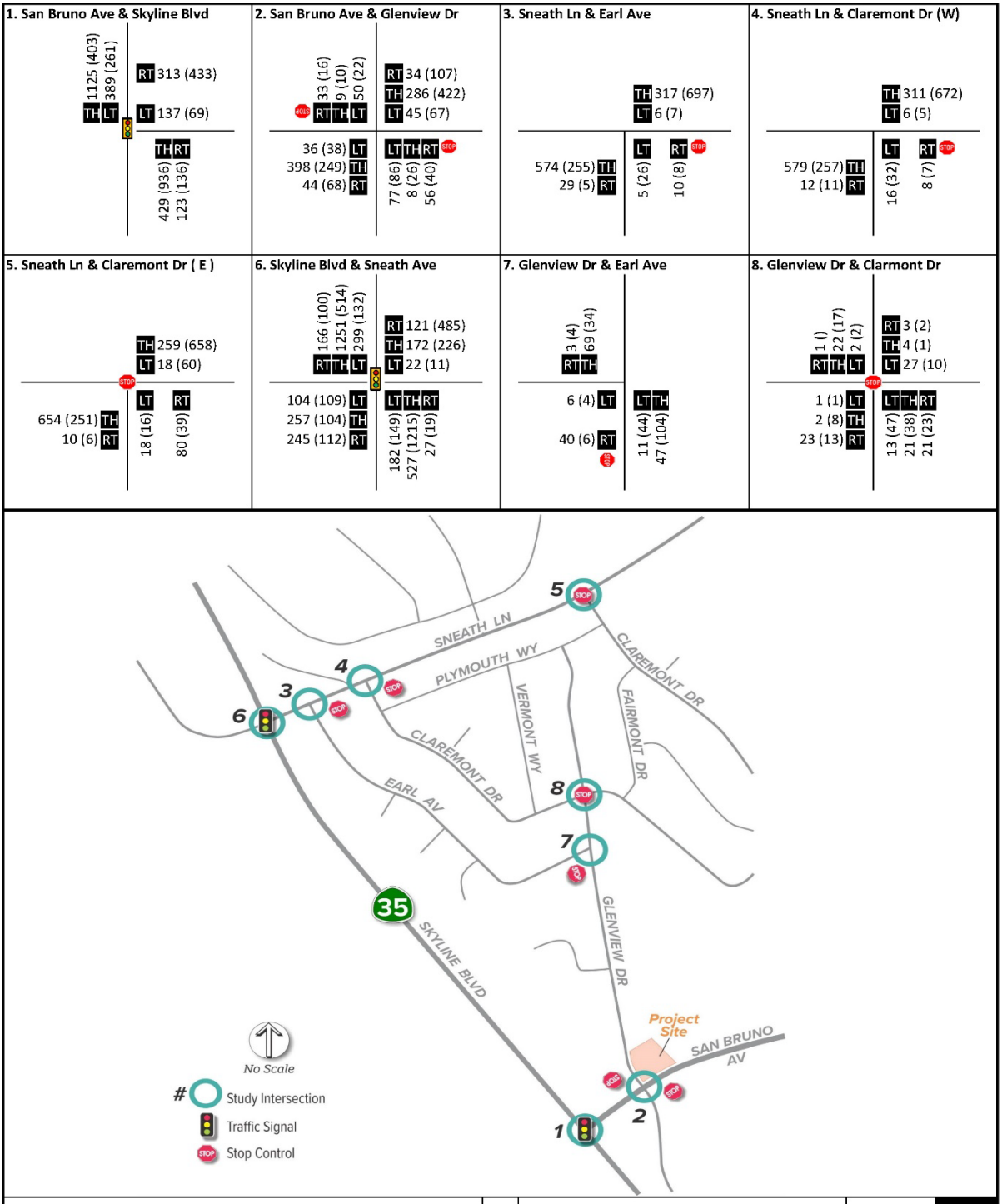
Source: DKS Associates, 2019.

Notes: Average Delay (AWSC/Signalized); Worst Approach Delay (TWSC) (seconds per vehicle), LOS: Level of Service

Intersections operating below acceptable LOS are shaded and in **bold.**

*Added vehicles experiencing lower delay cause overall average delay to decrease

Figure 11. Existing plus Project Turning Movement Volumes



5.5.2 Existing Plus Project Queuing Summary

Potential queueing impacts were examined at the intersections most likely to be impacted by project traffic. The 95th percentile vehicle queues were examined for the westbound approach at the intersection of Skyline Boulevard and San Bruno Avenue and for all approaches at the intersection of Skyline Boulevard and Sneath Lane. Vehicle queues were generated with the Synchro software package (Version 10.0). Approaches where the 95th percentile queue exceeded available storage are shown in **Table 8.**

There was negligible difference in vehicle queues under existing versus existing plus project conditions. As shown, when rounded to the nearest 25 ft. for vehicle length, the values are identical for both conditions.

Table 8. Existing Plus Project Queuing Summary

Intersection	Approach Direction	Available Storage	95th %-ile Queue (feet)			
			AM Peak Hour		PM Peak Hour	
			Existing	Ex. + Proj.	Existing	Ex. + Proj.
1. Skyline Blvd & San Bruno Ave	WBR	300	100	100	**375**	**375**
6. Skyline Blvd. & Sneath Ln	EBT	280	**575**	**575**	275	275
	WBT	165	**400**	**400**	**425**	**425**
	WBR	165	0	0	**175**	**175**
	NBL	275	**325**	**325**	200	200

Source: DKS Associates, 2019.

Intersections operating below acceptable LOS are shaded and in **bold.**

6 BACKGROUND CONDITIONS

This scenario is based on the Existing Conditions with the addition of traffic from approved projects within the vicinity of the site. Background traffic conditions are conditions within the next three to five years, just before the completion of the proposed development. This chapter describes the methodology used to determine background traffic volumes and traffic conditions.

6.1 Approved Developments

Background traffic volumes for the study intersections were identified by adding the trips generated by nearby approved but not yet completed/occupied projects to the existing traffic volumes of the study intersections.

There are two approved developments that have the potential to impact the traffic conditions within the study area and the study intersections. These projects are currently under construction or will be constructed in the next few years. Traffic volumes produced by these projects are incorporated into the Background Conditions and include:

1. **Skyline College Residential Project**: Approved 70-unit residential project with two components – 40 single-family detached homes on a 6-acre site, and 30 apartment units for college faculty and staff on a 2-acre site.
2. **Mills Park Project**: Two five story, 70' tall mixed-use buildings over two parcels. Parcel A measure 2.42 acres and includes 182 dwellings, made up of 12 studios, 117 one-bedroom units, and 53 two-bedroom units, and approximately 41,600 square feet of retail space, and 435 parking spaces. Parcel B measures 2.96 acres and includes 243 dwelling units, made up of 20 studios, 154 one-bedroom units, and 69 two-bedroom units, approximately 12,600 sq. ft. of retail space, and 426 parking spaces.

For this analysis, it is assumed that the transportation network under the background conditions and the existing conditions will remain the same. Other than minor changes such as traffic calming measures along Skyline Boulevard and safety improvements along Sneath Lane, none of the study intersections and roadway segments in the study area are expected to change significantly.

6.2 Programmed/Planned Transportation Facility Improvements

SamTrans has approved the conversion of the ECR bus route into a Bus Rapid Transit facility. The improvements will extend along El Camino Real from the Daly City Bart station to the Palo Alto Caltrain station. Phase 1 is estimated to be completed by 2020, Phase 2 by 2040. While this project may have broader implications for travel patterns, it is not expected to directly impact study facilities.

6.3 Roadway Network and Traffic Volumes

The traffic studies of approved projects were referred to for their respective trip generation estimates, if available. Estimated trips from the approved projects were distributed and assigned through the affected study intersections based on the trip distribution assumptions present in the traffic studies or based on known travel patterns in the study area. The following study intersections were affected by the addition of trips from approved developments:

- Skyline Boulevard & San Bruno Avenue
- San Bruno Avenue & Glenview Drive
- Skyline Boulevard & Sneath Lane

Background traffic volumes are shown in Figure 12 and **Figure 13**.

6.4 Background Conditions Intersection Level of Service

Table 9 summarizes the results of the level of service analysis under Existing plus Project traffic conditions**.** As with Existing Conditions, the following intersections are operating worse than the level of service standards set by the City of San Bruno (LOS D):

- San Bruno Avenue & Glenview Drive (AM)
- Claremont Drive (E) & Sneath Lane (AM)
- Skyline Boulevard & Sneath Lane (AM, PM)

6.4.1 Background Queuing Summary

Potential queueing impacts were examined at the intersections most likely to be impacted by project traffic. The 95th percentile vehicle queues were examined for the westbound approach at the intersection of Skyline Boulevard and San Bruno Avenue and for all approaches at the intersection of Skyline Boulevard and Sneath Lane. Vehicle queues were generated with the Synchro software package (Version 10.0). Approaches where the 95th percentile queue exceeded available storage are shown in **Table 10**.

Figure 12. Additional Background Turning Movement Volumes

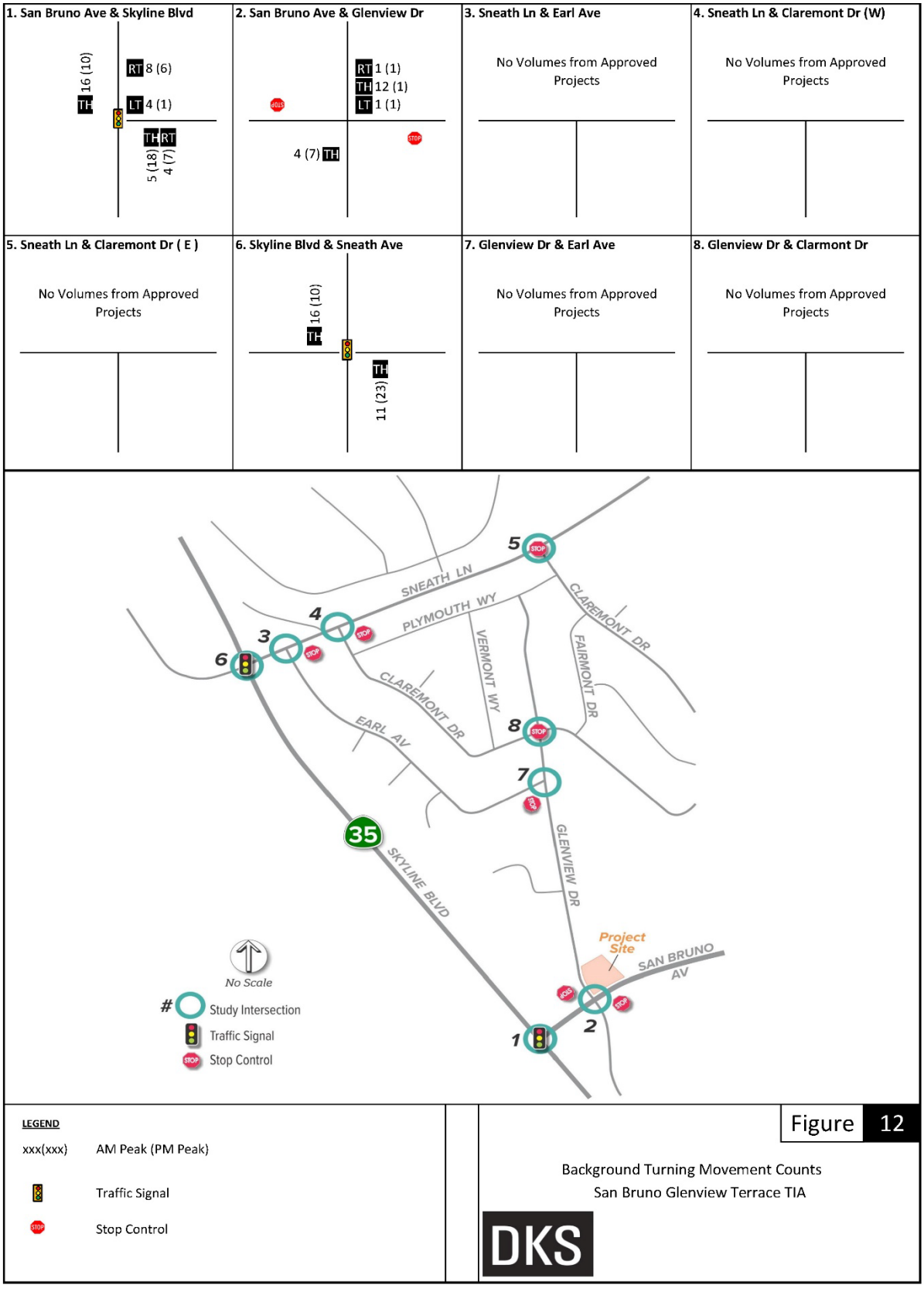


Figure 13. Total Background Turning Movement Volumes

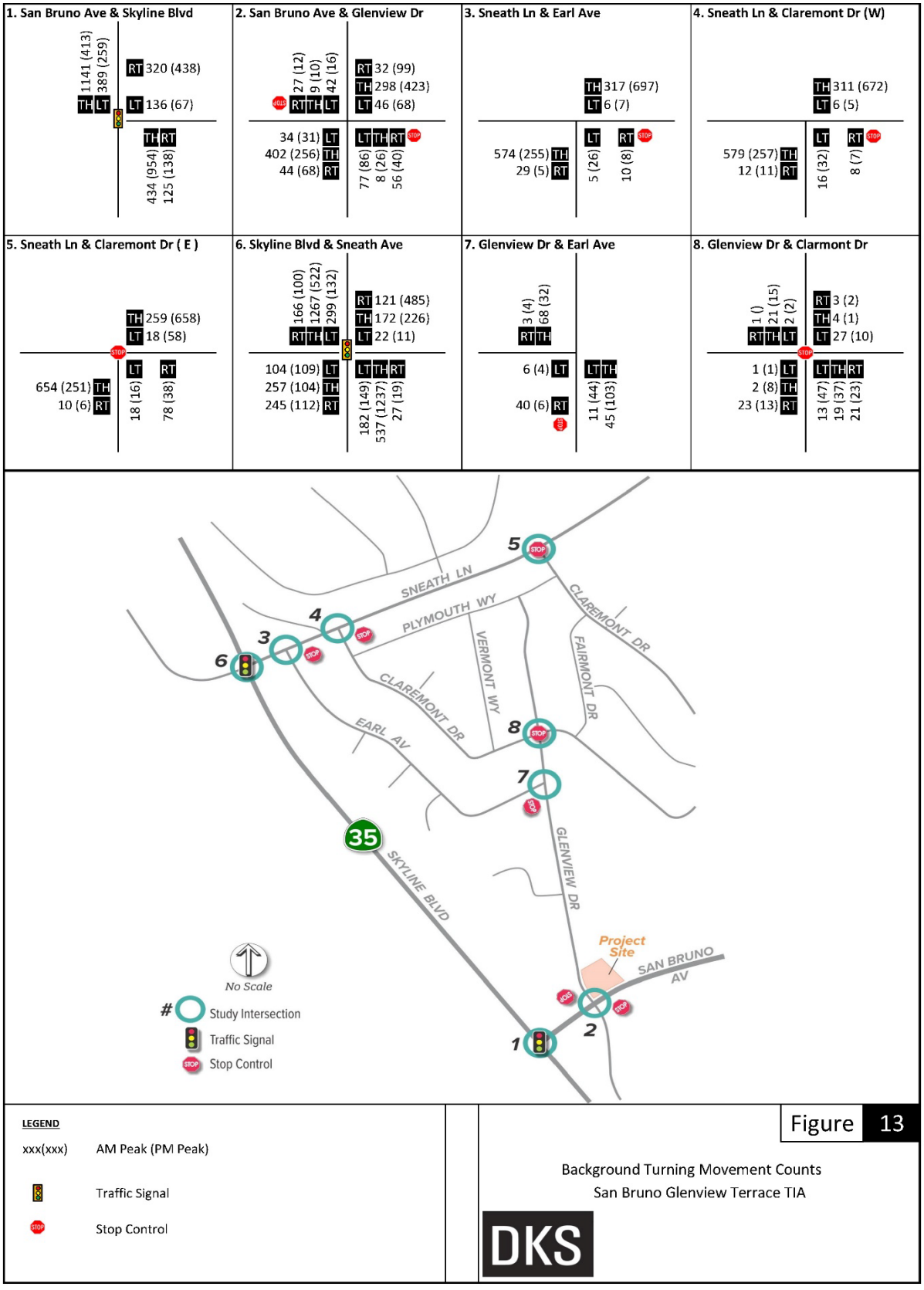


Table 9. Background Conditions LOS Summary

Intersection	Control	Approach Direction	AM Peak Hour		PM Peak Hour	
			Background		Background	
			Delay	LOS	Delay	LOS
1. Skyline Blvd & San Bruno Ave	Signalized	All	30.2	C	43.6	D
2. San Bruno Ave & Glenview Dr	TWSC	NB	**117.3**	**F**	**43.9**	**E**
3. Earl Ave & Sneath Ln	TWSC	NB	16.3	C	18.8	C
4. Claremont Dr (W) & Sneath Ln	TWSC	NB	19.9	C	19.8	C
5. Claremont Dr (E) & Sneath Ln	AWSC	All	**64.5**	**F**	32.4	D
6. Skyline Blvd. & Sneath Ln	Signalized	All	**195.3**	**F**	**162.0**	**F**
7. Glenview Dr & Earl Ave	TWSC	EB	9.1	A	9.3	A
8. Glenview Dr & Claremont Dr	AWSC	All	7.3	A	7.5	A

Source: DKS Associates, 2019.

Notes: Average Delay (AWSC/Signalized); Worst Approach Delay (TWSC) (seconds per vehicle), LOS: Level of Service

Intersections operating below acceptable LOS are in **bold.**

Table 10. Background Conditions Queuing Summary

Intersection	Approach Direction	Available Storage	95th %-ile Queue (feet)	
			AM Peak Hour	PM Peak Hour
1. Skyline Blvd & San Bruno Ave	WBR	300	100.0	**375.0**
6. Skyline Blvd. & Sneath Ln	EBT	280	**575.0**	275.0
	WBT	165	**400.0**	**425.0**
	WBR	165	0.0	**175.0**
	NBL	275	**325.0**	200.0

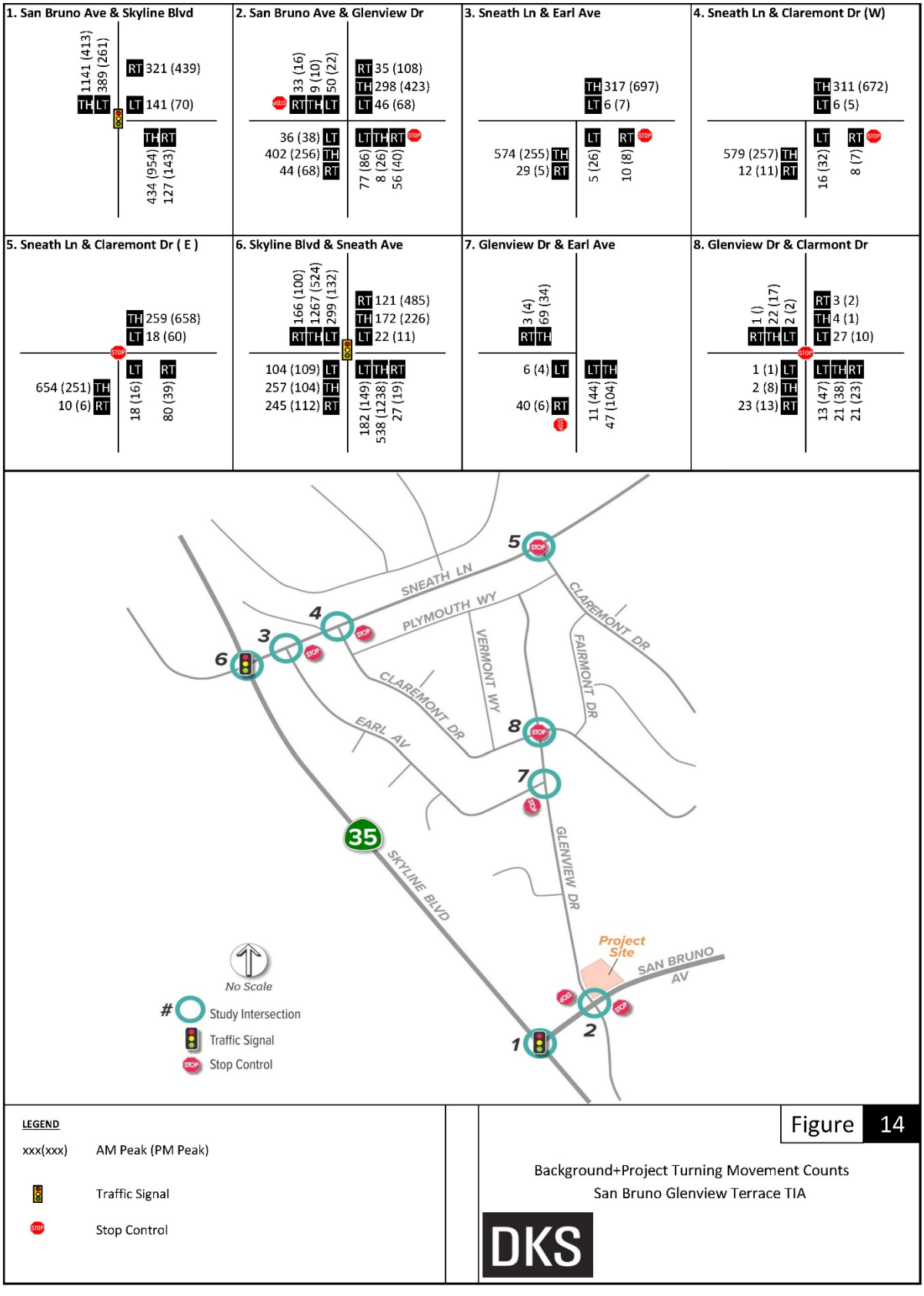
Source: DKS Associates, 2019.

Intersections Approaches where the 95th percentile queue exceeds available storage are shaded and in **bold.**

6.5 Background plus Project Conditions

Project-generated trips, as previously shown in **Figure 10**, were added to the background traffic volumes to obtain background plus project volumes. **Figure 14** shows the background plus project turning movement volumes at the study intersections.

Figure 14. Background plus Project Turning Movement Volumes



6.5.1 Background Plus Project Intersection Analysis

Table 11 summarizes the results of the level of service analysis under background plus project conditions. Similar to the existing plus project scenario, with the addition of project generated trips, the intersection of **San Bruno Avenue and Glenview Drive**, which is already operating worse than the standard, shows an increase to average delay of 10.7 seconds for the northbound approach in the AM peak hour when compared with the background conditions. However, 10 additional trips were not added to the critical movement (northbound left turn) and the intersection did not pass the volume warrants for signalization so there is no impact at this intersection.

The intersection of **Claremont Drive (E) and Sneath Lane** operates at worse than the standard during the AM peak under background conditions. Because the project adds fewer than ten additional trips to the critical movement (eastbound through) during the AM peak and the intersection does not meet volume warrants for signalization, the additional delay does not constitute an impact.

The signalized intersection of **Skyline Boulevard and Sneath Lane** also operates at LOS F under background conditions for both the AM and PM peak hours. However, the addition of project generated trips does not significantly add to the critical movement (westbound through (AM), northbound through (PM)) delay at this location.

Table 11. Background Plus Project LOS Summary

Intersection	Control	Approach Direction	AM Peak Hour				PM Peak Hour			
			Background		BG + Proj.		Background		BG + Proj.	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Skyline Blvd & San Bruno Ave	Signalized	All	30.2	C	30.4	C	43.6	D	43.9	D
2. San Bruno Ave & Glenview Dr	TWSC	NB	**117.3**	**F**	**128.2**	**F**	**43.9**	**E**	**53.4**	**F**
3. Earl Ave & Sneath Ln	TWSC	NB	16.3	C	16.3	C	18.8	C	18.8	C
4. Claremont Dr (W) & Sneath Ln	TWSC	NB	19.9	C	19.9	C	19.8	C	19.8	C
5. Claremont Dr (E) & Sneath Ln	AWSC	All	**64.5**	**F**	**64.6**	**F**	32.4	D	32.4	D
6. Skyline Blvd. & Sneath Ln	Signalized	All	**195.3**	**F**	**195.0***	**F**	**161.3**	**F**	**161.3***	**F**
7. Glenview Dr & Earl Ave	TWSC	EB	9.1	A	9.1	A	9.3	A	9.3	A
8. Glenview Dr & Claremont Dr	AWSC	All	7.3	A	7.3	A	7.5	A	7.5	A

Source: DKS Associates, 2019.

Notes: Average Delay (AWSC/Signalized); Worst Approach Delay (TWSC) (seconds per vehicle), LOS: Level of Service

Intersections operating below acceptable LOS are in **bold.**

***Addition of vehicles experiencing lower delay causes overall average delay to decrease.

With the addition of project traffic, the following intersections will operate at LOS of E or worse:

- San Bruno Avenue & Glenview Drive (AM, PM)
- Claremont Drive East & Sneath Lane (AM)
- Skyline Boulevard & Sneath Lane (AM, PM)

Because these intersections were already operating below the LOS standard under Background conditions, any additional delay does not represent a significant impact. All other study intersections operate at LOS D or better under Background plus Project conditions.

6.5.2 Background Plus Project Queuing Summary

Potential queueing impacts were examined at the intersections most likely to be impacted by project traffic. The 95th percentile vehicle queues were examined for the westbound approach at the intersection of Skyline Boulevard and San Bruno Avenue and for all approaches at the intersection of Skyline Boulevard and Sneath Lane. Vehicle queues were generated with the Synchro software package (Version 10.0). Approaches where the 95th percentile queue exceeded available storage are shown in **Table 12.** As shown, when rounded to the nearest 25 feet for vehicle length, the difference in vehicle queues for the Plus Project condition is negligible.

Table 12. Background Plus Project Queuing Summary

Intersection	Approach Direction	Available Storage	95th %-ile Queue (feet)			
			AM Peak Hour		PM Peak Hour	
			Back-ground	BG + Proj.	Back-ground	BG + Proj.
1. Skyline Blvd & San Bruno Ave	WBR	300	100	100.0	**375**	**375.0**
6. Skyline Blvd. & Sneath Ln	EBT	280	**575**	**575.0**	275	275.0
	WBT	165	**400**	**400.0**	**425**	**425.0**
	WBR	165	0	0.0	**175**	**175.0**
	NBL	275	**325**	**325.0**	200	200.0

Source: DKS Associates, 2019.

Intersections Approaches where the 95th percentile queue exceeds available storage are shaded and in **bold.**

7 CUMULATIVE (2040) CONDITIONS

7.1 Forecast Methodology

Cumulative or future year traffic conditions were estimated using the regional travel demand model for San Mateo. This model consists of forecasted link volumes that were applied to the study area to establish future year turning movement counts. As the proposed land use was captured as part of the expected growth modelled in the 2040 Travel Demand Model, the project-generated trips were subtracted from the model forecast to generate the 2040 forecasted baseline cumulative condition volumes as shown in **Figure** 15. Cumulative plus project volumes can be found in **Figure 16.**

There were several expected changes to be made to the network for the cumulative condition. The 2016 City of San Bruno Walk 'n Bike Plan outlines changes that will affect the future operations of the study area. The plan outlines descriptions of pedestrian crossing improvements at San Bruno Avenue and Skyline Boulevard. These improvements include shortening the crossing distance by decreasing lane width and adding curb bulb-outs. The plan also states that where capacity is not needed, these curb bulb-outs will require the removal of turn pockets to allow for more space. In the case of San Bruno Avenue and Skyline Boulevard, removal of any of the turn pockets would degrade the intersection operations to worse than standard so no lane removals were included in the cumulative analysis. The document also outlines plans to add Class II bike lanes to Skyline Boulevard and San Bruno Avenue. While these changes are not expected to change operations at any of the study intersections, they are taken into account when considering potential improvements.

Figure 15. Cumulative Turning Movement Volumes

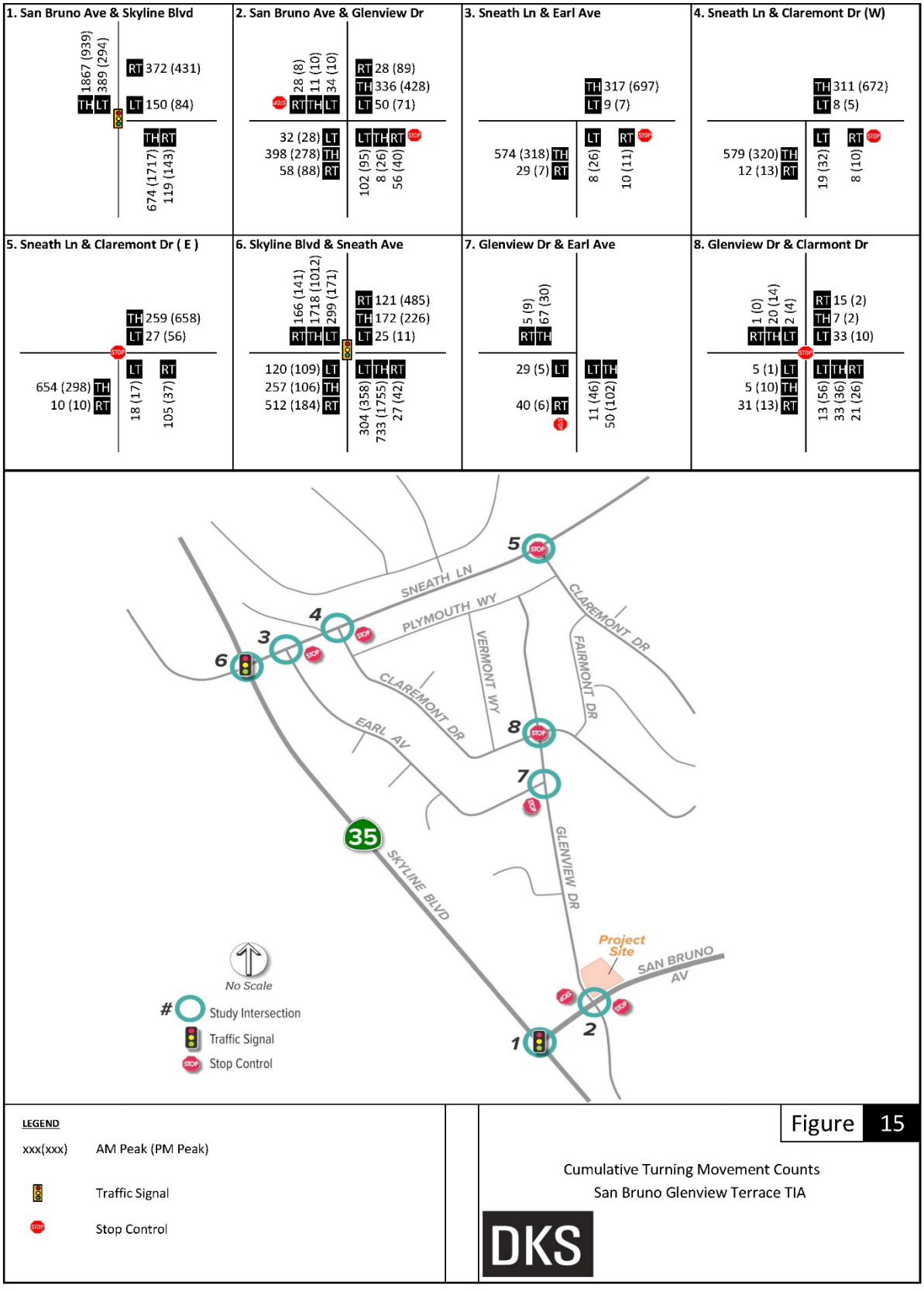
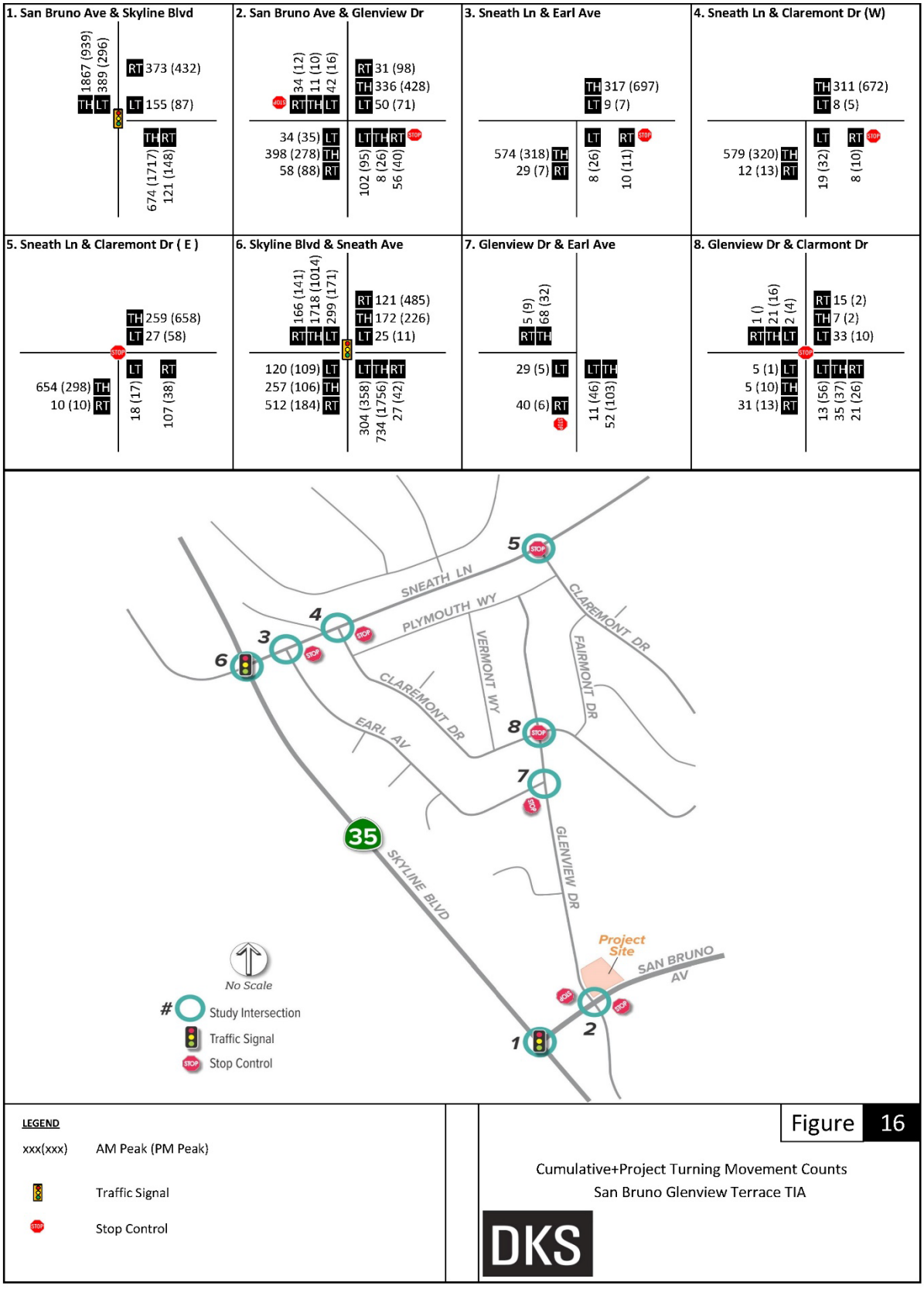


Figure 16. Cumulative plus Project Turning Movement Volumes



7.2 Cumulative and Cumulative Plus Project Intersection Analysis

Table 13 summarizes the results of the level of service analysis under Cumulative plus Project conditions. There are two signalized intersections operating at worse than the standard under Cumulative conditions during both the AM and PM peak hours:

- Skyline Boulevard & San Bruno Avenue – Critical Movement: Southbound Through (AM), Northbound Through (PM)
- Skyline Boulevard & Sneath Lane – Critical Movement: Westbound Through (AM), Northbound Through (PM)

However, project volumes do not cause more than a four second increase in delay to the critical movements so there is no impact.

There are two stop-controlled intersections operating at worse than the standard under Cumulative conditions during both the AM and PM peak hours:

- San Bruno Ave & Glenview Drive – Critical Movement: Northbound left turn
- Claremont Drive (E) & Sneath Lane - Critical Movement: Eastbound through (AM), Westbound through (PM)

However, project volumes do not add more than ten vehicle trips to the critical movement and these intersections do not meet volume warrants for signalization. Therefore, there are no significant impacts at these locations.

Table 13. Cumulative Plus Project LOS Summary

Intersection	Control	Approach Direction	AM Peak Hour				PM Peak Hour			
			Cumulative		Cum. + Proj.		Cumulative		Cum. + Proj.	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Skyline Blvd & San Bruno Ave	Signalized	All	**173.0**	**F**	**172.7***	**F**	**204.2**	**F**	**203.9***	**F**
2. San Bruno Ave & Glenview Dr	TWSC	NB	**272.4**	**F**	**291.8**	**F**	**70.1**	**F**	**79.9**	**F**
3. Earl Ave & Sneath Ln	TWSC	NB	17.9	C	17.9	C	19.7	C	19.7	C
4. Claremont Dr (W) & Sneath Ln	TWSC	NB	20.7	C	20.7	C	21.2	C	21.2	C
5. Claremont Dr (E) & Sneath Ln	AWSC	All	**66.9**	**F**	**67.1**	**F**	**37.7**	**E**	**37.7**	**E**
6. Skyline Blvd. & Sneath Ln	Signalized	All	**303.0**	**F**	**303.2**	**F**	**256.9**	**F**	**257.2**	**F**
7. Glenview Dr & Earl Ave	TWSC	EB	9.5	A	9.5	A	9.4	A	9.4	A
8. Glenview Dr & Claremont Dr	AWSC	All	7.4	A	7.5	A	7.6	A	7.6	A

Source: DKS Associates, 2019.

Notes: Average Delay (AWSC/Signalized); Worst Approach Delay (TWSC) (seconds per vehicle), LOS: Level of Service

Intersections operating below acceptable LOS are in **bold.**

***Added vehicles experiencing lower delay cause overall average delay to decrease

7.3 Cumulative and Cumulative Plus Project Queuing Summary

Potential queueing impacts were examined at the intersections most likely to be impacted by project traffic. The 95th percentile vehicle queues were examined for the westbound approach at the intersection of Skyline Boulevard and San Bruno Avenue and for all approaches at the intersection of Skyline Boulevard and Sneath Lane. Vehicle queues were generated with the Synchro software package (Version 10.0). Approaches where the 95th percentile queue exceeded available storage are shown in **Table 14.** As shown, when rounded to the nearest 25 feet for vehicle length, the difference in vehicle queues for the Plus Project condition is negligible.

Table 14. Cumulative Plus Project Queuing Summary

Intersection	Approach Direction	Available Storage	95th %-ile Queue (feet)			
			AM Peak Hour		PM Peak Hour	
			Cumulative	Cum. + Proj.	Cumulative	Cum. + Proj.
1. Skyline Blvd & San Bruno Ave	WBR	300	200.0	200.0	**425.0**	**425.0**
6. Skyline Blvd. & Sneath Ln	EBT	280	**600.0**	**600.0**	275.0	275.0
	WBT	165	**425.0**	**425.0**	**425.0**	**425.0**
	WBR	165	0.0	0.0	**175.0**	**175.0**
	NBL	275	**575.0**	**575.0**	**625.0**	**625.0**

Source: DKS Associates, 2019.

Intersections operating below acceptable LOS are shaded and in **bold.**

8 SUMMARY AND CONCLUSIONS

8.1 Impacts to Intersection Operations

While the project traffic does increase delay at several intersections in the study area, there are no significant impacts as a result of the added trips. San Bruno Avenue and Glenview Drive, Skyline Boulevard and Sneath Lane, and Sneath Lane and Claremont Drive (E) are all operating at worse than the standard LOS under existing conditions. Because the project does not add more than four additional seconds of delay to the critical movement at Skyline Boulevard and Sneath Lane, this additional delay does not constitute a significant impact. At the two unsignalized intersections already operating at worse than the LOS standard, the project does not add 10 or more additional trips to the critical movements and volume signal warrants are not met.

8.1.1 Potential Intersection Improvements

A potential improvement at the intersection of **San Bruno Avenue and Glenview Drive** is conversion to all-way stop control. The following AWSC warrants were met under existing and cumulative plus project conditions. According to the California Manual on Uniform Traffic Control Devices (MUTCD), a multi-way stop is warranted if:

- The total major road volume averages more than 300 vehicles per hour for any 8 hours of the day; and
- The minor road volume, including pedestrians and bikes, averages greater than 200 units per hour for those same 8 hours, with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during peak hour.

If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2. Since the posted speed limit of San Bruno Avenue is 40 mph the 70% factor is applied to the volume thresholds. As a result, both conditions are met at the intersection of **San Bruno Avenue and Glenview Drive**. Note that volume warrants for installation of a signal at this intersection were not met.

The addition of the all-way stop will improve operations for the cumulative plus project scenario from LOS F to LOS B with average delay of 13.7 seconds during the AM peak hour as and from LOS F to LOS C during the PM peak hour shown in **Table 15**. The detailed level of service report for this mitigation measure can be found in **Appendix B**.

Table 15. San Bruno Avenue and Glenview Drive AWSC LOS Summary

Intersection	AM Peak Hour							
	Existing		Bg.+Proj.		Cumulative		Cum. + Proj.	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
2. San Bruno Ave & Glenview Dr	17.8 (**107.5**)	C (**F**)	18.9 (**128.2**)	C (**F**)	20.8 (**272.4**)	C (**F**)	13.7 (**291.8**)	B (**F**)
	PM Peak Hour							
	12.9 (**45.4**)	B (**E**)	13.2 (53.4)	B (**F**)	13.4 (**70.1**)	B (**F**)	21.7 (**79.9**)	C (**F**)

Source: DKS Associates, 2021.

Notes: Average Delay (AWSC/Signalized); LOS: Level of Service

Intersections operating below acceptable LOS are in **bold.**

Values in Parentheses are before mitigation

Shown in **Table 16** are the Simtraffic 95th percentile queues for the cumulative plus project scenario, which represents the greatest traffic levels. In contrast to the queuing values reported in other sections of this report, these values are calculated with the microsimulation function which uses probability models to predict the queuing with several iterations of the peak hours. The simulation outputs can be found in **Appendix B**. With the addition of multi-way stop control at **San Bruno Avenue and Glenview Drive**, the queuing would still be served adequately by the existing lane storage lengths.

Table 16. Cumulative + Project AWSC Queuing Summary

Intersection	Approach Direction	Available Storage	95th %tile Queue (feet)	
			AM Peak Hour	PM Peak Hour
2. San Bruno Ave & Glenview Dr	WBL	65	25.0	25.0
	WBT	1000	150.0	125.0
	WBR	1000	175.0	250.0
	EBL	65	50.0	50.0
	EBT	275	75.0	75.0
	EBR	275	75.0	100.0

Source: DKS Associates, 2021.

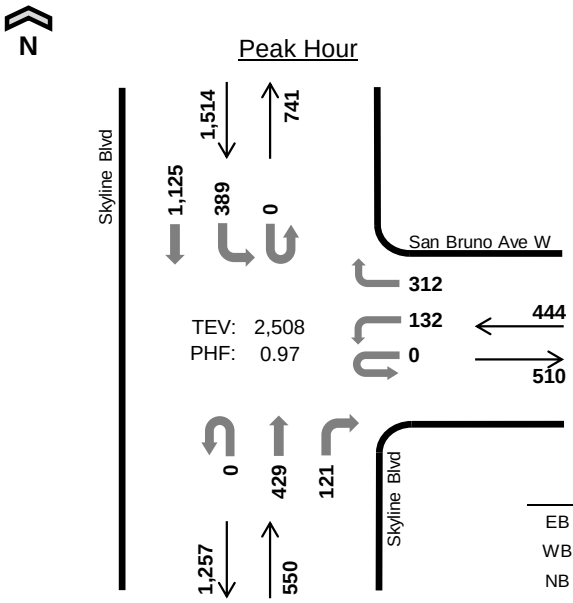
8.2 Other Impacts and Considerations

The development will have minimal effect on other aspects of transportation in the surrounding community. Emergency vehicle access will be maintained as in existing conditions since the development is not adding enough trips to create any significant congestion. Sight distance from horizontal and vertical curvature will not create a hazard since the driveways will be located on the low-speed Glenview Drive. Furthermore, southbound vehicles will be approaching a stop-controlled intersection so even lower speeds can be expected. There are no background pedestrian or bicycle projects along Glenview Drive. However, a Class II bike lane is proposed between Crestmoor Drive and Skyline Boulevard on San Bruno Avenue. This project will require road widening along the Project site.

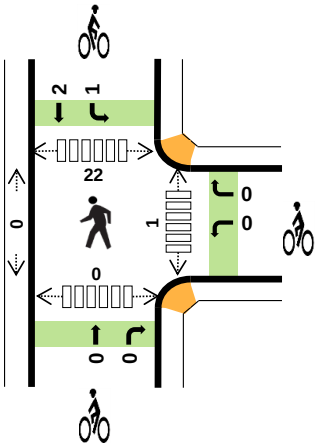
Appendix A
Turning Movement Counts

Skyline Blvd
San Bruno Ave W

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	-	-
WB	1.6%	0.87
NB	2.0%	0.86
SB	0.6%	0.94
TOTAL	1.1%	0.97



Two-Hour Count Summaries

Interval Start		n/a Eastbound				San Bruno Ave W Westbound				Skyline Blvd Northbound				Skyline Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	1	37	0	24	0	0	53	6	0	40	335	0	496	0
7:15 AM		0	0	0	0	0	39	0	38	0	0	70	16	0	34	336	0	533	0
7:30 AM		0	0	0	0	0	38	0	38	0	0	100	19	0	90	311	0	596	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**36**	**0**	**86**	**0**	**0**	**133**	**27**	**0**	**98**	**262**	**0**	**642**	2,267
8:00 AM		**0**	**0**	**0**	**0**	**0**	**40**	**0**	**87**	**0**	**0**	**110**	**33**	**0**	**106**	**270**	**0**	**646**	2,417
8:15 AM		**0**	**0**	**0**	**0**	**0**	**29**	**0**	**80**	**0**	**0**	**81**	**32**	**0**	**89**	**287**	**0**	**598**	2,482
8:30 AM		**0**	**0**	**0**	**0**	**0**	**27**	**0**	**59**	**0**	**0**	**105**	**29**	**0**	**96**	**306**	**0**	**622**	**2,508**
8:45 AM		0	0	0	0	0	30	0	74	0	0	111	21	0	100	236	0	572	2,438
Count Total		0	0	0	0	1	276	0	486	0	0	763	183	0	653	2,343	0	4,705	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**132**	**0**	**312**	**0**	**0**	**429**	**121**	**0**	**389**	**1,125**	**0**	**2,508**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**6**	**0**	**0**	**7**	**4**	**0**	**4**	**5**	**0**	**27**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**1%**	**-**	**2%**	**-**	**-**	**2%**	**3%**	**-**	**1%**	**0%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	1	*2*	0	0	0	1	*1*	0	0	3	0	*3*
7:15 AM	0	1	4	1	*6*	0	0	0	1	*1*	0	0	1	0	*1*
7:30 AM	0	0	3	3	*6*	0	0	0	0	*0*	2	0	5	0	*7*
7:45 AM	**0**	**1**	**2**	**1**	***4***	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**6**	**0**	*6*
8:00 AM	**0**	**3**	**1**	**1**	***5***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**3**	**0**	*3*
8:15 AM	**0**	**1**	**4**	**2**	***7***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**11**	**0**	*12*
8:30 AM	**0**	**2**	**4**	**5**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	***2***
8:45 AM	0	1	5	4	*10*	0	0	0	0	*0*	0	0	4	0	*4*
Count Total	0	9	24	18	*51*	0	0	0	5	*5*	3	0	35	0	*38*
Peak Hr	**0**	**7**	**11**	**9**	***27***	**0**	**0**	**0**	**3**	***3***	**1**	**0**	**22**	**0**	***23***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	n/a				San Bruno Ave W				Skyline Blvd				Skyline Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	4	0	0	1	0	0	6	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	2	0	6	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**4**	18
8:00 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**5**	21
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**1**	**0**	**0**	**2**	**0**	**7**	22
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**2**	**0**	**2**	**3**	**0**	**11**	**27**
8:45 AM	0	0	0	0	0	0	0	1	0	0	4	1	0	3	1	0	10	33
Count Total	0	0	0	0	0	1	0	8	0	0	18	6	0	10	8	0	51	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**6**	**0**	**0**	**7**	**4**	**0**	**4**	**5**	**0**	**27**	**0**

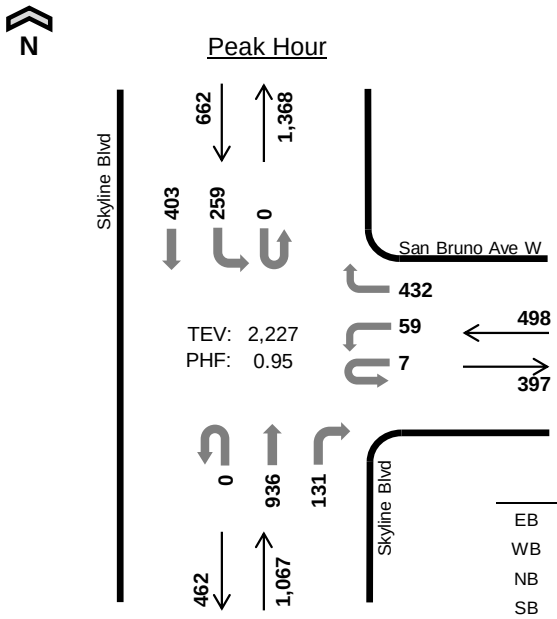
Two-Hour Count Summaries - Bikes

Interval Start	n/a			San Bruno Ave W			Skyline Blvd			Skyline Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	4
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	4
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	0	1	4	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	**0**

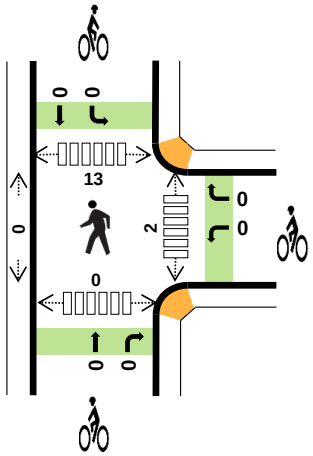
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Skyline Blvd
San Bruno Ave W

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	-	-
WB	0.4%	0.88
NB	0.0%	0.96
SB	0.3%	0.88
TOTAL	0.2%	0.95



Three-Hour Count Summaries

Interval Start		n/a Eastbound				San Bruno Ave W Westbound				Skyline Blvd Northbound				Skyline Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	0	0	0	6	10	0	95	0	0	238	34	0	69	100	0	552	0
5:00 PM		0	0	0	0	1	13	0	104	0	0	246	33	0	59	76	0	532	0
5:15 PM		0	0	0	0	0	18	0	124	0	0	236	35	0	60	110	0	583	0
5:30 PM		0	0	0	0	0	18	0	109	0	0	216	29	0	71	117	0	560	2,227
Peak Hour	All	0	0	0	0	7	59	0	432	0	0	936	131	0	259	403	0	2,227	0
	HV	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	4	0
	HV%	-	-	-	-	0%	0%	-	0%	-	-	0%	0%	-	1%	0%	-	0%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	0	1	0	1	*2*	0	0	0	0	*0*	2	0	6	0	*8*
5:00 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	3	0	*3*
5:30 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	3	0	*3*
Peak Hour	0	2	0	2	*4*	0	0	0	0	*0*	2	0	13	0	*15*

Three-Hour Count Summaries

Interval Start	n/a				San Bruno Ave W				Skyline Blvd				Skyline Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	29	0	70	0	0	214	44	0	58	100	0	515	0
4:15 PM	0	0	0	0	0	14	0	83	0	0	253	39	0	66	90	0	545	0
4:30 PM	0	0	0	0	0	15	0	96	0	0	239	43	0	57	100	0	550	0
4:45 PM	**0**	**0**	**0**	**0**	**6**	**10**	**0**	**95**	**0**	**0**	**238**	**34**	**0**	**69**	**100**	**0**	**552**	2,162
5:00 PM	**0**	**0**	**0**	**0**	**1**	**13**	**0**	**104**	**0**	**0**	**246**	**33**	**0**	**59**	**76**	**0**	**532**	2,179
5:15 PM	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**124**	**0**	**0**	**236**	**35**	**0**	**60**	**110**	**0**	**583**	2,217
5:30 PM	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**109**	**0**	**0**	**216**	**29**	**0**	**71**	**117**	**0**	**560**	**2,227**
5:45 PM	0	0	0	0	0	19	0	121	0	0	225	35	0	54	83	0	537	2,212
6:00 PM	0	0	0	0	0	19	0	95	0	0	212	34	0	67	80	0	507	2,187
6:15 PM	0	0	0	0	0	17	0	87	0	0	238	29	0	51	93	0	515	2,119
6:30 PM	0	0	0	0	0	15	0	97	0	0	246	36	0	53	66	0	513	2,072
6:45 PM	0	0	0	0	0	13	0	73	0	0	235	39	0	34	72	0	466	2,001
Count Total	0	0	0	0	7	200	0	1,154	0	0	2,798	430	0	699	1,087	0	6,375	0
Peak Hour All	**0**	**0**	**0**	**0**	**7**	**59**	**0**	**432**	**0**	**0**	**936**	**131**	**0**	**259**	**403**	**0**	**2,227**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**4**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**0%**	**0%**	**-**	**0%**	**-**	**-**	**0%**	**0%**	**-**	**1%**	**0%**	**-**	**0%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	1	1	*3*	0	0	0	0	*0*	0	0	1	0	*1*
4:15 PM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	3	0	*3*
4:30 PM	0	0	2	2	*4*	0	0	1	0	*1*	0	0	5	0	*5*
4:45 PM	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**6**	**0**	*8*
5:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	*3*
5:30 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	***3***
5:45 PM	0	0	0	0	*0*	0	1	0	0	*1*	3	0	5	0	*8*
6:00 PM	0	0	0	0	*0*	0	0	1	0	*1*	0	0	4	0	*4*
6:15 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	4	0	*4*
6:30 PM	0	0	0	0	*0*	0	0	0	1	*1*	0	0	0	0	*0*
6:45 PM	0	0	0	0	*0*	0	0	1	0	*1*	2	0	6	0	*8*
Count Total	0	3	5	7	*15*	0	1	3	1	*5*	7	0	41	0	*48*
Peak Hr	**0**	**2**	**0**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**13**	**0**	***15***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	n/a				San Bruno Ave W				Skyline Blvd				Skyline Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	12
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	10
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	7
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**4**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	3	0	0	5	0	0	3	4	0	15	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**4**	**0**

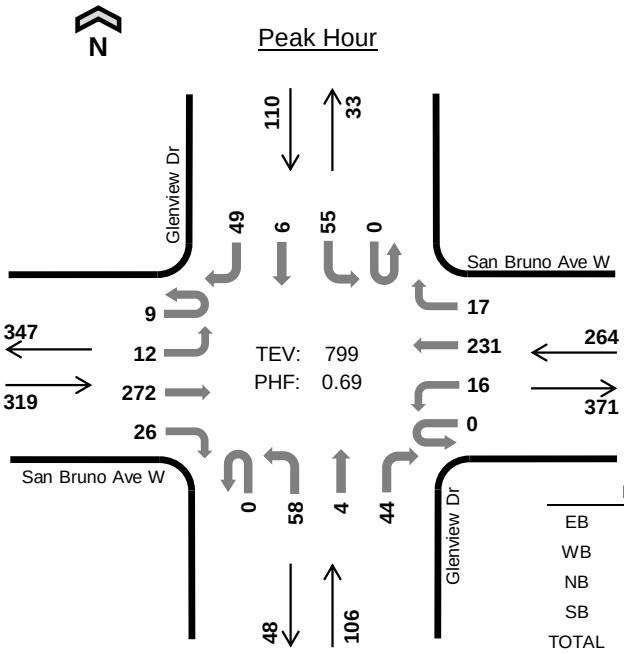
Three-Hour Count Summaries - Bikes

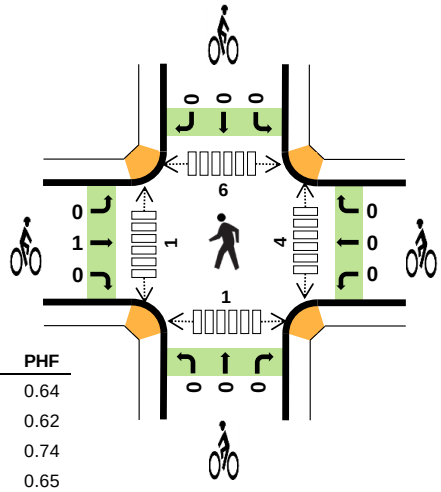
Interval Start	n/a			San Bruno Ave W			Skyline Blvd			Skyline Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	1
6:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	2
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	3
6:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	3
Count Total	0	0	0	0	0	1	0	2	1	1	0	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Glenview Dr
San Bruno Ave W

Date: 05-14-2019
Count Period: 6:00 AM to 8:00 AM
Peak Hour: 7:00 AM to 8:00 AM





	HV %:	PHF
EB	1.9%	0.64
WB	0.4%	0.62
NB	1.9%	0.74
SB	0.9%	0.65
TOTAL	1.3%	0.69

Two-Hour Count Summaries

Interval Start		San Bruno Ave W Eastbound				San Bruno Ave W Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM		0	0	23	4	0	1	18	0	0	7	0	9	0	3	0	3	68	0
6:15 AM		3	0	18	0	0	5	23	0	0	10	1	5	0	2	0	3	70	0
6:30 AM		1	0	28	1	0	5	21	0	0	17	2	7	0	5	0	7	94	0
6:45 AM		4	0	47	8	0	5	32	2	0	12	1	13	0	7	1	7	139	371
7:00 AM		**5**	**4**	**30**	**6**	**0**	**5**	**39**	**0**	**0**	**13**	**1**	**8**	**0**	**5**	**1**	**8**	**125**	428
7:15 AM		**0**	**2**	**42**	**6**	**0**	**3**	**49**	**2**	**0**	**11**	**1**	**9**	**0**	**9**	**1**	**11**	**146**	504
7:30 AM		**2**	**2**	**87**	**8**	**0**	**2**	**53**	**5**	**0**	**19**	**1**	**16**	**0**	**27**	**2**	**13**	**237**	647
7:45 AM		**2**	**4**	**113**	**6**	**0**	**6**	**90**	**10**	**0**	**15**	**1**	**11**	**0**	**14**	**2**	**17**	**291**	**799**
Count Total		17	12	388	39	0	32	325	19	0	104	8	78	0	72	7	69	1,170	0
Peak Hour	**All**	**9**	**12**	**272**	**26**	**0**	**16**	**231**	**17**	**0**	**58**	**4**	**44**	**0**	**55**	**6**	**49**	**799**	**0**
	HV	**0**	**1**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**10**	**0**
	HV%	**0%**	**8%**	**2%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**3%**	**0%**	**0%**	**-**	**2%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
6:00 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 AM	1	1	1	0	*3*	1	0	0	0	*1*	0	1	0	0	*1*
6:30 AM	1	1	1	0	*3*	1	0	0	0	*1*	0	0	0	0	*0*
6:45 AM	0	0	0	1	*1*	0	0	1	0	*1*	4	1	3	0	*8*
7:00 AM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
7:15 AM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
7:30 AM	**2**	**0**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**1**	*3*
7:45 AM	**2**	**1**	**1**	**0**	***4***	**1**	**0**	**0**	**0**	***1***	**3**	**0**	**4**	**0**	***7***
Count Total	9	3	4	2	*18*	3	0	1	0	*4*	8	3	9	1	*21*
Peak Hour	**6**	**1**	**2**	**1**	***10***	**1**	**0**	**0**	**0**	***1***	**4**	**1**	**6**	**1**	***12***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	San Bruno Ave W				San Bruno Ave W				Glenview Dr				Glenview Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
6:15 AM	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	3	0
6:30 AM	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	3	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	8
7:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	8
7:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	7
7:30 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	7
7:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**10**
Count Total	0	1	7	1	0	2	1	0	0	4	0	0	0	2	0	0	18	0
Peak Hour	**0**	**1**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**10**	**0**

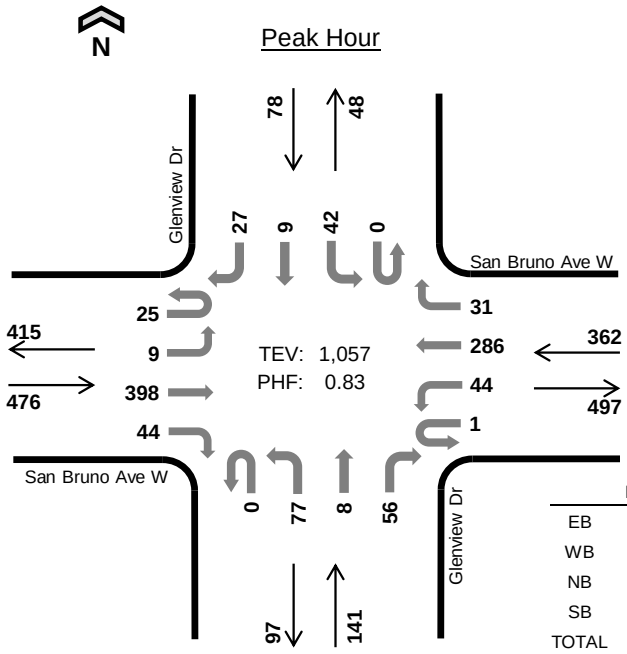
Two-Hour Count Summaries - Bikes

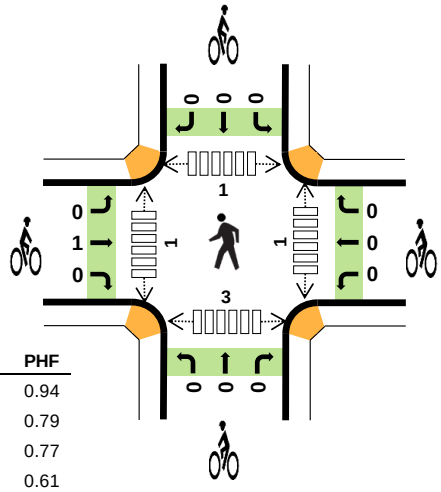
Interval Start	San Bruno Ave W			San Bruno Ave W			Glenview Dr			Glenview Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
6:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	3
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
Count Total	0	3	0	0	0	0	0	0	1	0	0	0	4	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Glenview Dr
San Bruno Ave W

Date: 05-14-2019
Count Period: 8:00 AM to 10:00 AM
Peak Hour: 8:00 AM to 9:00 AM





	HV %:	PHF
EB	2.1%	0.94
WB	1.7%	0.79
NB	0.7%	0.77
SB	1.3%	0.61
TOTAL	1.7%	0.83

Two-Hour Count Summaries

Interval Start		San Bruno Ave W Eastbound				San Bruno Ave W Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		**2**	**2**	**112**	**11**	**0**	**14**	**91**	**10**	**0**	**26**	**3**	**17**	**0**	**21**	**4**	**7**	**320**	0
8:15 AM		**7**	**3**	**97**	**11**	**0**	**11**	**73**	**13**	**0**	**19**	**0**	**14**	**0**	**11**	**1**	**4**	**264**	0
8:30 AM		**7**	**1**	**101**	**8**	**0**	**11**	**52**	**8**	**0**	**18**	**4**	**12**	**0**	**8**	**4**	**8**	**242**	0
8:45 AM		**9**	**3**	**88**	**14**	**1**	**8**	**70**	**0**	**0**	**14**	**1**	**13**	**0**	**2**	**0**	**8**	**231**	**1,057**
9:00 AM		7	1	62	15	0	11	60	3	0	25	2	7	1	4	2	3	203	940
9:15 AM		7	2	67	9	0	13	60	6	0	17	2	8	0	3	2	7	203	879
9:30 AM		3	6	60	9	0	5	49	3	0	17	1	10	0	9	0	4	176	813
9:45 AM		5	0	45	8	0	12	44	4	0	9	2	11	0	2	2	4	148	730
Count Total		47	18	632	85	1	85	499	47	0	145	15	92	1	60	15	45	1,787	0
Peak Hour	**All**	**25**	**9**	**398**	**44**	**1**	**44**	**286**	**31**	**0**	**77**	**8**	**56**	**0**	**42**	**9**	**27**	**1,057**	**0**
	HV	**0**	**1**	**9**	**0**	**0**	**1**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**18**	**0**
	HV%	**0%**	**11%**	**2%**	**0%**	**0%**	**2%**	**2%**	**0%**	**-**	**1%**	**0%**	**0%**	**-**	**0%**	**11%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
8:00 AM	**1**	**2**	**0**	**0**	***3***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**1**	**1**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**4**	**2**	**0**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	*2*
8:45 AM	**4**	**1**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**2**	***4***
9:00 AM	2	1	0	1	*4*	1	1	0	0	*2*	0	0	0	0	*0*
9:15 AM	2	0	0	0	*2*	0	1	0	0	*1*	1	0	1	0	*2*
9:30 AM	0	0	1	1	*2*	0	1	0	0	*1*	0	1	0	0	*1*
9:45 AM	0	1	0	0	*1*	0	0	0	0	*0*	2	0	2	0	*4*
Count Total	14	8	2	3	*27*	2	3	0	0	*5*	4	2	4	3	*13*
Peak Hour	**10**	**6**	**1**	**1**	***18***	**1**	**0**	**0**	**0**	***1***	**1**	**1**	**1**	**3**	***6***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	San Bruno Ave W				San Bruno Ave W				Glenview Dr				Glenview Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
8:30 AM	**0**	**0**	**4**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**7**	0
8:45 AM	**0**	**1**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**18**
9:00 AM	0	0	2	0	0	0	1	0	0	0	0	0	1	0	0	0	4	19
9:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18
9:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	13
9:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	9
Count Total	0	1	13	0	0	1	7	0	0	2	0	0	1	1	1	0	27	0
Peak Hour	**0**	**1**	**9**	**0**	**0**	**1**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**18**	**0**

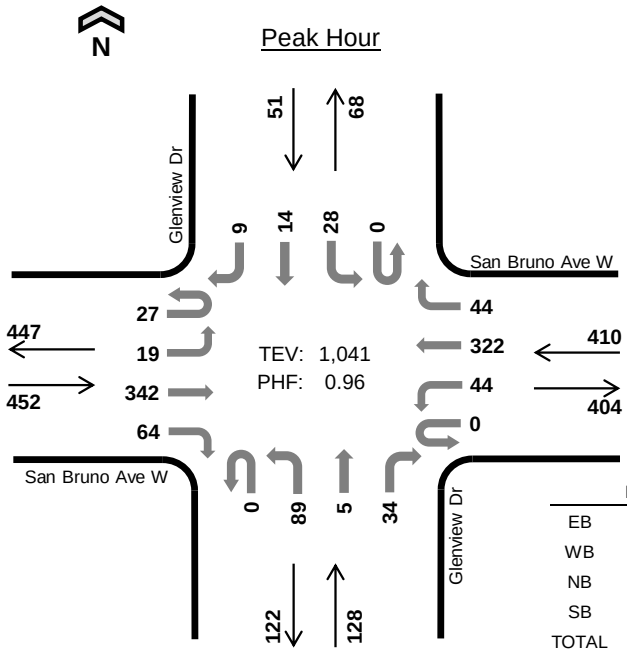
Two-Hour Count Summaries - Bikes

Interval Start	San Bruno Ave W			San Bruno Ave W			Glenview Dr			Glenview Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
9:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	2
9:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	3
9:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	4
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	2	0	0	3	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

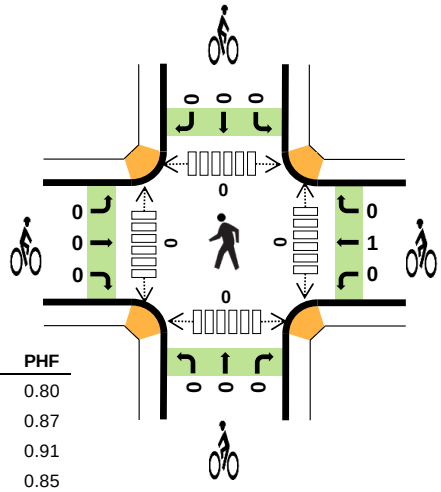
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Glenview Dr
San Bruno Ave W

Date: 05-14-2019
Count Period: 2:00 PM to 4:00 PM
Peak Hour: 2:45 PM to 3:45 PM



	HV %:	PHF
EB	0.9%	0.80
WB	0.5%	0.87
NB	0.0%	0.91
SB	2.0%	0.85
TOTAL	0.7%	0.96



Two-Hour Count Summaries

Interval Start		San Bruno Ave W Eastbound				San Bruno Ave W Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM		9	2	61	17	0	11	58	4	0	19	1	17	0	3	1	5	208	0
2:15 PM		4	2	78	18	1	9	40	10	0	23	2	4	0	5	1	1	198	0
2:30 PM		9	1	66	15	0	6	51	7	0	15	2	10	0	5	1	4	192	0
2:45 PM		**8**	**5**	**113**	**16**	**0**	**11**	**65**	**7**	**0**	**21**	**0**	**11**	**0**	**8**	**2**	**4**	**271**	869
3:00 PM		**4**	**8**	**80**	**14**	**0**	**7**	**84**	**11**	**0**	**24**	**2**	**7**	**0**	**10**	**4**	**1**	**256**	917
3:15 PM		**7**	**4**	**69**	**22**	**0**	**13**	**77**	**17**	**0**	**19**	**1**	**8**	**0**	**5**	**5**	**2**	**249**	968
3:30 PM		**8**	**2**	**80**	**12**	**0**	**13**	**96**	**9**	**0**	**25**	**2**	**8**	**0**	**5**	**3**	**2**	**265**	**1,041**
3:45 PM		8	6	77	24	0	7	57	15	0	24	5	8	0	6	2	4	243	1,013
Count Total		57	30	624	138	1	77	528	80	0	170	15	73	0	47	19	23	1,882	0
Peak Hour	**All**	**27**	**19**	**342**	**64**	**0**	**44**	**322**	**44**	**0**	**89**	**5**	**34**	**0**	**28**	**14**	**9**	**1,041**	**0**
	HV	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**
	HV%	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**5%**	**-**	**0%**	**0%**	**0%**	**-**	**4%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
2:15 PM	3	0	0	0	*3*	0	1	0	0	*1*	1	0	1	0	*2*
2:30 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
2:45 PM	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
3:00 PM	**1**	**1**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
3:15 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
3:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
3:45 PM	0	1	1	0	*2*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	8	4	1	1	*14*	1	2	0	0	*3*	1	0	2	0	*3*
Peak Hour	**4**	**2**	**0**	**1**	***7***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	San Bruno Ave W				San Bruno Ave W				Glenview Dr				Glenview Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
2:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
2:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
3:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	9
3:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	8
3:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**
3:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	8
Count Total	0	0	8	0	0	0	2	2	0	1	0	0	0	1	0	0	14	0
Peak Hour	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**

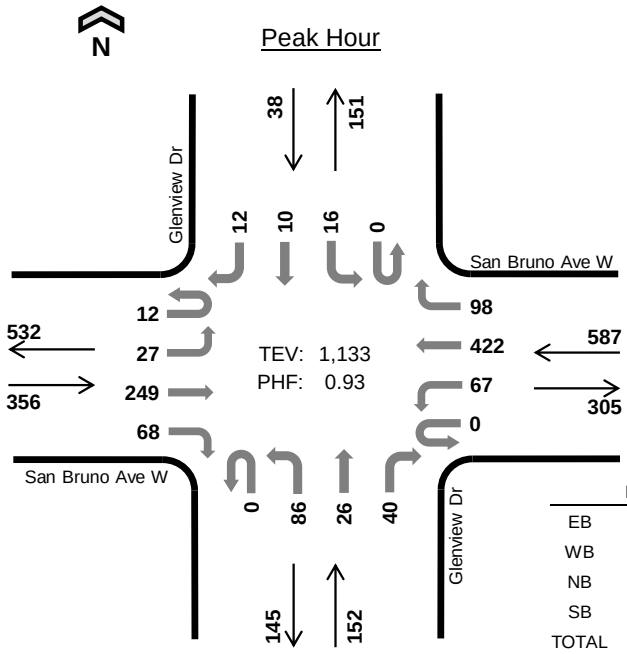
Two-Hour Count Summaries - Bikes

Interval Start	San Bruno Ave W			San Bruno Ave W			Glenview Dr			Glenview Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
3:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
3:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
3:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
3:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Count Total	1	0	0	0	2	0	0	0	0	0	0	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

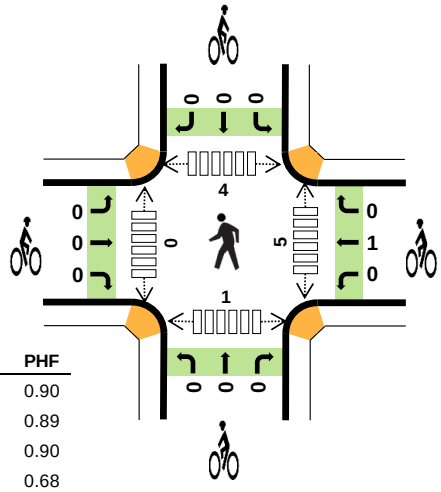
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Glenview Dr
San Bruno Ave W

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.3%	0.90
WB	0.3%	0.89
NB	0.0%	0.90
SB	2.6%	0.68
TOTAL	0.4%	0.93



Three-Hour Count Summaries

Interval Start		San Bruno Ave W Eastbound				San Bruno Ave W Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:00 PM		4	5	59	20	0	16	104	18	0	17	5	11	0	1	0	4	264	0
5:15 PM		3	6	54	23	0	18	98	21	0	27	9	6	0	5	5	4	279	0
5:30 PM		2	6	74	17	0	13	105	29	0	24	3	9	0	4	1	0	287	0
5:45 PM		3	10	62	8	0	20	115	30	0	18	9	14	0	6	4	4	303	1,133
Peak Hour	All	12	27	249	68	0	67	422	98	0	86	26	40	0	16	10	12	1,133	0
	HV	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	1	4	0
	HV%	0%	0%	0%	0%	-	3%	0%	0%	-	0%	0%	0%	-	0%	0%	8%	0%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:00 PM	0	0	0	1	*1*	0	0	0	0	*0*	2	0	2	0	*4*
5:15 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	1	0	0	0	*1*	0	0	0	0	*0*	2	0	2	0	*4*
5:45 PM	0	1	0	0	*1*	0	1	0	0	*1*	1	0	0	1	*2*
Peak Hour	1	2	0	1	*4*	0	1	0	0	*1*	5	0	4	1	*10*

Three-Hour Count Summaries

Interval Start	San Bruno Ave W Eastbound				San Bruno Ave W Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	7	7	65	23	0	13	59	13	0	24	3	12	0	3	4	0	233	0
4:15 PM	6	7	69	13	0	12	65	11	0	31	7	6	0	4	2	1	234	0
4:30 PM	6	8	61	23	0	9	83	15	0	20	0	8	0	1	3	2	239	0
4:45 PM	8	3	69	22	0	15	86	13	0	16	3	12	0	5	3	4	259	965
5:00 PM	**4**	**5**	**59**	**20**	**0**	**16**	**104**	**18**	**0**	**17**	**5**	**11**	**0**	**1**	**0**	**4**	**264**	996
5:15 PM	**3**	**6**	**54**	**23**	**0**	**18**	**98**	**21**	**0**	**27**	**9**	**6**	**0**	**5**	**5**	**4**	**279**	1,041
5:30 PM	**2**	**6**	**74**	**17**	**0**	**13**	**105**	**29**	**0**	**24**	**3**	**9**	**0**	**4**	**1**	**0**	**287**	1,089
5:45 PM	**3**	**10**	**62**	**8**	**0**	**20**	**115**	**30**	**0**	**18**	**9**	**14**	**0**	**6**	**4**	**4**	**303**	**1,133**
6:00 PM	5	6	67	12	0	23	76	23	0	17	8	7	0	3	5	4	256	1,125
6:15 PM	3	7	56	16	0	13	82	15	0	14	5	8	0	4	5	8	236	1,082
6:30 PM	4	5	61	11	0	20	79	12	0	26	1	6	0	1	2	2	230	1,025
6:45 PM	8	4	58	9	0	17	56	14	0	16	4	8	0	6	2	4	206	928
Count Total	59	74	755	197	0	189	1,008	214	0	250	57	107	0	43	36	37	3,026	0
Peak Hour All	**12**	**27**	**249**	**68**	**0**	**67**	**422**	**98**	**0**	**86**	**26**	**40**	**0**	**16**	**10**	**12**	**1,133**	**0**
Peak Hour HV	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**
Peak Hour HV%	**0%**	**0%**	**0%**	**0%**	**-**	**3%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**8%**	**0%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	0	0	*1*	0	1	0	0	*1*	0	0	0	0	*0*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	3	0	*4*
4:30 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
4:45 PM	1	1	0	0	*2*	0	1	0	0	*1*	0	0	1	0	*1*
5:00 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**2**	**0**	*4*
5:15 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**2**	**0**	*4*
5:45 PM	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**1**	***2***
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	2	0	2	0	*4*
6:15 PM	1	0	0	0	*1*	1	0	0	0	*1*	2	0	2	0	*4*
6:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	1	2	*4*
6:45 PM	0	2	0	0	*2*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	3	6	1	1	*11*	2	3	0	0	*5*	11	0	14	3	*28*
Peak Hour	**1**	**2**	**0**	**1**	***4***	**0**	**1**	**0**	**0**	***1***	**5**	**0**	**4**	**1**	***10***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	San Bruno Ave W				San Bruno Ave W				Glenview Dr				Glenview Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	4
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:45 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	3
Count Total	0	0	3	0	0	2	2	2	0	0	0	1	0	0	0	1	11	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	San Bruno Ave W			San Bruno Ave W			Glenview Dr			Glenview Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	2
Count Total	0	2	0	0	3	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

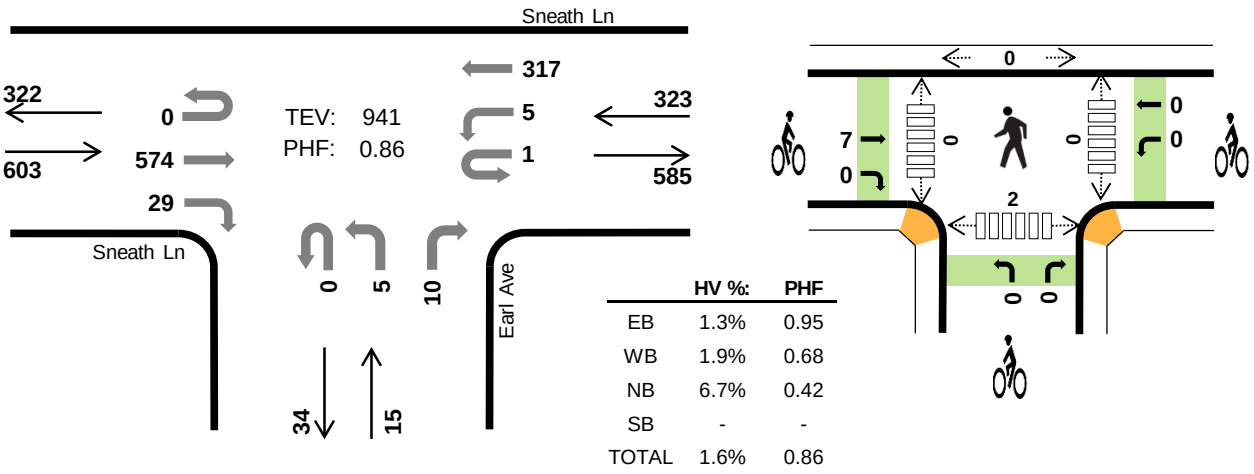
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Earl Ave
Sneath Ln

N

Peak Hour

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



Two-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Earl Ave Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	91	0	0	0	28	0	0	1	0	2	0	0	0	0	122	0
7:15 AM		0	0	121	6	0	0	34	0	0	1	0	0	0	0	0	0	162	0
7:30 AM		**0**	**0**	**144**	**10**	**0**	**0**	**45**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**200**	0
7:45 AM		**0**	**0**	**138**	**7**	**1**	**3**	**95**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**246**	730
8:00 AM		**0**	**0**	**136**	**9**	**0**	**1**	**118**	**0**	**0**	**4**	**0**	**5**	**0**	**0**	**0**	**0**	**273**	881
8:15 AM		**0**	**0**	**156**	**3**	**0**	**1**	**59**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**222**	**941**
8:30 AM		0	0	132	3	0	1	51	0	0	0	0	3	0	0	0	0	190	931
8:45 AM		0	0	138	1	0	5	61	0	0	2	0	3	0	0	0	0	210	895
Count Total		0	0	1,056	39	1	11	491	0	0	9	0	18	0	0	0	0	1,625	0
Peak Hour	**All**	**0**	**0**	**574**	**29**	**1**	**5**	**317**	**0**	**0**	**5**	**0**	**10**	**0**	**0**	**0**	**0**	**941**	**0**
	HV	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**
	HV%	**-**	**-**	**1%**	**0%**	**0%**	**0%**	**2%**	**-**	**-**	**20%**	**-**	**0%**	**-**	**-**	**-**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	2	2	0	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
8:00 AM	**2**	**1**	**0**	**0**	***3***	**4**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**1**	*1*
8:15 AM	**2**	**2**	**1**	**0**	***5***	**3**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***
8:30 AM	3	2	0	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	4	2	0	0	*6*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	17	14	1	0	*32*	8	0	0	0	*8*	0	0	0	2	*2*
Peak Hr	**8**	**6**	**1**	**0**	***15***	**7**	**0**	**0**	**0**	***7***	**0**	**0**	**0**	**2**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln				Sneath Ln				Earl Ave				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
7:30 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
7:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	13
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	14
8:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**15**
8:30 AM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	17
8:45 AM	0	0	4	0	0	1	1	0	0	0	0	0	0	0	0	0	6	19
Count Total	0	0	17	0	0	1	13	0	0	1	0	0	0	0	0	0	32	0
Peak Hour	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Sneath Ln			Sneath Ln			Earl Ave			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	4
8:15 AM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**7**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	8
Count Total	0	8	0	0	0	0	0	0	0	0	0	0	8	0
Peak Hour	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**

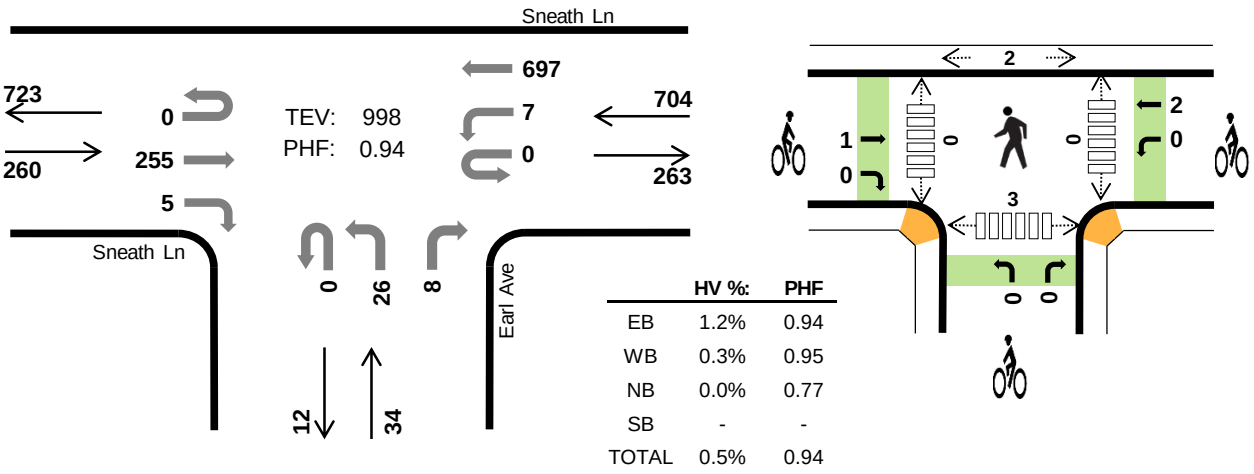
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Earl Ave
Sneath Ln

N

Peak Hour

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:15 PM to 6:15 PM



	HV %:	PHF
EB	1.2%	0.94
WB	0.3%	0.95
NB	0.0%	0.77
SB	-	-
TOTAL	0.5%	0.94

Three-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Earl Ave Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:15 PM		0	0	56	0	0	0	179	0	0	3	0	1	0	0	0	0	239	0
5:30 PM		0	0	67	2	0	3	182	0	0	8	0	3	0	0	0	0	265	0
5:45 PM		0	0	65	2	0	2	173	0	0	7	0	2	0	0	0	0	251	0
6:00 PM		0	0	67	1	0	2	163	0	0	8	0	2	0	0	0	0	243	998
Peak Hour	All	0	0	255	5	0	7	697	0	0	26	0	8	0	0	0	0	998	0
	HV	0	0	2	1	0	0	2	0	0	0	0	0	0	0	0	0	5	0
	HV%	-	-	1%	20%	-	0%	0%	-	-	0%	-	0%	-	-	-	-	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:15 PM	1	0	0	0	*1*	1	1	0	0	*2*	0	0	1	2	*3*
5:30 PM	1	1	0	0	*2*	0	1	0	0	*1*	0	0	1	0	*1*
5:45 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	1	*1*
Peak Hour	3	2	0	0	*5*	1	2	0	0	*3*	0	0	2	3	*5*

Three-Hour Count Summaries

Interval Start	Sneath Ln Eastbound				Sneath Ln Westbound				Earl Ave Northbound				n/a Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	78	1	0	2	115	0	0	2	0	1	0	0	0	0	199	0
4:15 PM	0	0	61	2	0	6	112	0	0	1	0	2	0	0	0	0	184	0
4:30 PM	0	0	60	0	0	1	112	0	0	2	0	2	0	0	0	0	177	0
4:45 PM	0	0	59	0	0	3	144	0	0	1	0	5	0	0	0	0	212	772
5:00 PM	0	0	60	2	0	1	166	0	0	8	0	1	0	0	0	0	238	811
5:15 PM	**0**	**0**	**56**	**0**	**0**	**0**	**179**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**239**	866
5:30 PM	**0**	**0**	**67**	**2**	**0**	**3**	**182**	**0**	**0**	**8**	**0**	**3**	**0**	**0**	**0**	**0**	**265**	954
5:45 PM	**0**	**0**	**65**	**2**	**0**	**2**	**173**	**0**	**0**	**7**	**0**	**2**	**0**	**0**	**0**	**0**	**251**	993
6:00 PM	**0**	**0**	**67**	**1**	**0**	**2**	**163**	**0**	**0**	**8**	**0**	**2**	**0**	**0**	**0**	**0**	**243**	**998**
6:15 PM	0	0	42	1	0	4	133	0	0	7	0	0	0	0	0	0	187	946
6:30 PM	0	0	49	4	0	2	130	0	0	7	0	1	0	0	0	0	193	874
6:45 PM	0	0	47	0	0	1	114	0	0	0	0	3	0	0	0	0	165	788
Count Total	0	0	711	15	0	27	1,723	0	0	54	0	23	0	0	0	0	2,553	0
Peak Hour All	**0**	**0**	**255**	**5**	**0**	**7**	**697**	**0**	**0**	**26**	**0**	**8**	**0**	**0**	**0**	**0**	**998**	**0**
Peak Hour HV	**0**	**0**	**2**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**20%**	**-**	**0%**	**0%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	0	*1*	1	0	0	0	*1*	0	0	0	0	*0*
4:15 PM	2	2	0	0	*4*	0	1	0	0	*1*	0	0	0	0	*0*
4:30 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	2	*2*
4:45 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	**1**	**0**	**0**	**0**	***1***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**1**	**2**	*3*
5:30 PM	**1**	**1**	**0**	**0**	***2***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**1**	**0**	*1*
5:45 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
6:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***
6:15 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
6:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	2	*2*
6:45 PM	1	2	0	0	*3*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	10	9	1	0	*20*	3	3	0	0	*6*	0	0	2	7	*9*
Peak Hr	**3**	**2**	**0**	**0**	***5***	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**2**	**3**	***5***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln				Sneath Ln				Earl Ave				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	8
5:00 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	9
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
5:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	7
5:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**
6:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	6
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:45 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	6
Count Total	0	0	9	1	0	0	9	0	0	1	0	0	0	0	0	0	20	0
Peak Hour	**0**	**0**	**2**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	Sneath Ln			Sneath Ln			Earl Ave			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	2
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Count Total	0	3	0	0	3	0	0	0	0	0	0	0	6	0
Peak Hour	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

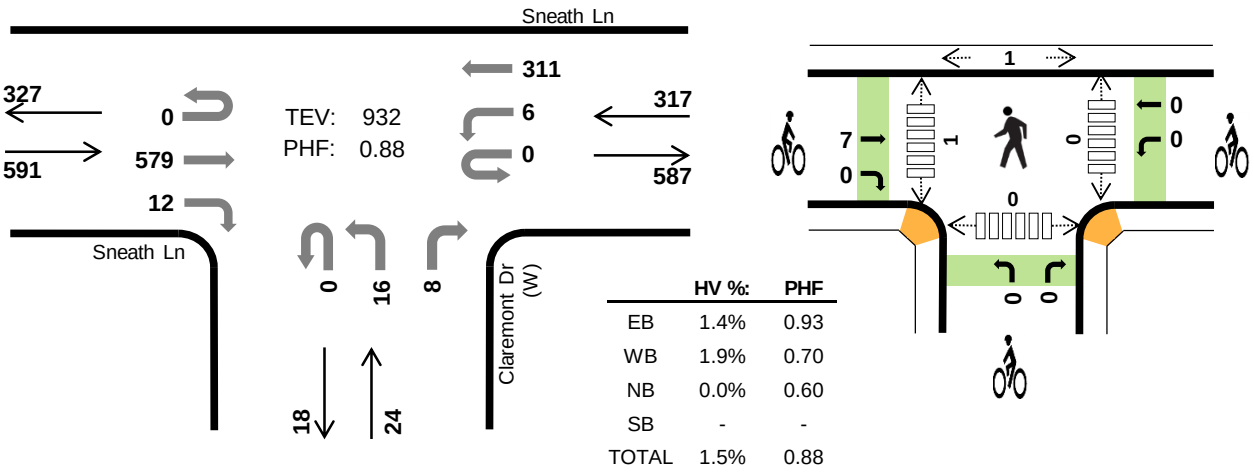
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Claremont Dr (W)
Sneath Ln

N

Peak Hour

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	1.4%	0.93
WB	1.9%	0.70
NB	0.0%	0.60
SB	-	-
TOTAL	1.5%	0.88

Two-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Claremont Dr (W) Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	90	3	0	2	24	0	0	3	0	2	0	0	0	0	124	0
7:15 AM		0	0	121	1	0	0	33	0	0	1	0	3	0	0	0	0	159	0
7:30 AM		**0**	**0**	**143**	**3**	**0**	**4**	**42**	**0**	**0**	**3**	**0**	**2**	**0**	**0**	**0**	**0**	**197**	0
7:45 AM		**0**	**0**	**141**	**2**	**0**	**1**	**96**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**247**	727
8:00 AM		**0**	**0**	**140**	**3**	**0**	**1**	**112**	**0**	**0**	**6**	**0**	**4**	**0**	**0**	**0**	**0**	**266**	869
8:15 AM		**0**	**0**	**155**	**4**	**0**	**0**	**61**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**222**	**932**
8:30 AM		0	0	133	3	0	1	48	0	0	2	0	0	0	0	0	0	187	922
8:45 AM		0	0	142	0	0	1	63	0	0	3	0	1	0	0	0	0	210	885
Count Total		0	0	1,065	19	0	10	479	0	0	25	0	14	0	0	0	0	1,612	0
Peak Hour	**All**	**0**	**0**	**579**	**12**	**0**	**6**	**311**	**0**	**0**	**16**	**0**	**8**	**0**	**0**	**0**	**0**	**932**	**0**
	HV	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**
	HV%	**-**	**-**	**1%**	**0%**	**-**	**0%**	**2%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	2	2	1	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**0**	*2*
7:45 AM	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**2**	**1**	**0**	**0**	***3***	**4**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**2**	**2**	**0**	**0**	***4***	**3**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***
8:30 AM	3	2	0	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	4	2	0	0	*6*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	17	14	1	0	*32*	8	0	0	0	*8*	0	1	1	0	*2*
Peak Hr	**8**	**6**	**0**	**0**	***14***	**7**	**0**	**0**	**0**	***7***	**0**	**1**	**1**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln				Sneath Ln				Claremont Dr (W)				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	2	0	0	0	2	0	0	0	0	1	0	0	0	0	5	0
7:30 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
7:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	14
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	15
8:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**14**
8:30 AM	0	0	1	2	0	0	2	0	0	0	0	0	0	0	0	0	5	16
8:45 AM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6	18
Count Total	0	0	15	2	0	0	14	0	0	0	0	1	0	0	0	0	32	0
Peak Hour	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Sneath Ln			Sneath Ln			Claremont Dr (W)			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	4
8:15 AM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**7**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	8
Count Total	0	8	0	0	0	0	0	0	0	0	0	0	8	0
Peak Hour	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**

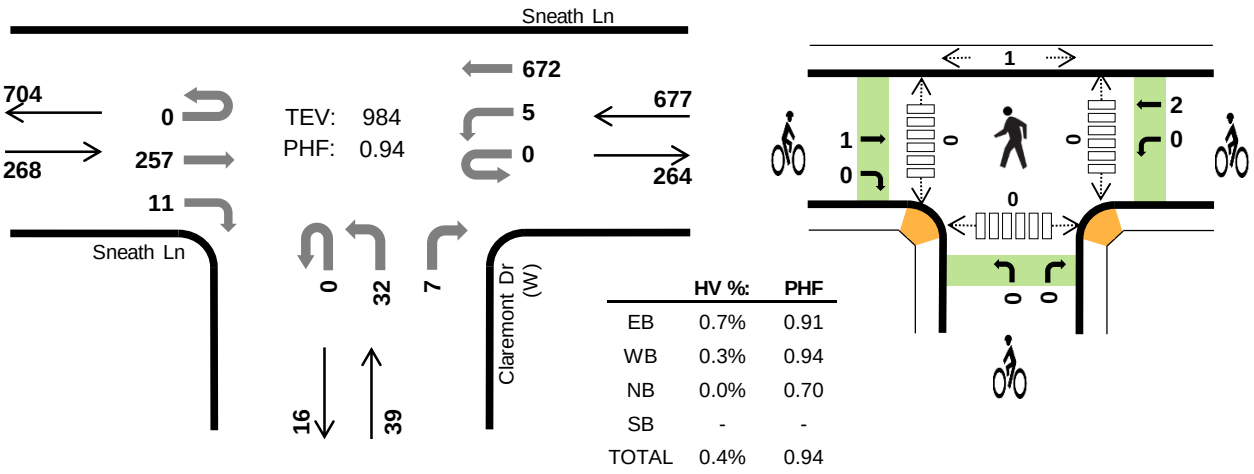
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Claremont Dr (W)
Sneath Ln

N

Peak Hour

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:15 PM to 6:15 PM



	HV %:	PHF
EB	0.7%	0.91
WB	0.3%	0.94
NB	0.0%	0.70
SB	-	-
TOTAL	0.4%	0.94

Three-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Claremont Dr (W) Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:15 PM		0	0	55	1	0	1	167	0	0	13	0	1	0	0	0	0	238	0
5:30 PM		0	0	71	3	0	2	179	0	0	5	0	1	0	0	0	0	261	0
5:45 PM		0	0	66	3	0	0	170	0	0	8	0	2	0	0	0	0	249	0
6:00 PM		0	0	65	4	0	2	156	0	0	6	0	3	0	0	0	0	236	984
Peak Hour	All	0	0	257	11	0	5	672	0	0	32	0	7	0	0	0	0	984	0
	HV	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
	HV%	-	-	1%	0%	-	0%	0%	-	-	0%	-	0%	-	-	-	-	0%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:15 PM	1	1	0	0	*2*	1	1	0	0	*2*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	1	0	0	*1*	0	0	0	0	*0*
5:45 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
Peak Hour	2	2	0	0	*4*	1	2	0	0	*3*	0	0	1	0	*1*

Three-Hour Count Summaries

Interval Start	Sneath Ln Eastbound				Sneath Ln Westbound				Claremont Dr (W) Northbound				n/a Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	75	4	0	0	117	0	0	2	0	6	0	0	0	0	204	0
4:15 PM	0	0	62	2	0	2	117	0	0	3	0	0	0	0	0	0	186	0
4:30 PM	0	0	59	2	0	1	113	0	0	4	0	1	0	0	0	0	180	0
4:45 PM	0	0	61	5	0	2	143	0	0	3	0	1	0	0	0	0	215	785
5:00 PM	0	0	59	2	0	1	166	0	0	3	0	2	0	0	0	0	233	814
5:15 PM	**0**	**0**	**55**	**1**	**0**	**1**	**167**	**0**	**0**	**13**	**0**	**1**	**0**	**0**	**0**	**0**	**238**	866
5:30 PM	**0**	**0**	**71**	**3**	**0**	**2**	**179**	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**0**	**0**	**261**	947
5:45 PM	**0**	**0**	**66**	**3**	**0**	**0**	**170**	**0**	**0**	**8**	**0**	**2**	**0**	**0**	**0**	**0**	**249**	981
6:00 PM	**0**	**0**	**65**	**4**	**0**	**2**	**156**	**0**	**0**	**6**	**0**	**3**	**0**	**0**	**0**	**0**	**236**	**984**
6:15 PM	0	0	41	2	0	2	131	0	0	4	0	0	0	0	0	0	180	926
6:30 PM	0	0	49	3	0	1	129	0	0	7	0	1	0	0	0	0	190	855
6:45 PM	0	0	45	4	0	0	114	0	0	3	0	2	0	0	0	0	168	774
Count Total	0	0	708	35	0	14	1,702	0	0	61	0	20	0	0	0	0	2,540	0
Peak Hour All	**0**	**0**	**257**	**11**	**0**	**5**	**672**	**0**	**0**	**32**	**0**	**7**	**0**	**0**	**0**	**0**	**984**	**0**
Peak Hour HV	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**0%**	**-**	**0%**	**0%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**0%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	0	*1*	1	0	0	0	*1*	0	0	0	0	*0*
4:15 PM	2	2	0	0	*4*	0	1	0	0	*1*	0	0	0	0	*0*
4:30 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	1	1	0	*2*
5:00 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	**1**	**1**	**0**	**0**	***2***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:45 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
6:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***
6:15 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
6:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	2	0	*4*
6:45 PM	1	2	0	0	*3*	1	0	0	0	*1*	0	1	0	0	*1*
Count Total	9	9	0	0	*18*	3	3	0	0	*6*	0	4	4	0	*8*
Peak Hr	**2**	**2**	**0**	**0**	***4***	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**1**	**0**	***1***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln				Sneath Ln				Claremont Dr (W)				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	8
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	6
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
5:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
6:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	4
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:45 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	6
Count Total	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	18	0
Peak Hour	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	Sneath Ln			Sneath Ln			Claremont Dr (W)			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	2
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Count Total	0	3	0	0	3	0	0	0	0	0	0	0	6	0
Peak Hour	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

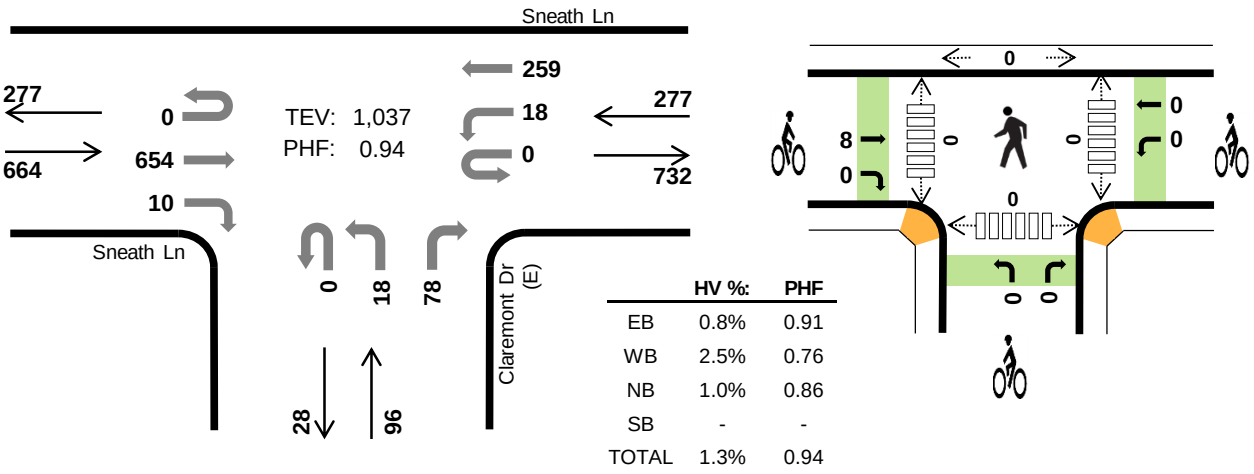
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Claremont Dr (E)
Sneath Ln

N

Peak Hour

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



Two-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Claremont Dr (E) Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	101	0	0	5	18	0	0	1	0	9	0	0	0	0	134	0
7:15 AM		0	0	157	0	0	5	33	0	0	2	0	18	0	0	0	0	215	0
7:30 AM		**0**	**0**	**172**	**1**	**0**	**5**	**39**	**0**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**239**	0
7:45 AM		**0**	**0**	**141**	**2**	**0**	**3**	**86**	**0**	**0**	**8**	**0**	**18**	**0**	**0**	**0**	**0**	**258**	846
8:00 AM		**0**	**0**	**160**	**6**	**0**	**8**	**83**	**0**	**0**	**7**	**0**	**13**	**0**	**0**	**0**	**0**	**277**	989
8:15 AM		**0**	**0**	**181**	**1**	**0**	**2**	**51**	**0**	**0**	**3**	**0**	**25**	**0**	**0**	**0**	**0**	**263**	**1,037**
8:30 AM		0	0	163	1	0	10	37	0	0	2	0	26	0	0	0	0	239	1,037
8:45 AM		0	0	146	1	0	6	49	0	0	0	0	8	0	0	0	0	210	989
Count Total		0	0	1,221	12	0	44	396	0	0	23	0	139	0	0	0	0	1,835	0
Peak Hour	**All**	**0**	**0**	**654**	**10**	**0**	**18**	**259**	**0**	**0**	**18**	**0**	**78**	**0**	**0**	**0**	**0**	**1,037**	**0**
	HV	**0**	**0**	**5**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**13**	**0**
	HV%	**-**	**-**	**1%**	**0%**	**-**	**6%**	**2%**	**-**	**-**	**0%**	**-**	**1%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	3	1	0	0	*4*	1	0	0	0	*1*	0	0	0	0	*0*
7:30 AM	**1**	**1**	**0**	**0**	***2***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**2**	**2**	**0**	**0**	***4***	**4**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**3**	**1**	**0**	***5***	**3**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***
8:30 AM	4	1	1	0	*6*	0	0	0	0	*0*	0	0	0	1	*1*
8:45 AM	4	1	0	0	*5*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	16	12	2	0	*30*	10	0	0	0	*10*	0	0	0	1	*1*
Peak Hr	**5**	**7**	**1**	**0**	***13***	**8**	**0**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln				Sneath Ln				Claremont Dr (E)				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0
7:30 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	10
8:00 AM	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	12
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	**13**
8:30 AM	0	0	4	0	0	0	1	0	0	0	0	1	0	0	0	0	6	17
8:45 AM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	5	20
Count Total	0	0	16	0	0	1	11	0	0	0	0	2	0	0	0	0	30	0
Peak Hour	**0**	**0**	**5**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**13**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Sneath Ln			Sneath Ln			Claremont Dr (E)			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:00 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	6
8:15 AM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**8**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	8
Count Total	0	10	0	0	0	0	0	0	0	0	0	0	10	0
Peak Hour	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**

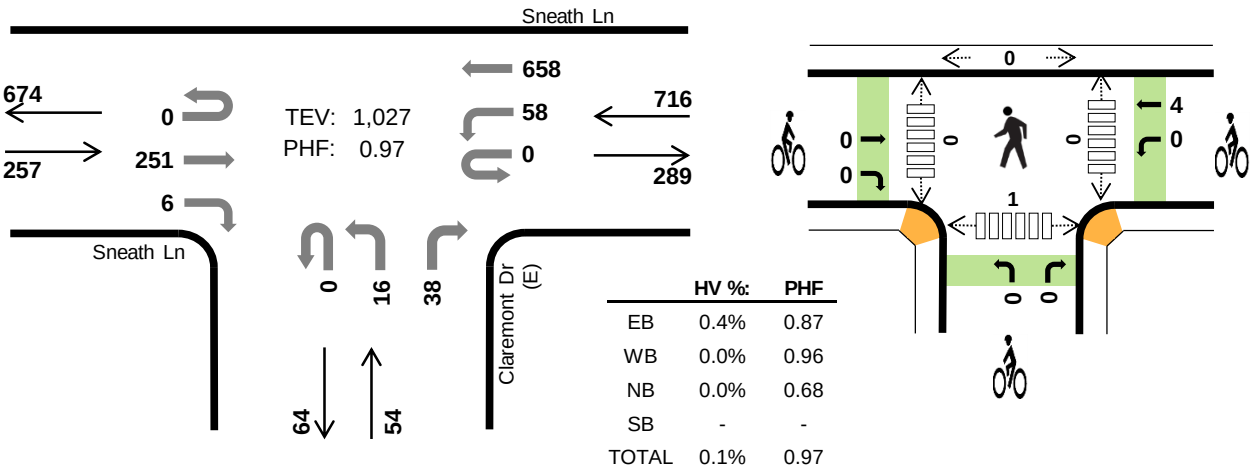
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Claremont Dr (E)
Sneath Ln

N

Peak Hour

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.4%	0.87
WB	0.0%	0.96
NB	0.0%	0.68
SB	-	-
TOTAL	0.1%	0.97

Three-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Claremont Dr (E) Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:00 PM		0	0	65	1	0	12	171	0	0	3	0	12	0	0	0	0	264	0
5:15 PM		0	0	51	1	0	15	171	0	0	5	0	15	0	0	0	0	258	0
5:30 PM		0	0	73	1	0	12	161	0	0	4	0	3	0	0	0	0	254	0
5:45 PM		0	0	62	3	0	19	155	0	0	4	0	8	0	0	0	0	251	1,027
Peak Hour	All	0	0	251	6	0	58	658	0	0	16	0	38	0	0	0	0	1,027	0
	HV	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	HV%	-	-	0%	0%	-	0%	0%	-	-	0%	-	0%	-	-	-	-	0%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:00 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	1	*1*
5:15 PM	0	0	0	0	*0*	0	2	0	0	*2*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	1	0	0	*1*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	1	0	0	*1*	0	0	0	0	*0*
Peak Hour	1	0	0	0	*1*	0	4	0	0	*4*	0	0	0	1	*1*

Three-Hour Count Summaries

Interval Start	Sneath Ln				Sneath Ln				Claremont Dr (E)				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	76	4	0	14	118	0	0	5	0	13	0	0	0	0	230	0
4:15 PM	0	0	60	0	0	9	116	0	0	3	0	12	0	0	0	0	200	0
4:30 PM	0	0	65	1	0	8	116	0	0	3	0	8	0	0	0	0	201	0
4:45 PM	0	0	62	1	0	18	147	0	0	0	0	12	0	0	0	0	240	871
5:00 PM	**0**	**0**	**65**	**1**	**0**	**12**	**171**	**0**	**0**	**3**	**0**	**12**	**0**	**0**	**0**	**0**	**264**	905
5:15 PM	**0**	**0**	**51**	**1**	**0**	**15**	**171**	**0**	**0**	**5**	**0**	**15**	**0**	**0**	**0**	**0**	**258**	963
5:30 PM	**0**	**0**	**73**	**1**	**0**	**12**	**161**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**0**	**0**	**254**	1,016
5:45 PM	**0**	**0**	**62**	**3**	**0**	**19**	**155**	**0**	**0**	**4**	**0**	**8**	**0**	**0**	**0**	**0**	**251**	**1,027**
6:00 PM	0	0	70	1	0	18	153	0	0	7	0	8	0	0	0	0	257	1,020
6:15 PM	0	0	44	1	1	16	130	0	0	4	0	7	0	0	0	0	203	965
6:30 PM	0	0	56	0	0	11	142	0	0	2	0	2	0	0	0	0	213	924
6:45 PM	0	0	46	0	0	10	120	0	0	3	0	4	0	0	0	0	183	856
Count Total	0	0	730	14	1	162	1,700	0	0	43	0	104	0	0	0	0	2,754	0
Peak Hour All	**0**	**0**	**251**	**6**	**0**	**58**	**658**	**0**	**0**	**16**	**0**	**38**	**0**	**0**	**0**	**0**	**1,027**	**0**
Peak Hour HV	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Peak Hour HV%	**-**	**-**	**0%**	**0%**	**-**	**0%**	**0%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**0%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	0	0	*3*	1	0	0	0	*1*	0	0	0	0	*0*
4:15 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
6:00 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 PM	0	0	0	0	*0*	0	3	0	0	*3*	0	0	0	1	*1*
6:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 PM	0	0	1	0	*1*	1	0	0	0	*1*	0	0	0	1	*1*
Count Total	6	2	2	0	*10*	2	7	0	0	*9*	0	0	0	3	*3*
Peak Hr	**1**	**0**	**0**	**0**	***1***	**0**	**4**	**0**	**0**	***4***	**0**	**0**	**0**	**1**	***1***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln				Sneath Ln				Claremont Dr (E)				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
4:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
6:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2
Count Total	0	0	6	0	0	1	1	0	0	1	0	1	0	0	0	0	10	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

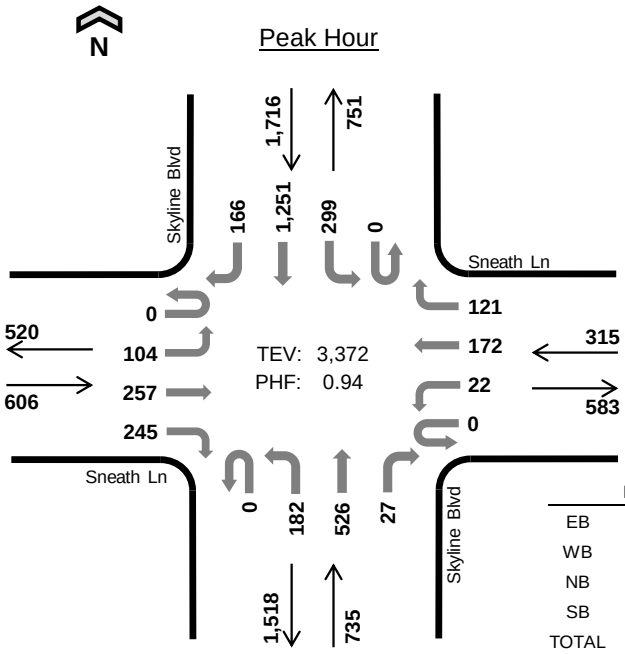
Three-Hour Count Summaries - Bikes

Interval Start	Sneath Ln			Sneath Ln			Claremont Dr (E)			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	2
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:15 PM	0	0	0	1	2	0	0	0	0	0	0	0	3	5
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	4
Count Total	0	2	0	1	6	0	0	0	0	0	0	0	9	0
Peak Hour	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

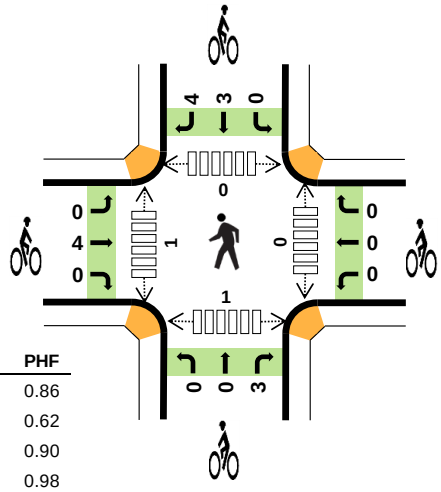
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Skyline Blvd
Sneath Ln

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	0.5%	0.86
WB	2.5%	0.62
NB	1.9%	0.90
SB	0.7%	0.98
TOTAL	1.1%	0.94



Two-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Skyline Blvd Northbound				Skyline Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	7	44	32	0	2	16	12	0	14	62	3	0	44	379	16	631	0
7:15 AM		0	11	43	31	0	6	12	13	0	15	90	3	0	80	338	15	657	0
7:30 AM		0	9	65	55	0	5	19	23	0	17	113	1	0	82	310	22	721	0
7:45 AM		**0**	**17**	**64**	**82**	**0**	**2**	**47**	**39**	**0**	**59**	**139**	**6**	**0**	**77**	**296**	**36**	**864**	2,873
8:00 AM		**0**	**30**	**64**	**46**	**0**	**8**	**82**	**37**	**0**	**62**	**121**	**9**	**0**	**69**	**293**	**74**	**895**	3,137
8:15 AM		**0**	**31**	**81**	**65**	**0**	**7**	**24**	**29**	**0**	**38**	**127**	**3**	**0**	**76**	**329**	**26**	**836**	3,316
8:30 AM		**0**	**26**	**48**	**52**	**0**	**5**	**19**	**16**	**0**	**23**	**139**	**9**	**0**	**77**	**333**	**30**	**777**	**3,372**
8:45 AM		0	18	56	42	0	11	30	27	0	39	129	5	0	79	273	37	746	3,254
Count Total		0	149	465	405	0	46	249	196	0	267	920	39	0	584	2,551	256	6,127	0
Peak Hour	**All**	**0**	**104**	**257**	**245**	**0**	**22**	**172**	**121**	**0**	**182**	**526**	**27**	**0**	**299**	**1,251**	**166**	**3,372**	**0**
	HV	**0**	**0**	**2**	**1**	**0**	**2**	**6**	**0**	**0**	**0**	**13**	**1**	**0**	**6**	**5**	**1**	**37**	**0**
	HV%	**-**	**0%**	**1%**	**0%**	**-**	**9%**	**3%**	**0%**	**-**	**0%**	**2%**	**4%**	**-**	**2%**	**0%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	2	0	0	*2*	0	0	0	1	*1*	0	0	0	0	*0*
7:15 AM	1	2	5	2	*10*	0	0	0	1	*1*	0	0	0	0	*0*
7:30 AM	1	1	2	4	*8*	0	0	0	1	*1*	0	2	0	2	*4*
7:45 AM	**1**	**2**	**2**	**2**	***7***	**0**	**0**	**0**	**2**	***2***	**0**	**1**	**0**	**1**	*2*
8:00 AM	**0**	**1**	**4**	**2**	***7***	**4**	**0**	**0**	**5**	***9***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**3**	**3**	**2**	***9***	**0**	**0**	**3**	**0**	***3***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**1**	**2**	**5**	**6**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:45 AM	3	0	5	7	*15*	0	0	0	2	*2*	0	0	0	0	*0*
Count Total	8	13	26	25	*72*	4	0	3	12	*19*	0	3	0	3	*6*
Peak Hour	**3**	**8**	**14**	**12**	***37***	**4**	**0**	**3**	**7**	***14***	**0**	**1**	**0**	**1**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln Eastbound				Sneath Ln Westbound				Skyline Blvd Northbound				Skyline Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	1	0	0	0	2	0	0	1	3	1	0	0	2	0	10	0
7:30 AM	0	0	1	0	0	0	0	1	0	0	2	0	0	1	3	0	8	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**1**	**7**	27
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**1**	**0**	**1**	**1**	**0**	**7**	32
8:15 AM	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**1**	**0**	**9**	31
8:30 AM	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**3**	**3**	**0**	**14**	**37**
8:45 AM	0	0	2	1	0	0	0	0	0	0	5	0	0	2	4	1	15	45
Count Total	0	0	6	2	0	2	10	1	0	1	23	2	0	9	14	2	72	0
Peak Hour	**0**	**0**	**2**	**1**	**0**	**2**	**6**	**0**	**0**	**0**	**13**	**1**	**0**	**6**	**5**	**1**	**37**	**0**

Two-Hour Count Summaries - Bikes

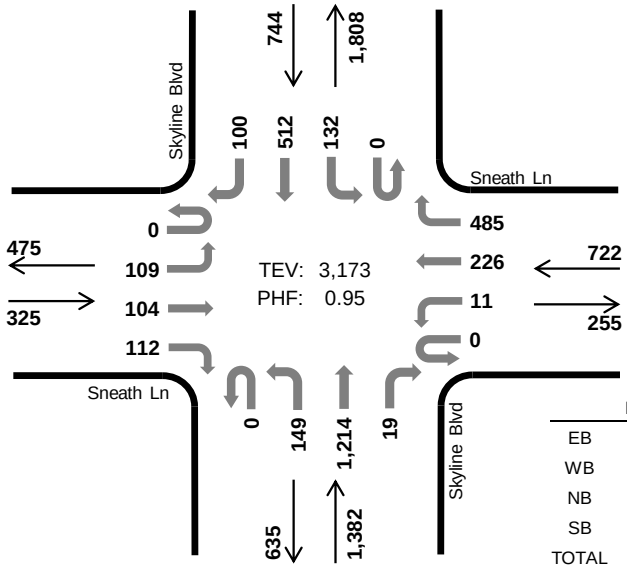
Interval Start	Sneath Ln Eastbound			Sneath Ln Westbound			Skyline Blvd Northbound			Skyline Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	5
8:00 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**9**	13
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	15
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**
8:45 AM	0	0	0	0	0	0	0	0	0	1	1	0	2	14
Count Total	0	4	0	0	0	0	0	0	3	1	7	4	19	0
Peak Hour	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**4**	**14**	**0**

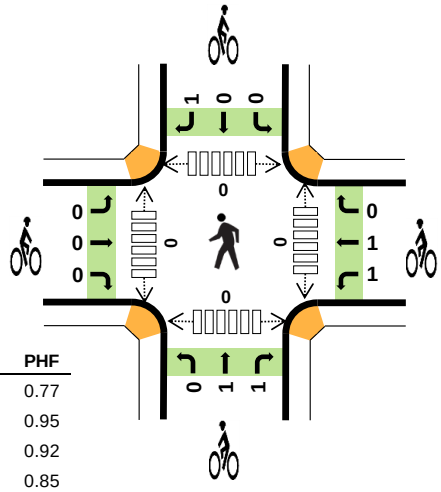
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Skyline Blvd
Sneath Ln

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour





	HV %:	PHF
EB	0.9%	0.77
WB	0.3%	0.95
NB	0.1%	0.92
SB	0.1%	0.85
TOTAL	0.2%	0.95

Three-Hour Count Summaries

Interval Start		Sneath Ln Eastbound				Sneath Ln Westbound				Skyline Blvd Northbound				Skyline Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:00 PM		0	20	23	24	0	2	45	117	0	33	334	7	0	31	121	21	778	0
5:15 PM		0	25	24	22	0	1	61	129	0	41	285	2	0	29	132	24	775	0
5:30 PM		0	38	32	35	0	6	66	118	0	31	288	6	0	34	158	26	838	0
5:45 PM		0	26	25	31	0	2	54	121	0	44	307	4	0	38	101	29	782	3,173
Peak Hour	All	0	109	104	112	0	11	226	485	0	149	1,214	19	0	132	512	100	3,173	0
	HV	0	0	3	0	0	0	1	1	0	0	1	0	0	1	0	0	7	0
	HV%	-	0%	3%	0%	-	0%	0%	0%	-	0%	0%	0%	-	1%	0%	0%	0%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:00 PM	1	1	1	0	*3*	0	0	0	1	*1*	0	0	0	0	*0*
5:15 PM	1	0	0	0	*1*	0	1	1	0	*2*	0	0	0	0	*0*
5:30 PM	0	1	0	1	*2*	0	1	0	0	*1*	0	0	0	0	*0*
5:45 PM	1	0	0	0	*1*	0	0	1	0	*1*	0	0	0	0	*0*
Peak Hour	3	2	1	1	*7*	0	2	2	1	*5*	0	0	0	0	*0*

Three-Hour Count Summaries

Interval Start	Sneath Ln Eastbound				Sneath Ln Westbound				Skyline Blvd Northbound				Skyline Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	13	31	26	0	12	45	63	0	29	231	4	0	40	122	11	627	0
4:15 PM	0	7	32	20	0	7	40	64	0	26	282	4	0	27	122	8	639	0
4:30 PM	0	10	13	16	0	4	43	68	0	27	315	7	0	38	149	13	703	0
4:45 PM	0	16	18	23	0	3	52	88	0	30	279	3	0	39	135	18	704	2,673
5:00 PM	**0**	**20**	**23**	**24**	**0**	**2**	**45**	**117**	**0**	**33**	**334**	**7**	**0**	**31**	**121**	**21**	**778**	2,824
5:15 PM	**0**	**25**	**24**	**22**	**0**	**1**	**61**	**129**	**0**	**41**	**285**	**2**	**0**	**29**	**132**	**24**	**775**	2,960
5:30 PM	**0**	**38**	**32**	**35**	**0**	**6**	**66**	**118**	**0**	**31**	**288**	**6**	**0**	**34**	**158**	**26**	**838**	3,095
5:45 PM	**0**	**26**	**25**	**31**	**0**	**2**	**54**	**121**	**0**	**44**	**307**	**4**	**0**	**38**	**101**	**29**	**782**	**3,173**
6:00 PM	0	29	24	25	0	5	41	117	0	23	306	4	0	39	127	13	753	3,148
6:15 PM	0	15	13	19	0	5	37	103	0	23	297	3	0	27	109	9	660	3,033
6:30 PM	0	8	17	18	0	3	41	86	0	29	319	6	0	32	97	12	668	2,863
6:45 PM	0	11	11	9	0	3	37	78	0	16	293	6	0	28	96	6	594	2,675
Count Total	0	218	263	268	0	53	562	1,152	0	352	3,536	56	0	402	1,469	190	8,521	0
Peak Hour All	**0**	**109**	**104**	**112**	**0**	**11**	**226**	**485**	**0**	**149**	**1,214**	**19**	**0**	**132**	**512**	**100**	**3,173**	**0**
Peak Hour HV	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**7**	**0**
Peak Hour HV%	**-**	**0%**	**3%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**1%**	**0%**	**0%**	**0%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	1	2	1	*5*	1	0	0	0	*1*	0	0	0	1	*1*
4:15 PM	2	1	2	1	*6*	0	1	0	0	*1*	0	0	0	0	*0*
4:30 PM	0	1	2	1	*4*	0	0	1	0	*1*	0	0	0	0	*0*
4:45 PM	1	1	1	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	**1**	**1**	**1**	**0**	***3***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**1**	**0**	**1**	***2***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:45 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
6:00 PM	0	1	0	0	*1*	0	0	1	0	*1*	0	0	0	2	*2*
6:15 PM	1	1	0	1	*3*	0	0	1	0	*1*	0	0	0	0	*0*
6:30 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 PM	1	2	0	0	*3*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	9	10	8	8	*35*	2	3	5	1	*11*	0	0	0	3	*3*
Peak Hour	**3**	**2**	**1**	**1**	***7***	**0**	**2**	**2**	**1**	***5***	**0**	**0**	**0**	**0**	***0***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Sneath Ln Eastbound				Sneath Ln Westbound				Skyline Blvd Northbound				Skyline Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	1	0	0	1	1	0	0	0	1	0	5	0
4:15 PM	0	0	2	0	0	0	1	0	0	0	2	0	0	0	1	0	6	0
4:30 PM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0	4	0
4:45 PM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	4	19
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	17
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	12
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	10
5:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**
6:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5
6:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	3	7
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	7
6:45 PM	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3	9
Count Total	0	0	9	0	0	1	7	2	0	1	7	0	0	1	7	0	35	0
Peak Hour	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**7**	**0**

Three-Hour Count Summaries - Bikes

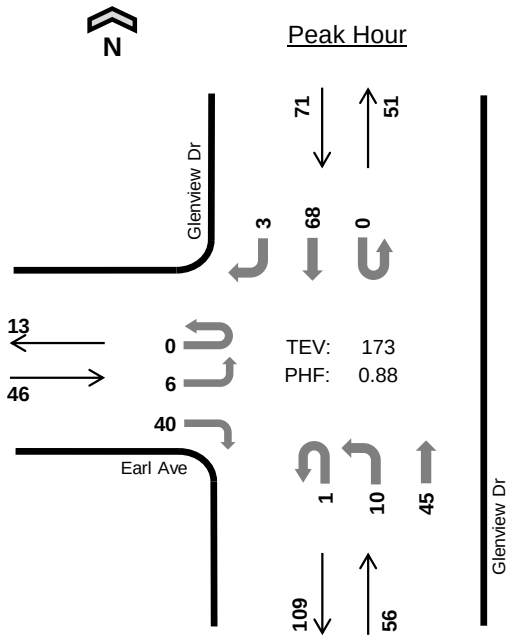
Interval Start	Sneath Ln Eastbound			Sneath Ln Westbound			Skyline Blvd Northbound			Skyline Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	3
5:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	4
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**5**
6:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	5
6:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	4
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	2	0	2	1	0	1	3	1	0	0	1	11	0
Peak Hour	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**5**	**0**

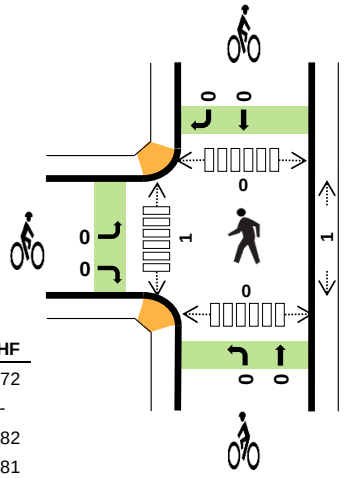
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Glenview Dr
Earl Ave

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

Peak Hour





	HV %:	PHF
EB	0.0%	0.72
WB	-	-
NB	0.0%	0.82
SB	0.0%	0.81
TOTAL	0.0%	0.88

Two-Hour Count Summaries

Interval Start	Earl Ave Eastbound				n/a Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	3	0	0	0	0	0	0	2	0	0	0	11	1	18	0
7:15 AM	0	1	0	8	0	0	0	0	0	0	5	0	0	0	13	0	27	0
7:30 AM	**0**	**4**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**1**	**10**	**0**	**0**	**0**	**22**	**0**	**49**	0
7:45 AM	**0**	**1**	**0**	**11**	**0**	**0**	**0**	**0**	**1**	**1**	**11**	**0**	**0**	**0**	**19**	**1**	**45**	139
8:00 AM	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**6**	**11**	**0**	**0**	**0**	**20**	**1**	**48**	169
8:15 AM	**0**	**1**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**2**	**13**	**0**	**0**	**0**	**7**	**1**	**31**	**173**
8:30 AM	0	1	0	5	0	0	0	0	0	3	15	0	0	0	10	1	35	159
8:45 AM	0	1	0	2	0	0	0	0	0	0	2	0	0	0	10	1	16	130
Count Total	0	10	0	58	0	0	0	0	1	13	69	0	0	0	112	6	269	0
Peak Hour All	**0**	**6**	**0**	**40**	**0**	**0**	**0**	**0**	**1**	**10**	**45**	**0**	**0**	**0**	**68**	**3**	**173**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**0%**	**0%**	**0%**	**-**	**-**	**-**	**0%**	**0%**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	*2*
8:00 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:30 AM	0	0	0	1	*1*	0	0	0	0	*0*	0	3	0	0	*3*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	1	1	*2*	0	0	0	0	*0*	1	4	0	0	*5*
Peak Hr	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Earl Ave				n/a				Glenview Dr				Glenview Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Two-Hour Count Summaries - Bikes

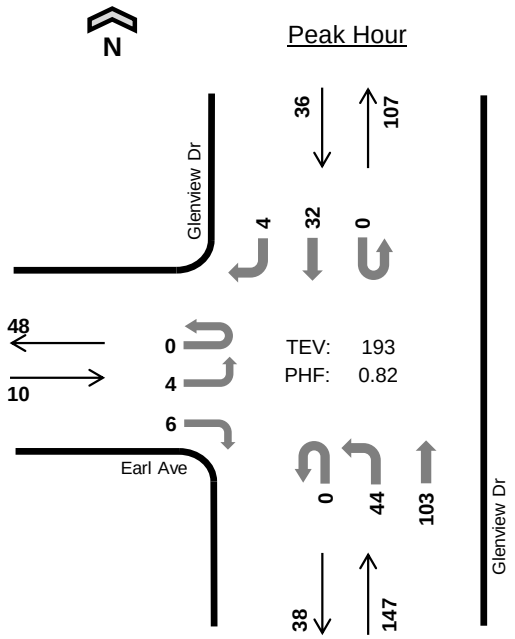
Interval Start	Earl Ave			0			Glenview Dr			Glenview Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

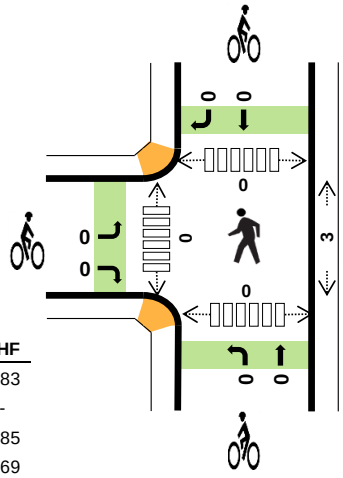
Glenview Dr
Earl Ave

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:15 PM to 6:15 PM

Peak Hour



	HV %:	PHF
EB	0.0%	0.83
WB	-	-
NB	0.0%	0.85
SB	0.0%	0.69
TOTAL	0.0%	0.82



Three-Hour Count Summaries

Interval Start		Earl Ave Eastbound				n/a Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:15 PM		0	1	0	1	0	0	0	0	0	8	25	0	0	0	9	1	45	0
5:30 PM		0	2	0	1	0	0	0	0	0	11	24	0	0	0	6	1	45	0
5:45 PM		0	1	0	2	0	0	0	0	0	11	32	0	0	0	11	2	59	0
6:00 PM		0	0	0	2	0	0	0	0	0	14	22	0	0	0	6	0	44	193
Peak Hour	All	0	4	0	6	0	0	0	0	0	44	103	0	0	0	32	4	193	0
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	HV%	-	0%	-	0%	-	-	-	-	-	0%	0%	-	-	-	0%	0%	0%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	0	0	*1*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	0	0	*1*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	0	0	*1*
Peak Hour	0	0	0	0	*0*	0	0	0	0	*0*	3	0	0	0	*3*

Three-Hour Count Summaries

Interval Start	Earl Ave Eastbound				n/a Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	2	0	0	0	0	0	5	20	0	0	0	6	0	33	0
4:15 PM	0	1	0	1	0	0	0	0	0	5	19	0	1	0	5	0	32	0
4:30 PM	0	0	0	0	0	0	0	0	0	4	13	0	0	0	7	0	24	0
4:45 PM	0	1	0	1	0	0	0	0	0	3	17	0	0	0	9	1	32	121
5:00 PM	0	1	0	2	0	0	0	0	0	8	12	0	0	0	2	0	25	113
5:15 PM	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**8**	**25**	**0**	**0**	**0**	**9**	**1**	**45**	126
5:30 PM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**11**	**24**	**0**	**0**	**0**	**6**	**1**	**45**	147
5:45 PM	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**11**	**32**	**0**	**0**	**0**	**11**	**2**	**59**	174
6:00 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**14**	**22**	**0**	**0**	**0**	**6**	**0**	**44**	**193**
6:15 PM	0	0	0	5	0	0	0	0	0	12	15	0	0	0	11	0	43	191
6:30 PM	0	0	0	1	0	0	0	0	0	5	10	0	0	0	4	2	22	168
6:45 PM	0	1	0	0	0	0	0	0	0	5	12	0	0	0	12	1	31	140
Count Total	0	8	0	18	0	0	0	0	0	91	221	0	1	0	88	8	435	0
Peak Hour All	**0**	**4**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**44**	**103**	**0**	**0**	**0**	**32**	**4**	**193**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**-**	**-**	**-**	**0%**	**0%**	**0%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	1	0	0	*1*
4:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	0	0	*2*
4:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
6:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***
6:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	0	0	*1*
6:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	1	0	0	*1*
6:45 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	2	0	0	*2*
Count Total	0	0	2	0	*2*	0	0	0	0	*0*	4	6	0	0	*10*
Peak Hr	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**0**	***3***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Earl Ave				n/a				Glenview Dr				Glenview Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	2
Count Total	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

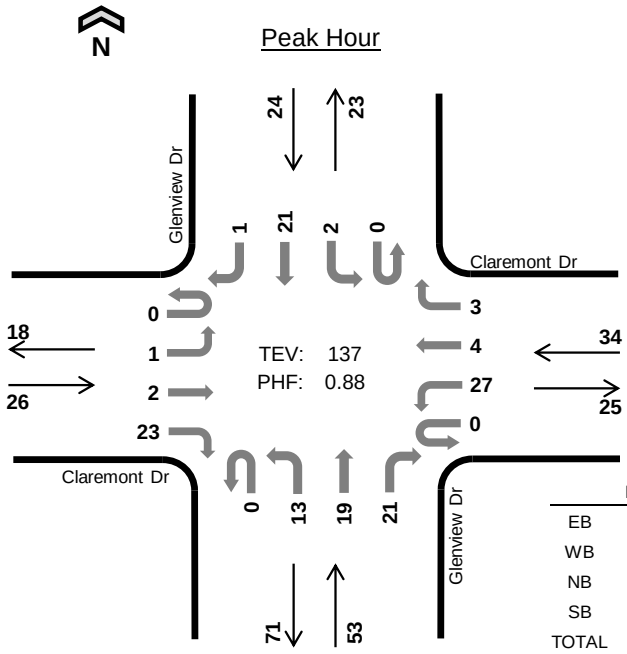
Three-Hour Count Summaries - Bikes

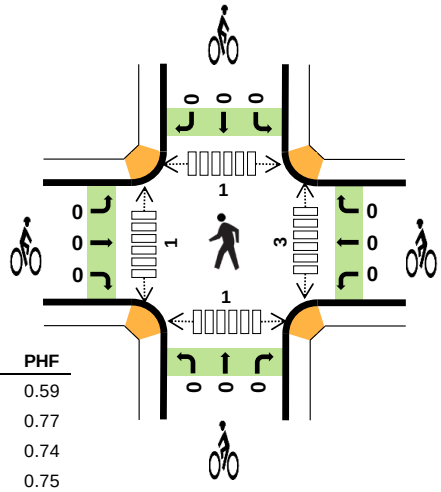
Interval Start	Earl Ave			0			Glenview Dr			Glenview Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Glenview Dr
Claremont Dr

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV %:	PHF
EB	0.0%	0.59
WB	0.0%	0.77
NB	0.0%	0.74
SB	4.2%	0.75
TOTAL	0.7%	0.88

Two-Hour Count Summaries

Interval Start	Claremont Dr Eastbound				Claremont Dr Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	5	0	4	0	0	0	0	1	2	0	0	3	0	16	0
7:15 AM	0	1	0	5	0	3	1	0	0	1	1	4	0	0	2	0	18	0
7:30 AM	**0**	**0**	**0**	**11**	**0**	**10**	**1**	**0**	**0**	**3**	**4**	**5**	**0**	**1**	**4**	**0**	**39**	0
7:45 AM	**0**	**0**	**0**	**5**	**0**	**6**	**2**	**2**	**0**	**2**	**7**	**3**	**0**	**0**	**6**	**0**	**33**	106
8:00 AM	**0**	**0**	**2**	**6**	**0**	**8**	**0**	**0**	**0**	**5**	**3**	**3**	**0**	**0**	**7**	**1**	**35**	125
8:15 AM	**0**	**1**	**0**	**1**	**0**	**3**	**1**	**1**	**0**	**3**	**5**	**10**	**0**	**1**	**4**	**0**	**30**	**137**
8:30 AM	0	0	4	6	0	3	1	0	0	1	4	7	0	0	3	0	29	127
8:45 AM	0	0	0	1	0	8	0	0	0	2	1	0	0	0	3	0	15	109
Count Total	0	3	6	40	0	45	6	3	0	17	26	34	0	2	32	1	215	0
Peak Hour All	**0**	**1**	**2**	**23**	**0**	**27**	**4**	**3**	**0**	**13**	**19**	**21**	**0**	**2**	**21**	**1**	**137**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**50%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	2	*2*
7:15 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
7:45 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	*2*
8:00 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**1**	**0**	*3*
8:15 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:30 AM	2	0	0	0	*2*	0	0	0	0	*0*	0	2	0	0	*2*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	1	3	*6*
Count Total	2	0	1	1	*4*	0	0	0	0	*0*	3	5	2	6	*16*
Peak Hour	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**1**	**1**	***6***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Claremont Dr Eastbound				Claremont Dr Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**
8:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**

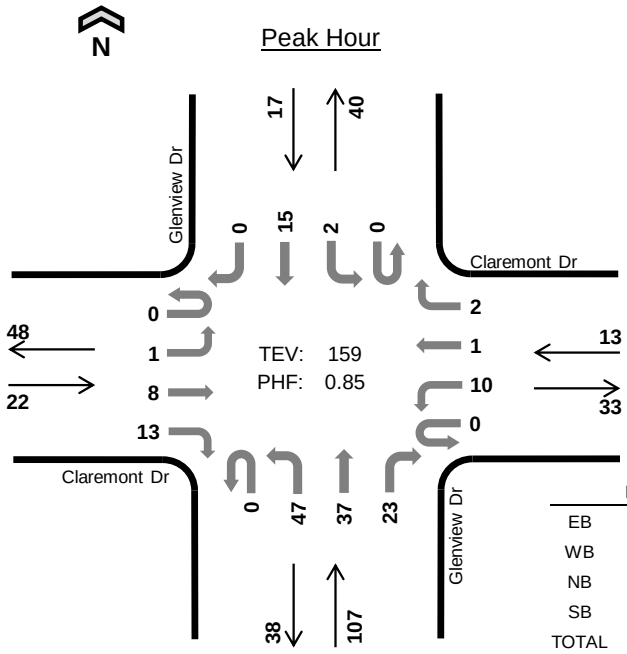
Two-Hour Count Summaries - Bikes

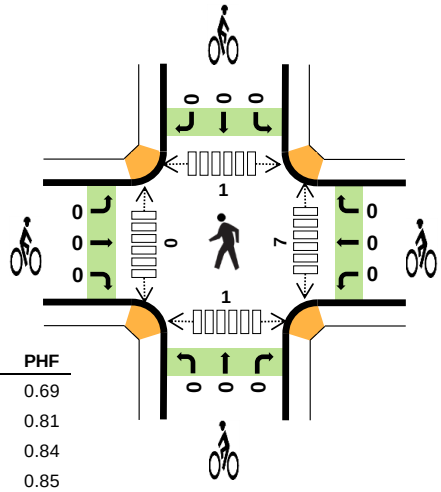
Interval Start	Claremont Dr Eastbound			Claremont Dr Westbound			Glenview Dr Northbound			Glenview Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Glenview Dr
Claremont Dr

Date: 05-14-2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:15 PM to 6:15 PM





	HV %:	PHF
EB	0.0%	0.69
WB	0.0%	0.81
NB	0.0%	0.84
SB	0.0%	0.85
TOTAL	0.0%	0.85

Three-Hour Count Summaries

Interval Start		Claremont Dr Eastbound				Claremont Dr Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:15 PM		0	1	0	3	0	3	0	1	0	12	11	5	0	1	3	0	40	0
5:30 PM		0	0	2	2	0	1	0	0	0	11	10	5	0	0	5	0	36	0
5:45 PM		0	0	3	3	0	4	0	0	0	18	8	6	0	0	5	0	47	0
6:00 PM		0	0	3	5	0	2	1	1	0	6	8	7	0	1	2	0	36	159
Peak Hour	All	0	1	8	13	0	10	1	2	0	47	37	23	0	2	15	0	159	0
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	HV%	-	0%	0%	0%	-	0%	0%	0%	-	0%	0%	0%	-	0%	0%	-	0%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	5	0	0	0	*5*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	1	*1*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	2	0	1	0	*3*
Peak Hour	0	0	0	0	*0*	0	0	0	0	*0*	7	0	1	1	*9*

Three-Hour Count Summaries

Interval Start	Claremont Dr Eastbound				Claremont Dr Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	2	0	1	1	0	0	5	7	7	0	1	4	0	28	0
4:15 PM	0	0	0	4	0	1	1	0	0	5	9	6	0	0	0	0	26	0
4:30 PM	0	1	1	3	0	2	0	1	0	5	6	4	0	0	3	0	26	0
4:45 PM	0	0	2	1	0	4	0	0	0	4	5	8	0	0	3	1	28	108
5:00 PM	0	0	1	2	0	1	2	0	0	5	6	2	0	0	0	0	19	99
5:15 PM	**0**	**1**	**0**	**3**	**0**	**3**	**0**	**1**	**0**	**12**	**11**	**5**	**0**	**1**	**3**	**0**	**40**	113
5:30 PM	**0**	**0**	**2**	**2**	**0**	**1**	**0**	**0**	**0**	**11**	**10**	**5**	**0**	**0**	**5**	**0**	**36**	123
5:45 PM	**0**	**0**	**3**	**3**	**0**	**4**	**0**	**0**	**0**	**18**	**8**	**6**	**0**	**0**	**5**	**0**	**47**	142
6:00 PM	**0**	**0**	**3**	**5**	**0**	**2**	**1**	**1**	**0**	**6**	**8**	**7**	**0**	**1**	**2**	**0**	**36**	**159**
6:15 PM	0	0	0	3	0	2	0	0	0	5	4	6	1	0	3	1	25	144
6:30 PM	0	0	0	0	0	6	0	0	0	3	4	3	0	0	2	1	19	127
6:45 PM	0	0	0	2	0	6	1	0	0	6	3	6	0	0	4	1	29	109
Count Total	0	2	12	30	0	33	6	3	0	85	81	65	1	3	34	4	359	0
Peak Hour All	**0**	**1**	**8**	**13**	**0**	**10**	**1**	**2**	**0**	**47**	**37**	**23**	**0**	**2**	**15**	**0**	**159**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**-**	**0%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	4	*4*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
5:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	5	2	5	*12*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**0**	**0**	*5*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
6:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**1**	**0**	***3***
6:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	1	2	0	*4*
6:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	1	1	0	*2*
6:45 PM	0	0	1	0	*1*	0	0	0	0	*0*	1	0	0	2	*3*
Count Total	0	0	1	0	*1*	0	0	0	0	*0*	9	7	7	12	*35*
Peak Hour	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**7**	**0**	**1**	**1**	***9***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Claremont Dr Eastbound				Claremont Dr Westbound				Glenview Dr Northbound				Glenview Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Count Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	Claremont Dr Eastbound			Claremont Dr Westbound			Glenview Dr Northbound			Glenview Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
6:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	414	1197	499	141	152	359
v/c Ratio	0.88	0.89	0.67	0.21	0.54	0.41
Control Delay	53.4	20.5	24.3	10.7	39.0	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	20.5	24.3	10.7	39.0	8.2
Queue Length 50th (ft)	208	360	187	25	74	47
Queue Length 95th (ft)	#428	#905	307	63	m124	m98
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	468	1463	887	773	491	861
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.82	0.56	0.18	0.31	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Appendix B
Synchro Reports

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	389	1125	429	121	132	312
Future Volume (vph)	389	1125	429	121	132	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1563	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1563	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.86	0.86	0.87	0.87
Adj. Flow (vph)	414	1197	499	141	152	359
RTOR Reduction (vph)	0	0	0	33	0	111
Lane Group Flow (vph)	414	1197	499	108	152	248
Confl. Peds. (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	20.5	55.5	31.0	31.0	12.4	36.4
Effective Green, g (s)	20.5	55.5	31.0	31.0	12.4	36.4
Actuated g/C Ratio	0.27	0.72	0.40	0.40	0.16	0.47
Clearance Time (s)	4.0	5.7	5.7	5.7	3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	470	1341	749	628	284	747
v/s Ratio Prot	0.23	c0.64	0.27		c0.09	0.16
v/s Ratio Perm				0.07		
v/c Ratio	0.88	0.89	0.67	0.17	0.54	0.33
Uniform Delay, d1	27.1	8.5	18.8	14.8	29.7	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.02	1.10
Incremental Delay, d2	17.3	7.9	2.2	0.1	1.9	0.3
Delay (s)	44.4	16.4	21.1	14.9	32.1	14.3
Level of Service	D	B	C	B	C	B
Approach Delay (s)		23.6	19.7		19.6	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	13.2
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	389	1125	429	121	132	312
Future Volume (veh/h)	389	1125	429	121	132	312
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	1197	499	141	152	359
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.86	0.86	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	439	1280	727	617	353	707
Arrive On Green	0.25	0.69	0.39	0.39	0.20	0.20
Sat Flow, veh/h	1774	1863	1863	1581	1774	1583
Grp Volume(v), veh/h	414	1197	499	141	152	359
Grp Sat Flow(s),veh/h/ln	1774	1863	1863	1581	1774	1583
Q Serve(g_s), s	18.5	45.5	18.0	4.8	6.1	13.1
Cycle Q Clear(g_c), s	18.5	45.5	18.0	4.8	6.1	13.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	439	1280	727	617	353	707
V/C Ratio(X)	0.94	0.94	0.69	0.23	0.43	0.51
Avail Cap(c_a), veh/h	439	1382	727	617	461	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	11.1	20.5	16.5	28.4	16.0
Incr Delay (d2), s/veh	29.1	11.5	2.7	0.2	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	27.0	9.8	2.1	3.0	12.6
LnGrp Delay(d),s/veh	59.0	22.6	23.2	16.7	29.2	16.6
LnGrp LOS	E	C	C	B	C	B
Approach Vol, veh/h		1611	640		511	
Approach Delay, s/veh		31.9	21.8		20.3	
Approach LOS		C	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		61.3		19.6	24.0	37.3		
Change Period (Y+Rc), s		5.7		3.5	4.0	5.7		
Max Green Setting (Gmax), s		60.0		21.0	20.0	30.0		
Max Q Clear Time (g_c+I1), s		47.5		15.1	20.5	20.0		
Green Ext Time (p_c), s		8.1		1.0	0.0	2.7		

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	18.1

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL	SWT	SWR
Lane Configurations														
Traffic Vol, veh/h	77	8	56	42	9	27	25	9	398	44	1	44	286	31
Future Vol, veh/h	77	8	56	42	9	27	25	9	398	44	1	44	286	31
Conflicting Peds, #/hr	1	0	4	4	0	1	0	6	0	1	0	1	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	92	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	12	81	61	13	39	36	13	577	64	1	64	414	45

Major/Minor	Minor1			Minor2			Major1				Major2			
Conflicting Flow All	1053	1303	326	970	1313	237	459	465	0	0	641	642	0	0
Stage 1	708	708	-	573	573	-	-	-	-	-	-	-	-	-
Stage 2	345	595	-	397	740	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	181	159	670	208	157	764	735	1093	-	-	563	939	-	-
Stage 1	392	436	-	472	502	-	-	-	-	-	-	-	-	-
Stage 2	644	491	-	600	421	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	143	138	667	153	136	759	781	781	-	-	925	925	-	-
Mov Cap-2 Maneuver	143	138	-	153	136	-	-	-	-	-	-	-	-	-
Stage 1	367	408	-	440	464	-	-	-	-	-	-	-	-	-
Stage 2	551	454	-	478	394	-	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	107.5	41.5	0.7	1.1
HCM LOS	F	E		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	781	-	-	207	207	925	-	-
HCM Lane V/C Ratio	0.063	-	-	0.987	0.546	0.07	-	-
HCM Control Delay (s)	9.9	-	-	107.5	41.5	9.2	-	-
HCM Lane LOS	A	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	8.6	2.9	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	29	6	317	5	10
Future Vol, veh/h	574	29	6	317	5	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	68	68	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	604	31	9	466	12	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	637	0	1106	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	233	487
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	945	-	230	486
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	620	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	945	-
HCM Lane V/C Ratio	0.101	-	-	0.009	-
HCM Control Delay (s)	16.3	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	579	12	6	311	16	8
Future Vol, veh/h	579	12	6	311	16	8
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	70	70	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	623	13	9	444	27	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1093	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	237	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	947	-	234	482
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	282	-	-	947	-
HCM Lane V/C Ratio	0.142	-	-	0.009	-
HCM Control Delay (s)	19.9	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Intersection Delay, s/veh	64.5
Intersection LOS	F

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	654	10	18	78	18	259
Future Vol, veh/h	654	10	18	78	18	259
Peak Hour Factor	0.91	0.91	0.86	0.86	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	719	11	21	91	24	341
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	96.7	10.8	16.4
HCM LOS	F	B	C

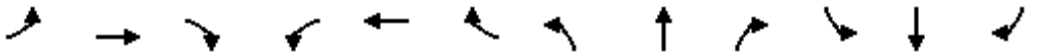
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	19%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	81%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	664	18	259
LT Vol	18	654	18	0
Through Vol	0	0	0	0
RT Vol	78	10	0	259
Lane Flow Rate	112	730	24	341
Geometry Grp	2	2	7	7
Degree of Util (X)	0.188	1.125	0.047	0.566
Departure Headway (Hd)	6.357	5.548	7.477	6.252
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	657	482	579
Service Time	4.357	3.548	5.177	3.952
HCM Lane V/C Ratio	0.197	1.111	0.05	0.589
HCM Control Delay	10.8	96.7	10.5	16.8
HCM Lane LOS	B	F	B	C
HCM 95th-tile Q	0.7	22.4	0.1	3.5

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	420	285	312	195	202	614	305	1277	169
v/c Ratio	1.14	0.48	3.09	0.39	0.92	0.88	0.87	1.32	0.34
Control Delay	133.2	7.5	984.1	8.0	97.9	65.2	73.2	189.0	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.2	7.5	984.1	8.0	97.9	65.2	73.2	189.0	16.4
Queue Length 50th (ft)	~406	3	~451	0	168	267	241	~719	39
Queue Length 95th (ft)	#569	61	#411	1	#314	#392	#375	#857	101
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	369	599	101	498	221	696	387	967	496
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.48	3.09	0.39	0.91	0.88	0.79	1.32	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	257	245	22	172	121	182	526	27	299	1251	166
Future Volume (vph)	104	257	245	22	172	121	182	526	27	299	1251	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1836	1557		1852	1583	1770	3509		1770	3539	1533
Flt Permitted		0.79	1.00		0.25	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1478	1557		462	1583	1770	3509		1770	3539	1533
Peak-hour factor, PHF	0.86	0.86	0.86	0.62	0.62	0.62	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	121	299	285	35	277	195	202	584	30	305	1277	169
RTOR Reduction (vph)	0	0	210	0	0	152	0	3	0	0	0	78
Lane Group Flow (vph)	0	420	75	0	312	43	202	611	0	305	1277	91
Confl. Peds. (#/hr)			1	1								1
Confl. Bikes (#/hr)			4						3			7
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		32.0	32.0		28.0	28.0	15.9	25.3		25.5	35.1	35.1
Effective Green, g (s)		32.0	32.0		28.0	28.0	15.9	25.3		25.5	35.1	35.1
Actuated g/C Ratio		0.25	0.25		0.22	0.22	0.12	0.20		0.20	0.27	0.27
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		369	389		101	346	219	693		352	970	420
v/s Ratio Prot							0.11	0.17		c0.17	c0.36	
v/s Ratio Perm		c0.28	0.05		c0.68	0.03						0.06
v/c Ratio		1.14	0.19		3.09	0.12	0.92	0.88		0.87	1.32	0.22
Uniform Delay, d1		48.0	37.8		50.0	40.1	55.4	49.9		49.6	46.5	35.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		90.0	0.2		965.8	0.2	39.8	12.6		19.5	149.8	0.3
Delay (s)		138.0	38.1		1015.8	40.3	95.2	62.5		69.1	196.2	36.1
Level of Service		F	D		F	D	F	E		E	F	D
Approach Delay (s)		97.6			640.6			70.6			158.6	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	192.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	40	11	45	68	3
Future Vol, veh/h	6	40	11	45	68	3
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	56	13	55	84	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	168	87	89	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	822	971	1506	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	813	970	1505	-	-	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1505	-	946	-	-
HCM Lane V/C Ratio	0.009	-	0.068	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	2	23	27	4	3	13	19	21	2	21	1
Future Vol, veh/h	1	2	23	27	4	3	13	19	21	2	21	1
Peak Hour Factor	0.59	0.59	0.95	0.77	0.77	0.77	0.74	0.74	0.74	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	24	35	5	4	18	26	28	3	28	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.5	7.3	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	4%	79%	8%
Vol Thru, %	36%	8%	12%	88%
Vol Right, %	40%	88%	9%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	26	34	24
LT Vol	13	1	27	2
Through Vol	19	2	4	21
RT Vol	21	23	3	1
Lane Flow Rate	72	29	44	32
Geometry Grp	1	1	1	1
Degree of Util (X)	0.078	0.029	0.052	0.037
Departure Headway (Hd)	3.896	3.623	4.242	4.108
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	916	979	840	868
Service Time	1.935	1.679	2.289	2.151
HCM Lane V/C Ratio	0.079	0.03	0.052	0.037
HCM Control Delay	7.3	6.8	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	294	458	975	136	75	491
v/c Ratio	0.95	0.33	0.99	0.16	0.24	0.73
Control Delay	86.5	6.0	54.7	11.6	42.7	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.5	6.0	54.7	11.6	42.7	31.3
Queue Length 50th (ft)	216	102	686	39	48	249
Queue Length 95th (ft)	#372	140	#992	73	m89	m363
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	310	1376	982	835	326	672
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.33	0.99	0.16	0.23	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWU	SWL	SWR
Lane Configurations							
Traffic Volume (vph)	259	403	936	131	7	59	432
Future Volume (vph)	259	403	936	131	7	59	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7		3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1559		1770	1583
Flt Permitted	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1559		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	294	458	975	136	8	67	491
RTOR Reduction (vph)	0	0	0	13	0	0	56
Lane Group Flow (vph)	294	458	975	123	0	75	435
Confl. Peds. (#/hr)				2			
Turn Type	Prot	NA	NA	Perm	Perm	Prot	pt+ov
Protected Phases	5	2	6			4	4 5
Permitted Phases				6	4		
Actuated Green, G (s)	20.0	84.0	60.0	60.0		20.5	44.0
Effective Green, g (s)	20.0	84.0	60.0	60.0		20.5	44.0
Actuated g/C Ratio	0.18	0.74	0.53	0.53		0.18	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7		3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	311	1376	983	822		319	612
v/s Ratio Prot	c0.17	0.25	c0.52				c0.27
v/s Ratio Perm				0.08		0.04	
v/c Ratio	0.95	0.33	0.99	0.15		0.24	0.71
Uniform Delay, d1	46.3	5.1	26.6	13.8		39.9	29.5
Progression Factor	1.00	1.00	1.00	1.00		1.02	1.02
Incremental Delay, d2	36.5	0.1	26.6	0.1		0.4	3.9
Delay (s)	82.8	5.3	53.2	13.9		40.9	33.9
Level of Service	F	A	D	B		D	C
Approach Delay (s)		35.6	48.4			34.8	
Approach LOS		D	D			C	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	13.2
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 cannot analyze U-Turning movements.

Intersection	
Int Delay, s/veh	7.5

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations													
Traffic Vol, veh/h	86	26	40	16	10	12	12	27	249	68	67	422	98
Future Vol, veh/h	86	26	40	16	10	12	12	27	249	68	67	422	98
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	80	80	80	80	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	29	44	19	12	14	15	34	311	85	77	485	113

Major/Minor	Minor1			Minor2			Major1				Major2		
Conflicting Flow All	855	1204	198	964	1190	299	598	598	0	0	396	0	0
Stage 1	452	452	-	696	696	-	-	-	-	-	-	-	-
Stage 2	403	752	-	268	494	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	252	183	810	210	186	697	600	975	-	-	1159	-	-
Stage 1	557	569	-	398	441	-	-	-	-	-	-	-	-
Stage 2	595	416	-	714	545	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	212	161	810	156	163	697	812	812	-	-	1159	-	-
Mov Cap-2 Maneuver	212	161	-	156	163	-	-	-	-	-	-	-	-
Stage 1	524	535	-	374	412	-	-	-	-	-	-	-	-
Stage 2	529	389	-	601	512	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	45.4	26.7	1.1	1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	812	-	-	247	210	1159	-	-
HCM Lane V/C Ratio	0.06	-	-	0.676	0.213	0.066	-	-
HCM Control Delay (s)	9.7	-	-	45.4	26.7	8.3	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	4.4	0.8	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	255	5	7	697	26	8
Future Vol, veh/h	255	5	7	697	26	8
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	95	95	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	271	5	7	734	34	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	279	0	1025	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	748	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1284	-	260	762
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	257	760
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	-	-	1280	-
HCM Lane V/C Ratio	0.145	-	-	0.006	-
HCM Control Delay (s)	18.8	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	257	11	5	672	32	7
Future Vol, veh/h	257	11	5	672	32	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	94	94	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	12	5	715	46	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	294	0	1013	288
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1268	-	265	751
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1268	-	263	751
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	1268	-
HCM Lane V/C Ratio	0.187	-	-	0.004	-
HCM Control Delay (s)	19.8	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Intersection Delay, s/veh	32.4
Intersection LOS	D

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	251	6	16	38	58	658
Future Vol, veh/h	251	6	16	38	58	658
Peak Hour Factor	0.87	0.87	0.68	0.68	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	7	24	56	60	685
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	15.1	10	41.6
HCM LOS	C	A	E

Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	30%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	70%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	257	58	658
LT Vol	16	251	58	0
Through Vol	0	0	0	0
RT Vol	38	6	0	658
Lane Flow Rate	79	295	60	685
Geometry Grp	2	2	7	7
Degree of Util (X)	0.133	0.5	0.104	0.951
Departure Headway (Hd)	6.025	6.099	6.207	4.995
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	594	591	578	727
Service Time	4.07	4.138	3.936	2.724
HCM Lane V/C Ratio	0.133	0.499	0.104	0.942
HCM Control Delay	10	15.1	9.7	44.4
HCM Lane LOS	A	C	A	E
HCM 95th-tile Q	0.5	2.8	0.3	13.9

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	277	145	250	511	162	1341	155	602	118
v/c Ratio	0.86	0.29	1.28	0.74	0.70	1.62	0.63	0.70	0.25
Control Delay	64.5	7.5	197.3	14.0	60.8	312.9	54.8	40.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	7.5	197.3	14.0	60.8	312.9	54.8	40.7	7.3
Queue Length 50th (ft)	177	0	~220	33	105	~693	101	198	0
Queue Length 95th (ft)	#271	31	#416	170	#194	#886	161	244	37
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	350	524	195	690	276	995	381	1211	608
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.28	1.28	0.74	0.59	1.35	0.41	0.50	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	104	112	11	226	485	149	1214	19	132	512	100
Future Volume (vph)	109	104	112	11	226	485	149	1214	19	132	512	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1816	1583		1858	1563	1770	3530		1770	3539	1549
Flt Permitted		0.71	1.00		0.49	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1327	1583		907	1563	1770	3530		1770	3539	1549
Peak-hour factor, PHF	0.77	0.77	0.77	0.95	0.95	0.95	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	142	135	145	12	238	511	162	1320	21	155	602	118
RTOR Reduction (vph)	0	0	110	0	0	355	0	1	0	0	0	89
Lane Group Flow (vph)	0	277	35	0	250	156	162	1340	0	155	602	29
Confl. Bikes (#/hr)						1			2			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		25.1	25.1		22.2	22.2	13.6	24.2		14.4	25.2	25.2
Effective Green, g (s)		25.1	25.1		22.2	22.2	13.6	24.2		14.4	25.2	25.2
Actuated g/C Ratio		0.24	0.24		0.22	0.22	0.13	0.23		0.14	0.24	0.24
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		323	385		195	336	233	828		247	865	378
v/s Ratio Prot							c0.09	c0.38		0.09	0.17	
v/s Ratio Perm		c0.21	0.02		c0.28	0.10						0.02
v/c Ratio		0.86	0.09		1.28	0.47	0.70	1.62		0.63	0.70	0.08
Uniform Delay, d1		37.3	30.2		40.4	35.3	42.8	39.4		41.8	35.5	30.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		19.5	0.1		160.2	1.0	8.7	284.0		4.9	2.5	0.1
Delay (s)		56.8	30.3		200.6	36.3	51.5	323.4		46.7	37.9	30.1
Level of Service		E	C		F	D	D	F		D	D	C
Approach Delay (s)		47.7			90.3			294.1			38.4	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	158.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	17.2
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	6	44	103	32	4
Future Vol, veh/h	4	6	44	103	32	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	85	85	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	7	52	121	46	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	274	49	52	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	225	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	716	1020	1554	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	690	1020	1554	-	-	-
Mov Cap-2 Maneuver	690	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1554	-	856	-	-
HCM Lane V/C Ratio	0.033	-	0.014	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	8	13	10	1	2	47	37	23	2	15	0
Future Vol, veh/h	1	8	13	10	1	2	47	37	23	2	15	0
Peak Hour Factor	0.69	0.69	0.69	0.81	0.81	0.81	0.84	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	12	19	12	1	2	56	44	27	2	18	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.4	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	5%	77%	12%
Vol Thru, %	35%	36%	8%	88%
Vol Right, %	21%	59%	15%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	107	22	13	17
LT Vol	47	1	10	2
Through Vol	37	8	1	15
RT Vol	23	13	2	0
Lane Flow Rate	127	32	16	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.141	0.034	0.019	0.023
Departure Headway (Hd)	3.99	3.856	4.276	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	898	918	829	861
Service Time	2.016	1.924	2.346	2.182
HCM Lane V/C Ratio	0.141	0.035	0.019	0.023
HCM Control Delay	7.7	7.1	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	414	1197	499	143	152	360
v/c Ratio	0.88	0.90	0.67	0.22	0.54	0.42
Control Delay	53.4	20.6	24.3	10.7	38.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	20.6	24.3	10.7	38.9	8.2
Queue Length 50th (ft)	208	360	187	25	74	47
Queue Length 95th (ft)	#427	#907	308	63	m124	m99
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	468	1463	887	773	491	860
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.82	0.56	0.18	0.31	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	389	1125	429	123	132	313
Future Volume (vph)	389	1125	429	123	132	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1563	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1563	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.86	0.86	0.87	0.87
Adj. Flow (vph)	414	1197	499	143	152	360
RTOR Reduction (vph)	0	0	0	34	0	111
Lane Group Flow (vph)	414	1197	499	109	152	249
Confl. Peds. (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	20.5	55.5	31.0	31.0	12.4	36.4
Effective Green, g (s)	20.5	55.5	31.0	31.0	12.4	36.4
Actuated g/C Ratio	0.27	0.72	0.40	0.40	0.16	0.47
Clearance Time (s)	4.0	5.7	5.7	5.7	3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	470	1341	749	628	284	747
v/s Ratio Prot	0.23	c0.64	0.27		c0.09	0.16
v/s Ratio Perm				0.07		
v/c Ratio	0.88	0.89	0.67	0.17	0.54	0.33
Uniform Delay, d1	27.1	8.5	18.8	14.8	29.7	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.01	1.10
Incremental Delay, d2	17.3	7.9	2.2	0.1	1.9	0.3
Delay (s)	44.4	16.4	21.1	14.9	32.1	14.3
Level of Service	D	B	C	B	C	B
Approach Delay (s)		23.6	19.7		19.6	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	13.2
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	389	1125	429	123	132	313
Future Volume (veh/h)	389	1125	429	123	132	313
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	1197	499	143	152	360
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.86	0.86	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	438	1279	727	617	354	707
Arrive On Green	0.25	0.69	0.39	0.39	0.20	0.20
Sat Flow, veh/h	1774	1863	1863	1581	1774	1583
Grp Volume(v), veh/h	414	1197	499	143	152	360
Grp Sat Flow(s),veh/h/ln	1774	1863	1863	1581	1774	1583
Q Serve(g_s), s	18.6	45.6	18.1	4.9	6.1	13.2
Cycle Q Clear(g_c), s	18.6	45.6	18.1	4.9	6.1	13.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	438	1279	727	617	354	707
V/C Ratio(X)	0.94	0.94	0.69	0.23	0.43	0.51
Avail Cap(c_a), veh/h	438	1380	727	617	460	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	11.1	20.5	16.5	28.4	16.1
Incr Delay (d2), s/veh	29.4	11.6	2.7	0.2	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	27.1	9.8	2.2	3.0	12.6
LnGrp Delay(d),s/veh	59.4	22.7	23.2	16.7	29.2	16.6
LnGrp LOS	E	C	C	B	C	B
Approach Vol, veh/h		1611	642		512	
Approach Delay, s/veh		32.1	21.8		20.4	
Approach LOS		C	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		61.3		19.7	24.0	37.3		
Change Period (Y+Rc), s		5.7		3.5	4.0	5.7		
Max Green Setting (Gmax), s		60.0		21.0	20.0	30.0		
Max Q Clear Time (g_c+I1), s		47.6		15.2	20.6	20.1		
Green Ext Time (p_c), s		8.0		1.0	0.0	2.7		

Intersection Summary	
HCM 2010 Ctrl Delay	27.5
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	20

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL	SWT	SWR
Lane Configurations														
Traffic Vol, veh/h	77	8	56	50	9	33	25	11	398	44	1	44	286	34
Future Vol, veh/h	77	8	56	50	9	33	25	11	398	44	1	44	286	34
Conflicting Peds, #/hr	1	0	4	4	0	1	0	6	0	1	0	1	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	92	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	12	81	72	13	48	36	16	577	64	1	64	414	49

Major/Minor	Minor1			Minor2			Major1				Major2			
Conflicting Flow All	1059	1313	326	978	1321	239	464	469	0	0	641	642	0	0
Stage 1	714	714	-	575	575	-	-	-	-	-	-	-	-	-
Stage 2	345	599	-	403	746	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	179	157	670	205	155	762	730	1089	-	-	563	939	-	-
Stage 1	388	433	-	470	501	-	-	-	-	-	-	-	-	-
Stage 2	644	489	-	595	419	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	139	135	667	150	134	757	783	783	-	-	925	925	-	-
Mov Cap-2 Maneuver	139	135	-	150	134	-	-	-	-	-	-	-	-	-
Stage 1	362	404	-	436	463	-	-	-	-	-	-	-	-	-
Stage 2	545	452	-	472	391	-	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	115.5	49.3	0.7	1.1
HCM LOS	F	E		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	783	-	-	202	207	925	-	-
HCM Lane V/C Ratio	0.067	-	-	1.012	0.644	0.07	-	-
HCM Control Delay (s)	9.9	-	-	115.5	49.3	9.2	-	-
HCM Lane LOS	A	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	8.9	3.8	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	29	6	317	5	10
Future Vol, veh/h	574	29	6	317	5	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	68	68	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	604	31	9	466	12	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	637	0	1106	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	233	487
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	945	-	230	486
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	620	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	945	-
HCM Lane V/C Ratio	0.101	-	-	0.009	-
HCM Control Delay (s)	16.3	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	579	12	6	311	16	8
Future Vol, veh/h	579	12	6	311	16	8
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	70	70	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	623	13	9	444	27	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1093	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	237	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	947	-	234	482
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	282	-	-	947	-
HCM Lane V/C Ratio	0.142	-	-	0.009	-
HCM Control Delay (s)	19.9	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Intersection Delay, s/veh	64.6
Intersection LOS	F

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	654	10	18	80	18	259
Future Vol, veh/h	654	10	18	80	18	259
Peak Hour Factor	0.91	0.91	0.86	0.86	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	719	11	21	93	24	341
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	97.1	10.9	16.4
HCM LOS	F	B	C

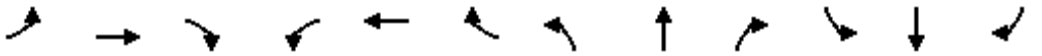
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	18%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	82%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	664	18	259
LT Vol	18	654	18	0
Through Vol	0	0	0	0
RT Vol	80	10	0	259
Lane Flow Rate	114	730	24	341
Geometry Grp	2	2	7	7
Degree of Util (X)	0.192	1.126	0.047	0.567
Departure Headway (Hd)	6.356	5.556	7.484	6.259
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	569	657	481	579
Service Time	4.356	3.556	5.184	3.959
HCM Lane V/C Ratio	0.2	1.111	0.05	0.589
HCM Control Delay	10.9	97.1	10.6	16.8
HCM Lane LOS	B	F	B	C
HCM 95th-tile Q	0.7	22.4	0.1	3.5

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	420	285	312	195	202	616	305	1277	169
v/c Ratio	1.14	0.48	3.09	0.39	0.92	0.89	0.87	1.32	0.34
Control Delay	133.2	7.5	984.1	8.0	97.9	65.7	73.2	189.0	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.2	7.5	984.1	8.0	97.9	65.7	73.2	189.0	16.4
Queue Length 50th (ft)	~406	3	~451	0	168	268	241	~719	39
Queue Length 95th (ft)	#569	61	#411	1	#314	#396	#375	#857	101
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	369	599	101	498	221	695	387	967	496
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.48	3.09	0.39	0.91	0.89	0.79	1.32	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	257	245	22	172	121	182	527	27	299	1251	166
Future Volume (vph)	104	257	245	22	172	121	182	527	27	299	1251	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1836	1557		1852	1583	1770	3509		1770	3539	1533
Flt Permitted		0.79	1.00		0.25	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1478	1557		462	1583	1770	3509		1770	3539	1533
Peak-hour factor, PHF	0.86	0.86	0.86	0.62	0.62	0.62	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	121	299	285	35	277	195	202	586	30	305	1277	169
RTOR Reduction (vph)	0	0	210	0	0	152	0	2	0	0	0	78
Lane Group Flow (vph)	0	420	75	0	312	43	202	614	0	305	1277	91
Confl. Peds. (#/hr)			1	1								1
Confl. Bikes (#/hr)			4						3			7
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		32.0	32.0		28.0	28.0	15.9	25.3		25.5	35.1	35.1
Effective Green, g (s)		32.0	32.0		28.0	28.0	15.9	25.3		25.5	35.1	35.1
Actuated g/C Ratio		0.25	0.25		0.22	0.22	0.12	0.20		0.20	0.27	0.27
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		369	389		101	346	219	693		352	970	420
v/s Ratio Prot							0.11	0.17		c0.17	c0.36	
v/s Ratio Perm		c0.28	0.05		c0.68	0.03						0.06
v/c Ratio		1.14	0.19		3.09	0.12	0.92	0.89		0.87	1.32	0.22
Uniform Delay, d1		48.0	37.8		50.0	40.1	55.4	49.9		49.6	46.5	35.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		90.0	0.2		965.8	0.2	39.8	13.0		19.5	149.8	0.3
Delay (s)		138.0	38.1		1015.8	40.3	95.2	62.9		69.1	196.2	36.1
Level of Service		F	D		F	D	F	E		E	F	D
Approach Delay (s)		97.6			640.6			70.9			158.6	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	192.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	40	11	47	69	3
Future Vol, veh/h	6	40	11	47	69	3
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	56	13	57	85	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	171	88	90	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	819	970	1505	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	810	969	1504	-	-	-
Mov Cap-2 Maneuver	810	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	945	-	-
HCM Lane V/C Ratio	0.009	-	0.068	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	2	23	27	4	3	13	21	21	2	22	1
Future Vol, veh/h	1	2	23	27	4	3	13	21	21	2	22	1
Peak Hour Factor	0.59	0.59	0.95	0.77	0.77	0.77	0.74	0.74	0.74	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	24	35	5	4	18	28	28	3	29	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.5	7.3	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	4%	79%	8%
Vol Thru, %	38%	8%	12%	88%
Vol Right, %	38%	88%	9%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	26	34	25
LT Vol	13	1	27	2
Through Vol	21	2	4	22
RT Vol	21	23	3	1
Lane Flow Rate	74	29	44	33
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.03	0.052	0.038
Departure Headway (Hd)	3.905	3.631	4.25	4.11
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	913	977	838	867
Service Time	1.945	1.687	2.298	2.156
HCM Lane V/C Ratio	0.081	0.03	0.053	0.038
HCM Control Delay	7.3	6.8	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	297	458	975	142	78	492
v/c Ratio	0.96	0.33	0.99	0.17	0.24	0.73
Control Delay	88.5	6.0	54.7	11.7	43.1	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.5	6.0	54.7	11.7	43.1	31.5
Queue Length 50th (ft)	219	102	686	41	50	250
Queue Length 95th (ft)	#377	140	#992	76	m92	m363
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	310	1376	982	835	326	672
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.33	0.99	0.17	0.24	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWU	SWL	SWR
Lane Configurations							
Traffic Volume (vph)	261	403	936	136	7	62	433
Future Volume (vph)	261	403	936	136	7	62	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7		3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1559		1770	1583
Flt Permitted	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1559		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	297	458	975	142	8	70	492
RTOR Reduction (vph)	0	0	0	14	0	0	56
Lane Group Flow (vph)	297	458	975	128	0	78	436
Confl. Peds. (#/hr)				2			
Turn Type	Prot	NA	NA	Perm	Perm	Prot	pt+ov
Protected Phases	5	2	6			4	4 5
Permitted Phases				6	4		
Actuated Green, G (s)	20.0	84.0	60.0	60.0		20.5	44.0
Effective Green, g (s)	20.0	84.0	60.0	60.0		20.5	44.0
Actuated g/C Ratio	0.18	0.74	0.53	0.53		0.18	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7		3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	311	1376	983	822		319	612
v/s Ratio Prot	c0.17	0.25	c0.52				c0.28
v/s Ratio Perm				0.08		0.04	
v/c Ratio	0.95	0.33	0.99	0.16		0.24	0.71
Uniform Delay, d1	46.4	5.1	26.6	13.8		40.0	29.5
Progression Factor	1.00	1.00	1.00	1.00		1.02	1.02
Incremental Delay, d2	38.8	0.1	26.6	0.1		0.4	3.9
Delay (s)	85.2	5.3	53.2	13.9		41.2	34.0
Level of Service	F	A	D	B		D	C
Approach Delay (s)		36.7	48.2			35.0	
Approach LOS		D	D			C	

Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	13.2
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 cannot analyze U-Turning movements.

Intersection	
Int Delay, s/veh	8.3

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations													
Traffic Vol, veh/h	86	26	40	22	10	16	14	32	249	68	67	422	107
Future Vol, veh/h	86	26	40	22	10	16	14	32	249	68	67	422	107
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	80	80	80	80	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	29	44	26	12	19	18	40	311	85	77	485	123

Major/Minor	Minor1			Minor2			Major1				Major2		
Conflicting Flow All	873	1232	198	987	1213	304	608	608	0	0	396	0	0
Stage 1	470	470	-	701	701	-	-	-	-	-	-	-	-
Stage 2	403	762	-	286	512	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	244	176	810	202	181	692	591	966	-	-	1159	-	-
Stage 1	543	558	-	395	439	-	-	-	-	-	-	-	-
Stage 2	595	412	-	697	535	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	201	153	810	147	157	692	802	802	-	-	1159	-	-
Mov Cap-2 Maneuver	201	153	-	147	157	-	-	-	-	-	-	-	-
Stage 1	504	518	-	367	410	-	-	-	-	-	-	-	-
Stage 2	525	385	-	578	496	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	50.8	29.4	1.2	0.9
HCM LOS	F	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	802	-	-	235	203	1159	-	-
HCM Lane V/C Ratio	0.072	-	-	0.711	0.278	0.066	-	-
HCM Control Delay (s)	9.8	-	-	50.8	29.4	8.3	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	4.7	1.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	255	5	7	697	26	8
Future Vol, veh/h	255	5	7	697	26	8
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	95	95	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	271	5	7	734	34	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	279	0	1025	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	748	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1284	-	260	762
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	257	760
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	-	-	1280	-
HCM Lane V/C Ratio	0.145	-	-	0.006	-
HCM Control Delay (s)	18.8	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	257	11	5	672	32	7
Future Vol, veh/h	257	11	5	672	32	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	94	94	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	12	5	715	46	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	294	0	1013	288
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1268	-	265	751
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1268	-	263	751
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	1268	-
HCM Lane V/C Ratio	0.187	-	-	0.004	-
HCM Control Delay (s)	19.8	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Intersection Delay, s/veh	32.4
Intersection LOS	D

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	251	6	16	39	60	658
Future Vol, veh/h	251	6	16	39	60	658
Peak Hour Factor	0.87	0.87	0.68	0.68	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	7	24	57	63	685
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	15.1	10	41.7
HCM LOS	C	A	E

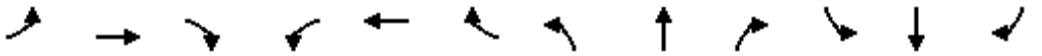
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	29%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	71%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	257	60	658
LT Vol	16	251	60	0
Through Vol	0	0	0	0
RT Vol	39	6	0	658
Lane Flow Rate	81	295	62	685
Geometry Grp	2	2	7	7
Degree of Util (X)	0.135	0.501	0.108	0.952
Departure Headway (Hd)	6.024	6.106	6.21	4.999
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	594	591	578	727
Service Time	4.069	4.143	3.941	2.729
HCM Lane V/C Ratio	0.136	0.499	0.107	0.942
HCM Control Delay	10	15.1	9.7	44.6
HCM Lane LOS	A	C	A	E
HCM 95th-tile Q	0.5	2.8	0.4	14

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	277	145	250	511	162	1342	155	605	118
v/c Ratio	0.86	0.29	1.28	0.74	0.70	1.61	0.63	0.70	0.25
Control Delay	64.6	7.5	197.3	14.0	60.8	311.4	54.8	40.7	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.6	7.5	197.3	14.0	60.8	311.4	54.8	40.7	7.2
Queue Length 50th (ft)	177	0	~221	33	105	~693	101	200	0
Queue Length 95th (ft)	#272	31	#417	170	#198	#887	162	245	37
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	349	524	195	690	276	994	380	1210	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.28	1.28	0.74	0.59	1.35	0.41	0.50	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	104	112	11	226	485	149	1215	19	132	514	100
Future Volume (vph)	109	104	112	11	226	485	149	1215	19	132	514	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1816	1583		1858	1563	1770	3530		1770	3539	1549
Flt Permitted		0.71	1.00		0.49	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1327	1583		907	1563	1770	3530		1770	3539	1549
Peak-hour factor, PHF	0.77	0.77	0.77	0.95	0.95	0.95	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	142	135	145	12	238	511	162	1321	21	155	605	118
RTOR Reduction (vph)	0	0	110	0	0	355	0	1	0	0	0	89
Lane Group Flow (vph)	0	277	35	0	250	156	162	1341	0	155	605	29
Confl. Bikes (#/hr)						1			2			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		25.1	25.1		22.2	22.2	13.6	24.3		14.4	25.3	25.3
Effective Green, g (s)		25.1	25.1		22.2	22.2	13.6	24.3		14.4	25.3	25.3
Actuated g/C Ratio		0.24	0.24		0.22	0.22	0.13	0.24		0.14	0.25	0.25
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		322	385		195	336	233	831		246	867	379
v/s Ratio Prot							c0.09	c0.38		0.09	0.17	
v/s Ratio Perm		c0.21	0.02		c0.28	0.10						0.02
v/c Ratio		0.86	0.09		1.28	0.46	0.70	1.61		0.63	0.70	0.08
Uniform Delay, d1		37.4	30.2		40.5	35.3	42.8	39.5		41.9	35.5	30.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		20.2	0.1		160.2	1.0	8.7	281.9		5.2	2.5	0.1
Delay (s)		57.6	30.3		200.7	36.3	51.5	321.3		47.1	37.9	30.0
Level of Service		E	C		F	D	D	F		D	D	C
Approach Delay (s)		48.2			90.3			292.3			38.5	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	157.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	17.2
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	6	44	104	34	4
Future Vol, veh/h	4	6	44	104	34	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	85	85	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	7	52	122	49	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	278	52	55	0	-	0
Stage 1	52	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	712	1016	1550	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	1016	1550	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1550	-	852	-	-
HCM Lane V/C Ratio	0.033	-	0.014	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	8	13	10	1	2	47	38	23	2	17	0
Future Vol, veh/h	1	8	13	10	1	2	47	38	23	2	17	0
Peak Hour Factor	0.69	0.69	0.69	0.81	0.81	0.81	0.84	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	12	19	12	1	2	56	45	27	2	20	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.4	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	5%	77%	11%
Vol Thru, %	35%	36%	8%	89%
Vol Right, %	21%	59%	15%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	22	13	19
LT Vol	47	1	10	2
Through Vol	38	8	1	17
RT Vol	23	13	2	0
Lane Flow Rate	129	32	16	22
Geometry Grp	1	1	1	1
Degree of Util (X)	0.143	0.034	0.019	0.026
Departure Headway (Hd)	3.992	3.861	4.282	4.134
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	897	916	827	861
Service Time	2.019	1.934	2.355	2.181
HCM Lane V/C Ratio	0.144	0.035	0.019	0.026
HCM Control Delay	7.7	7.1	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	414	1214	505	145	156	368
v/c Ratio	0.92	0.90	0.65	0.21	0.55	0.43
Control Delay	59.3	21.4	23.7	10.6	39.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	21.4	23.7	10.6	39.6	8.7
Queue Length 50th (ft)	209	378	191	26	76	51
Queue Length 95th (ft)	#432	#938	316	65	m127	m105
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	451	1425	855	748	474	840
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.85	0.59	0.19	0.33	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	389	1141	434	125	136	320
Future Volume (vph)	389	1141	434	125	136	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1563	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1563	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.86	0.86	0.87	0.87
Adj. Flow (vph)	414	1214	505	145	156	368
RTOR Reduction (vph)	0	0	0	33	0	112
Lane Group Flow (vph)	414	1214	505	112	156	256
Confl. Peds. (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	20.3	57.4	33.1	33.1	12.7	36.5
Effective Green, g (s)	20.3	57.4	33.1	33.1	12.7	36.5
Actuated g/C Ratio	0.26	0.72	0.42	0.42	0.16	0.46
Clearance Time (s)	4.0	5.7	5.7	5.7	3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	453	1348	777	652	283	728
v/s Ratio Prot	0.23	c0.65	0.27		c0.09	0.16
v/s Ratio Perm				0.07		
v/c Ratio	0.91	0.90	0.65	0.17	0.55	0.35
Uniform Delay, d1	28.7	8.7	18.5	14.5	30.7	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.01	1.10
Incremental Delay, d2	22.7	8.5	1.9	0.1	2.3	0.3
Delay (s)	51.4	17.2	20.4	14.6	33.4	15.4
Level of Service	D	B	C	B	C	B
Approach Delay (s)		25.9	19.1		20.8	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	13.2
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	389	1141	434	125	136	320
Future Volume (veh/h)	389	1141	434	125	136	320
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	1214	505	145	156	368
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.86	0.86	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	425	1279	743	631	361	701
Arrive On Green	0.24	0.69	0.40	0.40	0.20	0.20
Sat Flow, veh/h	1774	1863	1863	1581	1774	1583
Grp Volume(v), veh/h	414	1214	505	145	156	368
Grp Sat Flow(s),veh/h/ln	1774	1863	1863	1581	1774	1583
Q Serve(g_s), s	19.3	49.0	18.7	5.1	6.4	14.1
Cycle Q Clear(g_c), s	19.3	49.0	18.7	5.1	6.4	14.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	425	1279	743	631	361	701
V/C Ratio(X)	0.97	0.95	0.68	0.23	0.43	0.52
Avail Cap(c_a), veh/h	425	1339	743	631	446	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	11.8	20.7	16.6	29.0	16.9
Incr Delay (d2), s/veh	36.8	14.0	2.5	0.2	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	29.6	10.1	2.2	3.2	13.4
LnGrp Delay(d),s/veh	68.2	25.8	23.2	16.8	29.9	17.5
LnGrp LOS	E	C	C	B	C	B
Approach Vol, veh/h		1628	650		524	
Approach Delay, s/veh		36.6	21.8		21.2	
Approach LOS		D	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		63.0		20.5	24.0	39.0		
Change Period (Y+Rc), s		5.7		3.5	4.0	5.7		
Max Green Setting (Gmax), s		60.0		21.0	20.0	30.0		
Max Q Clear Time (g_c+I1), s		51.0		16.1	21.3	20.7		
Green Ext Time (p_c), s		6.3		0.9	0.0	2.6		

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	19.3

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL	SWT	SWR
Lane Configurations														
Traffic Vol, veh/h	77	8	56	42	9	27	25	9	402	44	1	45	298	32
Future Vol, veh/h	77	8	56	42	9	27	25	9	402	44	1	45	298	32
Conflicting Peds, #/hr	1	0	4	4	0	1	0	6	0	1	0	1	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	92	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	12	81	61	13	39	36	13	583	64	1	65	432	46

Major/Minor	Minor1			Minor2			Major1				Major2			
Conflicting Flow All	1070	1330	329	993	1339	246	478	484	0	0	646	648	0	0
Stage 1	714	714	-	593	593	-	-	-	-	-	-	-	-	-
Stage 2	356	616	-	400	746	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	175	153	667	200	152	754	715	1075	-	-	559	934	-	-
Stage 1	388	433	-	459	492	-	-	-	-	-	-	-	-	-
Stage 2	634	480	-	597	419	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	138	132	664	146	131	749	761	761	-	-	921	921	-	-
Mov Cap-2 Maneuver	138	132	-	146	131	-	-	-	-	-	-	-	-	-
Stage 1	363	405	-	427	454	-	-	-	-	-	-	-	-	-
Stage 2	541	443	-	474	392	-	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	117.3	44.5	0.7	1.1
HCM LOS	F	E		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	761	-	-	201	199	921	-	-
HCM Lane V/C Ratio	0.065	-	-	1.017	0.568	0.072	-	-
HCM Control Delay (s)	10.1	-	-	117.3	44.5	9.2	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	9	3.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	29	6	317	5	10
Future Vol, veh/h	574	29	6	317	5	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	68	68	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	604	31	9	466	12	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	637	0	1106	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	233	487
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	945	-	230	486
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	620	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	945	-
HCM Lane V/C Ratio	0.101	-	-	0.009	-
HCM Control Delay (s)	16.3	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	579	12	6	311	16	8
Future Vol, veh/h	579	12	6	311	16	8
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	70	70	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	623	13	9	444	27	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1093	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	237	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	947	-	234	482
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	282	-	-	947	-
HCM Lane V/C Ratio	0.142	-	-	0.009	-
HCM Control Delay (s)	19.9	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Intersection Delay, s/veh	64.5
Intersection LOS	F

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	654	10	18	78	18	259
Future Vol, veh/h	654	10	18	78	18	259
Peak Hour Factor	0.91	0.91	0.86	0.86	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	719	11	21	91	24	341
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	96.7	10.8	16.4
HCM LOS	F	B	C

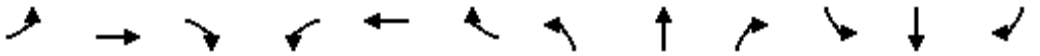
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	19%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	81%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	664	18	259
LT Vol	18	654	18	0
Through Vol	0	0	0	0
RT Vol	78	10	0	259
Lane Flow Rate	112	730	24	341
Geometry Grp	2	2	7	7
Degree of Util (X)	0.188	1.125	0.047	0.566
Departure Headway (Hd)	6.357	5.548	7.477	6.252
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	657	482	579
Service Time	4.357	3.548	5.177	3.952
HCM Lane V/C Ratio	0.197	1.111	0.05	0.589
HCM Control Delay	10.8	96.7	10.5	16.8
HCM Lane LOS	B	F	B	C
HCM 95th-tile Q	0.7	22.4	0.1	3.5

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	420	285	312	195	202	629	305	1293	169
v/c Ratio	1.14	0.48	3.09	0.39	0.92	0.91	0.87	1.34	0.34
Control Delay	133.2	7.5	984.1	8.0	97.9	67.9	73.2	195.8	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.2	7.5	984.1	8.0	97.9	67.9	73.2	195.8	16.6
Queue Length 50th (ft)	~406	3	~451	0	168	275	241	~733	40
Queue Length 95th (ft)	#569	61	#411	1	#314	#407	#375	#872	102
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	369	599	101	498	221	695	387	967	496
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.48	3.09	0.39	0.91	0.91	0.79	1.34	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	257	245	22	172	121	182	539	27	299	1267	166
Future Volume (vph)	104	257	245	22	172	121	182	539	27	299	1267	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1836	1557		1852	1583	1770	3510		1770	3539	1533
Flt Permitted		0.79	1.00		0.25	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1478	1557		462	1583	1770	3510		1770	3539	1533
Peak-hour factor, PHF	0.86	0.86	0.86	0.62	0.62	0.62	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	121	299	285	35	277	195	202	599	30	305	1293	169
RTOR Reduction (vph)	0	0	210	0	0	152	0	2	0	0	0	77
Lane Group Flow (vph)	0	420	75	0	312	43	202	627	0	305	1293	92
Confl. Peds. (#/hr)			1	1								1
Confl. Bikes (#/hr)			4						3			7
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		32.0	32.0		28.0	28.0	15.9	25.3		25.5	35.1	35.1
Effective Green, g (s)		32.0	32.0		28.0	28.0	15.9	25.3		25.5	35.1	35.1
Actuated g/C Ratio		0.25	0.25		0.22	0.22	0.12	0.20		0.20	0.27	0.27
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		369	389		101	346	219	693		352	970	420
v/s Ratio Prot							0.11	0.18		c0.17	c0.37	
v/s Ratio Perm		c0.28	0.05		c0.68	0.03						0.06
v/c Ratio		1.14	0.19		3.09	0.12	0.92	0.90		0.87	1.33	0.22
Uniform Delay, d1		48.0	37.8		50.0	40.1	55.4	50.2		49.6	46.5	35.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		90.0	0.2		965.8	0.2	39.8	15.2		19.5	156.9	0.3
Delay (s)		138.0	38.1		1015.8	40.3	95.2	65.4		69.1	203.4	36.1
Level of Service		F	D		F	D	F	E		E	F	D
Approach Delay (s)		97.6			640.6			72.6			164.2	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	195.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	40	11	45	68	3
Future Vol, veh/h	6	40	11	45	68	3
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	56	13	55	84	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	168	87	89	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	822	971	1506	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	813	970	1505	-	-	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1505	-	946	-	-
HCM Lane V/C Ratio	0.009	-	0.068	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	2	23	27	4	3	13	19	21	2	21	1
Future Vol, veh/h	1	2	23	27	4	3	13	19	21	2	21	1
Peak Hour Factor	0.59	0.59	0.95	0.77	0.77	0.77	0.74	0.74	0.74	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	24	35	5	4	18	26	28	3	28	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.5	7.3	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	4%	79%	8%
Vol Thru, %	36%	8%	12%	88%
Vol Right, %	40%	88%	9%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	26	34	24
LT Vol	13	1	27	2
Through Vol	19	2	4	21
RT Vol	21	23	3	1
Lane Flow Rate	72	29	44	32
Geometry Grp	1	1	1	1
Degree of Util (X)	0.078	0.029	0.052	0.037
Departure Headway (Hd)	3.896	3.623	4.242	4.108
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	916	979	840	868
Service Time	1.935	1.679	2.289	2.151
HCM Lane V/C Ratio	0.079	0.03	0.052	0.037
HCM Control Delay	7.3	6.8	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	294	469	994	144	76	498
v/c Ratio	0.95	0.34	1.01	0.17	0.24	0.74
Control Delay	86.8	6.1	59.8	11.8	42.7	32.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.8	6.1	59.8	11.8	42.7	32.4
Queue Length 50th (ft)	216	105	~738	42	48	258
Queue Length 95th (ft)	#372	145	#1022	78	m90	m375
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	310	1374	981	835	326	668
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.34	1.01	0.17	0.23	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWU	SWL	SWR
Lane Configurations							
Traffic Volume (vph)	259	413	954	138	7	60	438
Future Volume (vph)	259	413	954	138	7	60	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7		3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1559		1770	1583
Flt Permitted	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1559		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	294	469	994	144	8	68	498
RTOR Reduction (vph)	0	0	0	14	0	0	53
Lane Group Flow (vph)	294	469	994	130	0	76	445
Confl. Peds. (#/hr)				2			
Turn Type	Prot	NA	NA	Perm	Perm	Prot	pt+ov
Protected Phases	5	2	6			4	4 5
Permitted Phases				6	4		
Actuated Green, G (s)	20.0	84.0	60.0	60.0		20.7	44.2
Effective Green, g (s)	20.0	84.0	60.0	60.0		20.7	44.2
Actuated g/C Ratio	0.18	0.74	0.53	0.53		0.18	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7		3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	310	1373	981	821		321	614
v/s Ratio Prot	c0.17	0.25	c0.53				c0.28
v/s Ratio Perm				0.08		0.04	
v/c Ratio	0.95	0.34	1.01	0.16		0.24	0.72
Uniform Delay, d1	46.4	5.2	27.0	13.9		39.8	29.7
Progression Factor	1.00	1.00	1.00	1.00		1.02	1.02
Incremental Delay, d2	37.1	0.1	32.1	0.1		0.4	4.2
Delay (s)	83.6	5.4	59.0	14.0		40.9	34.4
Level of Service	F	A	E	B		D	C
Approach Delay (s)		35.5	53.3			35.2	
Approach LOS		D	D			D	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	13.2
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 cannot analyze U-Turning movements.

Intersection	
Int Delay, s/veh	7.7

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations													
Traffic Vol, veh/h	86	26	40	16	10	12	12	27	256	68	68	423	99
Future Vol, veh/h	86	26	40	16	10	12	12	27	256	68	68	423	99
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	80	80	80	80	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	29	44	19	12	14	15	34	320	85	78	486	114

Major/Minor	Minor1			Minor2			Major1				Major2		
Conflicting Flow All	866	1217	203	972	1202	300	600	600	0	0	405	0	0
Stage 1	461	461	-	699	699	-	-	-	-	-	-	-	-
Stage 2	405	756	-	273	503	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	247	180	804	207	183	696	598	973	-	-	1150	-	-
Stage 1	550	564	-	397	440	-	-	-	-	-	-	-	-
Stage 2	593	414	-	710	540	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	207	158	804	153	160	696	810	810	-	-	1150	-	-
Mov Cap-2 Maneuver	207	158	-	153	160	-	-	-	-	-	-	-	-
Stage 1	516	530	-	373	410	-	-	-	-	-	-	-	-
Stage 2	526	386	-	597	507	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	48	27.3	1	1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	810	-	-	241	206	1150	-	-
HCM Lane V/C Ratio	0.06	-	-	0.693	0.217	0.068	-	-
HCM Control Delay (s)	9.7	-	-	48	27.3	8.4	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	4.5	0.8	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	255	5	7	697	26	8
Future Vol, veh/h	255	5	7	697	26	8
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	95	95	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	271	5	7	734	34	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	279	0	1025	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	748	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1284	-	260	762
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	257	760
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	-	-	1280	-
HCM Lane V/C Ratio	0.145	-	-	0.006	-
HCM Control Delay (s)	18.8	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	257	11	5	672	32	7
Future Vol, veh/h	257	11	5	672	32	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	94	94	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	12	5	715	46	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	294	0	1013	288
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1268	-	265	751
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1268	-	263	751
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	1268	-
HCM Lane V/C Ratio	0.187	-	-	0.004	-
HCM Control Delay (s)	19.8	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Intersection Delay, s/veh	32.4
Intersection LOS	D

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	251	6	16	38	58	658
Future Vol, veh/h	251	6	16	38	58	658
Peak Hour Factor	0.87	0.87	0.68	0.68	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	7	24	56	60	685
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	15.1	10	41.6
HCM LOS	C	A	E

Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	30%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	70%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	257	58	658
LT Vol	16	251	58	0
Through Vol	0	0	0	0
RT Vol	38	6	0	658
Lane Flow Rate	79	295	60	685
Geometry Grp	2	2	7	7
Degree of Util (X)	0.133	0.5	0.104	0.951
Departure Headway (Hd)	6.025	6.099	6.207	4.995
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	594	591	578	727
Service Time	4.07	4.138	3.936	2.724
HCM Lane V/C Ratio	0.133	0.499	0.104	0.942
HCM Control Delay	10	15.1	9.7	44.4
HCM Lane LOS	A	C	A	E
HCM 95th-tile Q	0.5	2.8	0.3	13.9

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	277	145	250	511	162	1366	155	614	118
v/c Ratio	0.86	0.29	1.29	0.74	0.70	1.63	0.63	0.70	0.25
Control Delay	65.1	7.5	200.0	14.0	61.2	319.6	54.9	40.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	7.5	200.0	14.0	61.2	319.6	54.9	40.8	7.2
Queue Length 50th (ft)	178	0	~222	33	105	~712	101	204	0
Queue Length 95th (ft)	#274	30	#419	170	#200	#907	162	248	37
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	348	523	194	689	275	991	379	1206	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.28	1.29	0.74	0.59	1.38	0.41	0.51	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	104	112	11	226	485	149	1237	19	132	522	100
Future Volume (vph)	109	104	112	11	226	485	149	1237	19	132	522	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1816	1583		1858	1563	1770	3530		1770	3539	1549
Flt Permitted		0.71	1.00		0.49	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1327	1583		906	1563	1770	3530		1770	3539	1549
Peak-hour factor, PHF	0.77	0.77	0.77	0.95	0.95	0.95	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	142	135	145	12	238	511	162	1345	21	155	614	118
RTOR Reduction (vph)	0	0	110	0	0	355	0	1	0	0	0	89
Lane Group Flow (vph)	0	277	35	0	250	156	162	1365	0	155	614	29
Confl. Bikes (#/hr)						1			2			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		25.1	25.1		22.2	22.2	13.6	24.5		14.4	25.5	25.5
Effective Green, g (s)		25.1	25.1		22.2	22.2	13.6	24.5		14.4	25.5	25.5
Actuated g/C Ratio		0.24	0.24		0.21	0.21	0.13	0.24		0.14	0.25	0.25
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		322	384		194	335	232	836		246	872	382
v/s Ratio Prot							c0.09	c0.39		0.09	0.17	
v/s Ratio Perm		c0.21	0.02		c0.28	0.10						0.02
v/c Ratio		0.86	0.09		1.29	0.47	0.70	1.63		0.63	0.70	0.08
Uniform Delay, d1		37.5	30.3		40.6	35.4	42.9	39.5		42.0	35.5	29.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		20.2	0.1		162.9	1.0	8.8	290.3		5.2	2.6	0.1
Delay (s)		57.7	30.4		203.5	36.5	51.8	329.8		47.2	38.1	30.0
Level of Service		E	C		F	D	D	F		D	D	C
Approach Delay (s)		48.3			91.3			300.3			38.6	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	162.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	103.4	Sum of lost time (s)	17.2
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	6	44	103	32	4
Future Vol, veh/h	4	6	44	103	32	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	85	85	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	7	52	121	46	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	274	49	52	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	225	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	716	1020	1554	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	690	1020	1554	-	-	-
Mov Cap-2 Maneuver	690	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1554	-	856	-	-
HCM Lane V/C Ratio	0.033	-	0.014	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	8	13	10	1	2	47	37	23	2	15	0
Future Vol, veh/h	1	8	13	10	1	2	47	37	23	2	15	0
Peak Hour Factor	0.69	0.69	0.69	0.81	0.81	0.81	0.84	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	12	19	12	1	2	56	44	27	2	18	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.4	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	5%	77%	12%
Vol Thru, %	35%	36%	8%	88%
Vol Right, %	21%	59%	15%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	107	22	13	17
LT Vol	47	1	10	2
Through Vol	37	8	1	15
RT Vol	23	13	2	0
Lane Flow Rate	127	32	16	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.141	0.034	0.019	0.023
Departure Headway (Hd)	3.99	3.856	4.276	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	898	918	829	861
Service Time	2.016	1.924	2.346	2.182
HCM Lane V/C Ratio	0.141	0.035	0.019	0.023
HCM Control Delay	7.7	7.1	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	389	1141	434	123	136	321
Future Volume (vph)	389	1141	434	123	136	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375			50	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.99		
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1863	1562	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				56		207
Link Speed (mph)		30	30		30	
Link Distance (ft)		1644	1836		348	
Travel Time (s)		37.4	41.7		7.9	
Confl. Peds. (#/hr)				1		
Peak Hour Factor	0.94	0.94	0.86	0.86	0.87	0.87
Adj. Flow (vph)	414	1214	505	143	156	369
Shared Lane Traffic (%)						
Lane Group Flow (vph)	414	1214	505	143	156	369
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	0		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Detector Phase	5	2	6	6	4	4 5
Switch Phase						
Minimum Initial (s)	4.0	8.0	8.0	8.0	4.0	
Minimum Split (s)	8.0	13.7	26.7	26.7	24.5	
Total Split (s)	24.0	65.7	35.7	35.7	24.5	
Total Split (%)	26.6%	72.8%	39.6%	39.6%	27.2%	
Maximum Green (s)	20.0	60.0	30.0	30.0	21.0	
Yellow Time (s)	3.5	4.7	4.7	4.7	3.0	
All-Red Time (s)	0.5	1.0	1.0	1.0	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.7	5.7	5.7	3.5	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	Min	None	
Walk Time (s)			6.0	6.0	6.0	
Flash Dont Walk (s)			15.0	15.0	15.0	
Pedestrian Calls (#/hr)			0	0	0	
Act Effct Green (s)	20.3	57.4	33.1	33.1	12.7	37.1
Actuated g/C Ratio	0.26	0.72	0.42	0.42	0.16	0.47
v/c Ratio	0.92	0.90	0.65	0.21	0.55	0.44
Control Delay	59.4	21.4	23.8	10.7	39.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	21.4	23.8	10.7	39.6	8.7
LOS	E	C	C	B	D	A
Approach Delay		31.1	20.9		17.9	
Approach LOS		C	C		B	
90th %ile Green (s)	20.0	60.0	36.0	36.0	20.0	
90th %ile Term Code	Max	Max	Hold	Hold	Gap	
70th %ile Green (s)	20.0	60.0	36.0	36.0	14.4	
70th %ile Term Code	Max	Max	Hold	Hold	Gap	
50th %ile Green (s)	20.0	60.0	36.0	36.0	12.4	
50th %ile Term Code	Max	Max	Hold	Hold	Gap	
30th %ile Green (s)	20.0	60.0	36.0	36.0	10.4	
30th %ile Term Code	Max	Max	Hold	Hold	Gap	
10th %ile Green (s)	20.0	46.5	22.5	22.5	7.7	
10th %ile Term Code	Max	Gap	Hold	Hold	Gap	
Stops (vph)	313	760	330	46	119	93
Fuel Used(gal)	15	33	10	2	2	2
CO Emissions (g/hr)	1015	2300	709	160	148	136
NOx Emissions (g/hr)	197	447	138	31	29	27
VOC Emissions (g/hr)	235	533	164	37	34	32
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	209	378	191	25	76	51
Queue Length 95th (ft)	#433	#940	316	64	m128	m105
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Base Capacity (vph)	451	1425	855	747	473	840
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.85	0.59	0.19	0.33	0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 90.2			
Actuated Cycle Length: 79.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 26.2		Intersection LOS: C	
Intersection Capacity Utilization 75.7%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 89.2			
70th %ile Actuated Cycle: 83.6			
50th %ile Actuated Cycle: 81.6			
30th %ile Actuated Cycle: 79.6			
10th %ile Actuated Cycle: 63.4			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Skyline Blvd & San Bruno Ave

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	389	1141	434	123	136	321
Future Volume (vph)	389	1141	434	123	136	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1563	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1563	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.86	0.86	0.87	0.87
Adj. Flow (vph)	414	1214	505	143	156	369
RTOR Reduction (vph)	0	0	0	33	0	112
Lane Group Flow (vph)	414	1214	505	110	156	257
Confl. Peds. (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	20.3	57.4	33.1	33.1	12.7	36.5
Effective Green, g (s)	20.3	57.4	33.1	33.1	12.7	36.5
Actuated g/C Ratio	0.26	0.72	0.42	0.42	0.16	0.46
Clearance Time (s)	4.0	5.7	5.7	5.7	3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	453	1348	777	652	283	728
v/s Ratio Prot	0.23	c0.65	0.27		c0.09	0.16
v/s Ratio Perm				0.07		
v/c Ratio	0.91	0.90	0.65	0.17	0.55	0.35
Uniform Delay, d1	28.7	8.7	18.5	14.5	30.7	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.01	1.10
Incremental Delay, d2	22.7	8.5	1.9	0.1	2.3	0.3
Delay (s)	51.4	17.2	20.4	14.6	33.4	15.4
Level of Service	D	B	C	B	C	B
Approach Delay (s)		25.9	19.1		20.8	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	13.2
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	389	1141	434	123	136	321
Future Volume (veh/h)	389	1141	434	123	136	321
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	1214	505	143	156	369
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.86	0.86	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	425	1278	743	631	361	701
Arrive On Green	0.24	0.69	0.40	0.40	0.20	0.20
Sat Flow, veh/h	1774	1863	1863	1581	1774	1583
Grp Volume(v), veh/h	414	1214	505	143	156	369
Grp Sat Flow(s),veh/h/ln	1774	1863	1863	1581	1774	1583
Q Serve(g_s), s	19.4	49.1	18.7	5.0	6.4	14.1
Cycle Q Clear(g_c), s	19.4	49.1	18.7	5.0	6.4	14.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	425	1278	743	631	361	701
V/C Ratio(X)	0.98	0.95	0.68	0.23	0.43	0.53
Avail Cap(c_a), veh/h	425	1337	743	631	446	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	11.8	20.7	16.6	29.0	16.9
Incr Delay (d2), s/veh	37.1	14.1	2.5	0.2	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	29.6	10.1	2.2	3.2	13.4
LnGrp Delay(d),s/veh	68.6	25.9	23.2	16.8	29.9	17.5
LnGrp LOS	E	C	C	B	C	B
Approach Vol, veh/h		1628	648		525	
Approach Delay, s/veh		36.7	21.8		21.2	
Approach LOS		D	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		63.1		20.5	24.0	39.1		
Change Period (Y+Rc), s		5.7		3.5	4.0	5.7		
Max Green Setting (Gmax), s		60.0		21.0	20.0	30.0		
Max Q Clear Time (g_c+I1), s		51.1		16.1	21.4	20.7		
Green Ext Time (p_c), s		6.3		0.9	0.0	2.6		

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	21.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL	SWT	SWR
Lane Configurations														
Traffic Vol, veh/h	77	8	56	49	10	33	25	11	402	44	1	45	298	35
Future Vol, veh/h	77	8	56	49	10	33	25	11	402	44	1	45	298	35
Conflicting Peds, #/hr	1	0	4	4	0	1	0	6	0	1	0	1	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	92	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	12	81	71	14	48	36	16	583	64	1	65	432	51

Major/Minor	Minor1			Minor2			Major1				Major2			
Conflicting Flow All	1076	1341	329	1002	1348	249	483	489	0	0	646	648	0	0
Stage 1	720	720	-	596	596	-	-	-	-	-	-	-	-	-
Stage 2	356	621	-	406	752	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	174	151	667	197	150	751	710	1070	-	-	559	934	-	-
Stage 1	385	430	-	457	490	-	-	-	-	-	-	-	-	-
Stage 2	634	477	-	593	416	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	133	130	664	143	129	746	763	763	-	-	921	921	-	-
Mov Cap-2 Maneuver	133	130	-	143	129	-	-	-	-	-	-	-	-	-
Stage 1	358	400	-	424	452	-	-	-	-	-	-	-	-	-
Stage 2	533	440	-	469	387	-	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	128.2	54.1	0.8	1.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	763	-	-	195	198	921	-	-
HCM Lane V/C Ratio	0.068	-	-	1.048	0.673	0.072	-	-
HCM Control Delay (s)	10.1	-	-	128.2	54.1	9.2	-	-
HCM Lane LOS	B	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	9.4	4.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	29	6	317	5	10
Future Vol, veh/h	574	29	6	317	5	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	68	68	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	604	31	9	466	12	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	637	0	1106	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	233	487
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	945	-	230	486
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	620	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	945	-
HCM Lane V/C Ratio	0.101	-	-	0.009	-
HCM Control Delay (s)	16.3	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	579	12	6	311	16	8
Future Vol, veh/h	579	12	6	311	16	8
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	70	70	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	623	13	9	444	27	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1093	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	237	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	947	-	234	482
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.9
HCM LOS			C

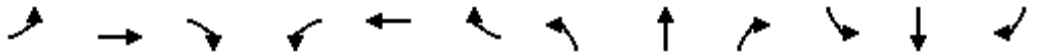
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	282	-	-	947	-
HCM Lane V/C Ratio	0.142	-	-	0.009	-
HCM Control Delay (s)	19.9	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Intersection Delay, s/veh	64.6
Intersection LOS	F

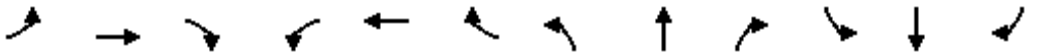
Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	654	10	18	80	18	259
Future Vol, veh/h	654	10	18	80	18	259
Peak Hour Factor	0.91	0.91	0.86	0.86	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	719	11	21	93	24	341
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	97.1	10.9	16.4
HCM LOS	F	B	C

Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	18%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	82%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	664	18	259
LT Vol	18	654	18	0
Through Vol	0	0	0	0
RT Vol	80	10	0	259
Lane Flow Rate	114	730	24	341
Geometry Grp	2	2	7	7
Degree of Util (X)	0.192	1.126	0.047	0.567
Departure Headway (Hd)	6.356	5.556	7.484	6.259
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	569	657	481	579
Service Time	4.356	3.556	5.184	3.959
HCM Lane V/C Ratio	0.2	1.111	0.05	0.589
HCM Control Delay	10.9	97.1	10.6	16.8
HCM Lane LOS	B	F	B	C
HCM 95th-tile Q	0.7	22.4	0.1	3.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	257	245	22	172	121	184	551	27	299	1261	166
Future Volume (vph)	104	257	245	22	172	121	184	551	27	299	1261	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	275		0	550		0
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98					1.00				0.97
Frt			0.850			0.850		0.993				0.850
Flt Protected		0.986			0.994		0.950			0.950		
Satd. Flow (prot)	0	1837	1583	0	1852	1583	1770	3510	0	1770	3539	1583
Flt Permitted		0.793			0.248		0.950			0.950		
Satd. Flow (perm)	0	1477	1557	0	462	1583	1770	3510	0	1770	3539	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			280			195		3				106
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		283			219			1022			1086	
Travel Time (s)		6.4			5.0			23.2			24.7	
Confl. Peds. (#/hr)			1	1								1
Confl. Bikes (#/hr)			4						3			7
Peak Hour Factor	0.86	0.86	0.86	0.62	0.62	0.62	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	121	299	285	35	277	195	204	612	30	305	1287	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	420	285	0	312	195	204	642	0	305	1287	169
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

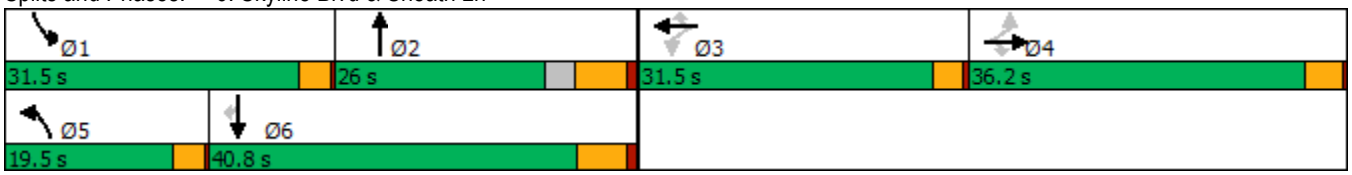


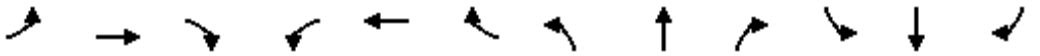
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Detector Phase	4	4	4	3	3	3	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	10.0		6.0	10.0	10.0
Minimum Split (s)	31.2	31.2	31.2	9.5	9.5	9.5	9.5	16.0		9.5	30.8	30.8
Total Split (s)	36.2	36.2	36.2	31.5	31.5	31.5	19.5	26.0		31.5	40.8	40.8
Total Split (%)	28.3%	28.3%	28.3%	24.6%	24.6%	24.6%	15.2%	20.3%		24.6%	31.9%	31.9%
Maximum Green (s)	32.0	32.0	32.0	28.0	28.0	28.0	16.0	20.0		28.0	35.0	35.0
Yellow Time (s)	3.7	3.7	3.7	3.0	3.0	3.0	3.0	5.0		3.0	4.8	4.8
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0		0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	Min
Walk Time (s)	7.0	7.0	7.0								7.0	7.0
Flash Dont Walk (s)	20.0	20.0	20.0								18.0	18.0
Pedestrian Calls (#/hr)	0	0	0								0	0
Act Effct Green (s)		32.0	32.0		28.0	28.0	16.0	25.3		25.5	35.0	35.0
Actuated g/C Ratio		0.25	0.25		0.22	0.22	0.12	0.20		0.20	0.27	0.27
v/c Ratio		1.14	0.48		3.09	0.39	0.92	0.92		0.87	1.33	0.34
Control Delay		133.4	7.5		984.1	8.0	98.9	70.2		73.2	193.5	16.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		133.4	7.5		984.1	8.0	98.9	70.2		73.2	193.5	16.6
LOS		F	A		F	A	F	E		E	F	B
Approach Delay		82.5			608.7			77.1			155.7	
Approach LOS		F			F			E			F	
90th %ile Green (s)	32.0	32.0	32.0	28.0	28.0	28.0	16.0	22.8		28.0	35.0	35.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold		Max	Max	Max
70th %ile Green (s)	32.0	32.0	32.0	28.0	28.0	28.0	16.0	22.8		28.0	35.0	35.0
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold		Max	Max	Max
50th %ile Green (s)	32.0	32.0	32.0	28.0	28.0	28.0	16.0	23.1		27.7	35.0	35.0
50th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold		Gap	Max	Max
30th %ile Green (s)	32.0	32.0	32.0	28.0	28.0	28.0	16.0	26.5		24.3	35.0	35.0
30th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold		Gap	Max	Max
10th %ile Green (s)	32.0	32.0	32.0	28.0	28.0	28.0	16.0	31.4		19.4	35.0	35.0
10th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold		Gap	Max	Max
Stops (vph)		300	27		127	14	161	499		276	990	54
Fuel Used(gal)		12	1		40	0	8	23		9	66	2
CO Emissions (g/hr)		857	74		2775	34	589	1610		595	4601	158
NOx Emissions (g/hr)		167	14		540	7	115	313		116	895	31
VOC Emissions (g/hr)		199	17		643	8	136	373		138	1066	37
Dilemma Vehicles (#)		0	0		0	0	0	0		0	0	0
Queue Length 50th (ft)		~406	3		~451	0	170	~286		241	~728	40
Queue Length 95th (ft)		#569	61		#411	1	#319	#421		#375	#866	102
Internal Link Dist (ft)		203			139			942			1006	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)							275			550		
Base Capacity (vph)		369	599		101	498	221	696		387	967	496
Starvation Cap Reductn		0	0		0	0	0	0		0	0	0
Spillback Cap Reductn		0	0		0	0	0	0		0	0	0
Storage Cap Reductn		0	0		0	0	0	0		0	0	0
Reduced v/c Ratio		1.14	0.48		3.09	0.39	0.92	0.92		0.79	1.33	0.34

Intersection Summary			
Area Type:	Other		
Cycle Length: 128			
Actuated Cycle Length: 128			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 3.09			
Intersection Signal Delay: 184.9		Intersection LOS: F	
Intersection Capacity Utilization 89.7%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 128			
70th %ile Actuated Cycle: 128			
50th %ile Actuated Cycle: 128			
30th %ile Actuated Cycle: 128			
10th %ile Actuated Cycle: 128			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Skyline Blvd & Sneath Ln





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	257	245	22	172	121	184	551	27	299	1261	166
Future Volume (vph)	104	257	245	22	172	121	184	551	27	299	1261	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1836	1557		1852	1583	1770	3510		1770	3539	1533
Flt Permitted		0.79	1.00		0.25	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1478	1557		462	1583	1770	3510		1770	3539	1533
Peak-hour factor, PHF	0.86	0.86	0.86	0.62	0.62	0.62	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	121	299	285	35	277	195	204	612	30	305	1287	169
RTOR Reduction (vph)	0	0	210	0	0	152	0	2	0	0	0	77
Lane Group Flow (vph)	0	420	75	0	312	43	204	640	0	305	1287	92
Confl. Peds. (#/hr)			1	1								1
Confl. Bikes (#/hr)			4						3			7
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		32.0	32.0		28.0	28.0	16.0	25.3		25.5	35.0	35.0
Effective Green, g (s)		32.0	32.0		28.0	28.0	16.0	25.3		25.5	35.0	35.0
Actuated g/C Ratio		0.25	0.25		0.22	0.22	0.12	0.20		0.20	0.27	0.27
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		369	389		101	346	221	693		352	967	419
v/s Ratio Prot							c0.12	0.18		0.17	c0.36	
v/s Ratio Perm		c0.28	0.05		c0.68	0.03						0.06
v/c Ratio		1.14	0.19		3.09	0.12	0.92	0.92		0.87	1.33	0.22
Uniform Delay, d1		48.0	37.8		50.0	40.1	55.4	50.4		49.6	46.5	35.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		90.0	0.2		965.8	0.2	39.7	17.9		19.5	156.1	0.3
Delay (s)		138.0	38.1		1015.8	40.3	95.1	68.3		69.1	202.6	36.2
Level of Service		F	D		F	D	F	E		E	F	D
Approach Delay (s)		97.6			640.6			74.7			163.5	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	195.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	40	13	45	69	3
Future Vol, veh/h	6	40	13	45	69	3
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	56	16	55	85	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	175	88	90	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	815	970	1505	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	804	969	1504	-	-	-
Mov Cap-2 Maneuver	804	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	944	-	-
HCM Lane V/C Ratio	0.011	-	0.068	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	2	23	27	4	3	13	21	21	2	22	1
Future Vol, veh/h	1	2	23	27	4	3	13	21	21	2	22	1
Peak Hour Factor	0.59	0.59	0.95	0.77	0.77	0.77	0.74	0.74	0.74	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	24	35	5	4	18	28	28	3	29	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.5	7.3	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	4%	79%	8%
Vol Thru, %	38%	8%	12%	88%
Vol Right, %	38%	88%	9%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	26	34	25
LT Vol	13	1	27	2
Through Vol	21	2	4	22
RT Vol	21	23	3	1
Lane Flow Rate	74	29	44	33
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.03	0.052	0.038
Departure Headway (Hd)	3.905	3.631	4.25	4.11
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	913	977	838	867
Service Time	1.945	1.687	2.298	2.156
HCM Lane V/C Ratio	0.081	0.03	0.053	0.038
HCM Control Delay	7.3	6.8	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	297	469	994	149	80	499
v/c Ratio	0.96	0.34	1.01	0.18	0.25	0.74
Control Delay	88.9	6.1	59.9	11.8	43.1	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.9	6.1	59.9	11.8	43.1	32.5
Queue Length 50th (ft)	219	105	~738	43	51	259
Queue Length 95th (ft)	#377	145	#1022	80	m94	m375
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	310	1374	981	835	326	668
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.34	1.01	0.18	0.25	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWU	SWL	SWR
Lane Configurations							
Traffic Volume (vph)	261	413	954	143	7	63	439
Future Volume (vph)	261	413	954	143	7	63	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7		3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1559		1770	1583
Flt Permitted	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1559		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	297	469	994	149	8	72	499
RTOR Reduction (vph)	0	0	0	14	0	0	53
Lane Group Flow (vph)	297	469	994	135	0	80	446
Confl. Peds. (#/hr)				2			
Turn Type	Prot	NA	NA	Perm	Perm	Prot	pt+ov
Protected Phases	5	2	6			4	4 5
Permitted Phases				6	4		
Actuated Green, G (s)	20.0	84.0	60.0	60.0		20.7	44.2
Effective Green, g (s)	20.0	84.0	60.0	60.0		20.7	44.2
Actuated g/C Ratio	0.18	0.74	0.53	0.53		0.18	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7		3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	310	1373	981	821		321	614
v/s Ratio Prot	c0.17	0.25	c0.53				c0.28
v/s Ratio Perm				0.09		0.05	
v/c Ratio	0.96	0.34	1.01	0.16		0.25	0.73
Uniform Delay, d1	46.5	5.2	27.0	14.0		39.9	29.7
Progression Factor	1.00	1.00	1.00	1.00		1.02	1.02
Incremental Delay, d2	39.5	0.1	32.1	0.1		0.4	4.3
Delay (s)	86.0	5.4	59.0	14.1		41.2	34.5
Level of Service	F	A	E	B		D	C
Approach Delay (s)		36.7	53.1			35.4	
Approach LOS		D	D			D	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	13.2
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 cannot analyze U-Turning movements.

Intersection	
Int Delay, s/veh	8.6

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations													
Traffic Vol, veh/h	86	26	40	22	10	16	14	32	256	68	68	423	108
Future Vol, veh/h	86	26	40	22	10	16	14	32	256	68	68	423	108
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	80	80	80	80	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	29	44	26	12	19	18	40	320	85	78	486	124

Major/Minor	Minor1			Minor2			Major1				Major2		
Conflicting Flow All	884	1245	203	995	1225	305	610	610	0	0	405	0	0
Stage 1	479	479	-	704	704	-	-	-	-	-	-	-	-
Stage 2	405	766	-	291	521	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	240	173	804	199	178	691	589	965	-	-	1150	-	-
Stage 1	537	553	-	394	438	-	-	-	-	-	-	-	-
Stage 2	593	410	-	693	530	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	197	149	804	144	154	691	800	800	-	-	1150	-	-
Mov Cap-2 Maneuver	197	149	-	144	154	-	-	-	-	-	-	-	-
Stage 1	498	513	-	365	408	-	-	-	-	-	-	-	-
Stage 2	522	382	-	574	491	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	53.4	30.1	1.2	0.9
HCM LOS	F	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	800	-	-	230	199	1150	-	-
HCM Lane V/C Ratio	0.072	-	-	0.726	0.284	0.068	-	-
HCM Control Delay (s)	9.8	-	-	53.4	30.1	8.4	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	4.9	1.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	255	5	7	697	26	8
Future Vol, veh/h	255	5	7	697	26	8
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	95	95	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	271	5	7	734	34	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	279	0	1025	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	748	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1284	-	260	762
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	257	760
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	-	-	1280	-
HCM Lane V/C Ratio	0.145	-	-	0.006	-
HCM Control Delay (s)	18.8	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	257	11	5	672	32	7
Future Vol, veh/h	257	11	5	672	32	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	94	94	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	12	5	715	46	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	294	0	1013	288
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1268	-	265	751
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1268	-	263	751
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	1268	-
HCM Lane V/C Ratio	0.187	-	-	0.004	-
HCM Control Delay (s)	19.8	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Intersection Delay, s/veh	32.4
Intersection LOS	D

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	251	6	16	39	60	658
Future Vol, veh/h	251	6	16	39	60	658
Peak Hour Factor	0.87	0.87	0.68	0.68	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	7	24	57	63	685
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	15.1	10	41.7
HCM LOS	C	A	E

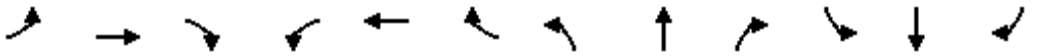
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	29%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	71%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	257	60	658
LT Vol	16	251	60	0
Through Vol	0	0	0	0
RT Vol	39	6	0	658
Lane Flow Rate	81	295	62	685
Geometry Grp	2	2	7	7
Degree of Util (X)	0.135	0.501	0.108	0.952
Departure Headway (Hd)	6.024	6.106	6.21	4.999
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	594	591	578	727
Service Time	4.069	4.143	3.941	2.729
HCM Lane V/C Ratio	0.136	0.499	0.107	0.942
HCM Control Delay	10	15.1	9.7	44.6
HCM Lane LOS	A	C	A	E
HCM 95th-tile Q	0.5	2.8	0.4	14

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	277	145	250	511	162	1367	155	616	118
v/c Ratio	0.86	0.29	1.30	0.74	0.70	1.63	0.63	0.71	0.25
Control Delay	65.1	7.5	200.6	14.1	61.2	319.2	55.0	40.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	7.5	200.6	14.1	61.2	319.2	55.0	40.8	7.2
Queue Length 50th (ft)	178	0	~223	33	106	~712	101	204	0
Queue Length 95th (ft)	#274	30	#420	170	#200	#907	162	250	37
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	348	523	193	689	275	991	379	1206	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.28	1.30	0.74	0.59	1.38	0.41	0.51	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	104	112	11	226	485	149	1238	19	132	524	100
Future Volume (vph)	109	104	112	11	226	485	149	1238	19	132	524	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1816	1583		1858	1563	1770	3530		1770	3539	1549
Flt Permitted		0.71	1.00		0.49	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1327	1583		906	1563	1770	3530		1770	3539	1549
Peak-hour factor, PHF	0.77	0.77	0.77	0.95	0.95	0.95	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	142	135	145	12	238	511	162	1346	21	155	616	118
RTOR Reduction (vph)	0	0	110	0	0	355	0	1	0	0	0	89
Lane Group Flow (vph)	0	277	35	0	250	156	162	1366	0	155	616	29
Confl. Bikes (#/hr)						1			2			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		25.1	25.1		22.2	22.2	13.6	24.6		14.4	25.6	25.6
Effective Green, g (s)		25.1	25.1		22.2	22.2	13.6	24.6		14.4	25.6	25.6
Actuated g/C Ratio		0.24	0.24		0.21	0.21	0.13	0.24		0.14	0.25	0.25
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		321	383		194	335	232	839		246	875	383
v/s Ratio Prot							c0.09	c0.39		0.09	0.17	
v/s Ratio Perm		c0.21	0.02		c0.28	0.10						0.02
v/c Ratio		0.86	0.09		1.29	0.47	0.70	1.63		0.63	0.70	0.08
Uniform Delay, d1		37.6	30.4		40.6	35.5	43.0	39.5		42.0	35.5	29.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		20.5	0.1		162.9	1.0	8.8	288.2		5.2	2.6	0.1
Delay (s)		58.1	30.5		203.6	36.5	51.8	327.7		47.2	38.1	30.0
Level of Service		E	C		F	D	D	F		D	D	C
Approach Delay (s)		48.6			91.4			298.5			38.6	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	161.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	17.2
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	6	44	104	34	4
Future Vol, veh/h	4	6	44	104	34	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	85	85	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	7	52	122	49	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	278	52	55	0	-	0
Stage 1	52	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	712	1016	1550	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	1016	1550	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1550	-	852	-	-
HCM Lane V/C Ratio	0.033	-	0.014	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	8	13	10	1	2	47	38	23	2	17	0
Future Vol, veh/h	1	8	13	10	1	2	47	38	23	2	17	0
Peak Hour Factor	0.69	0.69	0.69	0.81	0.81	0.81	0.84	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	12	19	12	1	2	56	45	27	2	20	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.4	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	5%	77%	11%
Vol Thru, %	35%	36%	8%	89%
Vol Right, %	21%	59%	15%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	22	13	19
LT Vol	47	1	10	2
Through Vol	38	8	1	17
RT Vol	23	13	2	0
Lane Flow Rate	129	32	16	22
Geometry Grp	1	1	1	1
Degree of Util (X)	0.143	0.034	0.019	0.026
Departure Headway (Hd)	3.992	3.861	4.282	4.134
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	897	916	827	861
Service Time	2.019	1.934	2.355	2.181
HCM Lane V/C Ratio	0.144	0.035	0.019	0.026
HCM Control Delay	7.7	7.1	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	414	1986	784	138	172	428
v/c Ratio	1.01	1.54	1.01	0.21	0.48	0.54
Control Delay	84.7	266.9	64.0	13.7	35.7	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.7	266.9	64.0	13.7	35.7	15.9
Queue Length 50th (ft)	~250	~1585	~474	35	84	128
Queue Length 95th (ft)	#439	#1898	#663	72	m138	m197
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	408	1288	773	668	428	793
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	1.54	1.01	0.21	0.40	0.54

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	389	1867	674	119	150	372
Future Volume (vph)	389	1867	674	119	150	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1562	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1562	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.86	0.86	0.87	0.87
Adj. Flow (vph)	414	1986	784	138	172	428
RTOR Reduction (vph)	0	0	0	20	0	42
Lane Group Flow (vph)	414	1986	784	118	172	386
Confl. Peds. (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	20.0	60.1	36.1	36.1	17.6	41.1
Effective Green, g (s)	20.0	60.1	36.1	36.1	17.6	41.1
Actuated g/C Ratio	0.23	0.69	0.42	0.42	0.20	0.47
Clearance Time (s)	4.0	5.7	5.7	5.7	3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	407	1288	773	648	358	748
v/s Ratio Prot	0.23	c1.07	0.42		0.10	c0.24
v/s Ratio Perm				0.08		
v/c Ratio	1.02	1.54	1.01	0.18	0.48	0.52
Uniform Delay, d1	33.5	13.4	25.4	16.1	30.6	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.02	1.04
Incremental Delay, d2	49.0	247.8	36.0	0.1	1.0	0.6
Delay (s)	82.5	261.2	61.4	16.2	32.2	17.3
Level of Service	F	F	E	B	C	B
Approach Delay (s)		230.4	54.6		21.6	
Approach LOS		F	D		C	

Intersection Summary			
HCM 2000 Control Delay	157.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	13.2
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	389	1867	674	119	150	372
Future Volume (veh/h)	389	1867	674	119	150	372
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	1986	784	138	172	428
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.86	0.86	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	396	1247	748	635	405	714
Arrive On Green	0.22	0.67	0.40	0.40	0.23	0.23
Sat Flow, veh/h	1774	1863	1863	1581	1774	1583
Grp Volume(v), veh/h	414	1986	784	138	172	428
Grp Sat Flow(s),veh/h/ln	1774	1863	1863	1581	1774	1583
Q Serve(g_s), s	20.0	60.0	36.0	5.1	7.4	18.2
Cycle Q Clear(g_c), s	20.0	60.0	36.0	5.1	7.4	18.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	396	1247	748	635	405	714
V/C Ratio(X)	1.05	1.59	1.05	0.22	0.43	0.60
Avail Cap(c_a), veh/h	396	1247	748	635	416	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	14.8	26.8	17.6	29.6	18.5
Incr Delay (d2), s/veh	57.7	270.6	46.2	0.2	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	123.9	27.9	2.3	3.7	16.7
LnGrp Delay(d),s/veh	92.6	285.4	73.0	17.8	30.3	19.8
LnGrp LOS	F	F	F	B	C	B
Approach Vol, veh/h		2400	922		600	
Approach Delay, s/veh		252.2	64.7		22.8	
Approach LOS		F	E		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		65.7		23.9	24.0	41.7		
Change Period (Y+Rc), s		5.7		3.5	4.0	5.7		
Max Green Setting (Gmax), s		60.0		21.0	20.0	30.0		
Max Q Clear Time (g_c+I1), s		62.0		20.2	22.0	38.0		
Green Ext Time (p_c), s		0.0		0.2	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	173.0
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	43.3

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL	SWT	SWR
Lane Configurations														
Traffic Vol, veh/h	102	8	56	34	11	28	25	9	398	58	1	49	336	28
Future Vol, veh/h	102	8	56	34	11	28	25	9	398	58	1	49	336	28
Conflicting Peds, #/hr	1	0	4	4	0	1	0	6	0	1	0	1	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	92	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	148	12	81	49	16	41	36	13	577	84	1	71	487	41

Major/Minor	Minor1			Minor2			Major1				Major2			
Conflicting Flow All	1115	1396	336	1055	1418	271	528	534	0	0	661	662	0	0
Stage 1	718	718	-	658	658	-	-	-	-	-	-	-	-	-
Stage 2	397	678	-	397	760	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	163	140	660	180	136	727	664	1030	-	-	547	922	-	-
Stage 1	386	431	-	420	459	-	-	-	-	-	-	-	-	-
Stage 2	600	450	-	600	413	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 123	119	657	129	116	722	709	709	-	-	909	909	-	-
Mov Cap-2 Maneuver	~ 123	119	-	129	116	-	-	-	-	-	-	-	-	-
Stage 1	359	401	-	389	420	-	-	-	-	-	-	-	-	-
Stage 2	501	412	-	474	384	-	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	272.4	48.1	0.7	1.1
HCM LOS	F	E		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	709	-	-	169	184	909	-	-
HCM Lane V/C Ratio	0.069	-	-	1.424	0.575	0.079	-	-
HCM Control Delay (s)	10.5	-	-	272.4	48.1	9.3	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	15	3.1	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	29	9	317	8	10
Future Vol, veh/h	574	29	9	317	8	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	68	68	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	604	31	13	466	19	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	637	0	1114	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	492	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	230	487
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	945	-	225	486
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	945	-
HCM Lane V/C Ratio	0.134	-	-	0.014	-
HCM Control Delay (s)	17.9	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	579	12	8	311	19	8
Future Vol, veh/h	579	12	8	311	19	8
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	70	70	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	623	13	11	444	32	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1097	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	467	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	236	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	947	-	232	482
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	630	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	20.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	274	-	-	947	-
HCM Lane V/C Ratio	0.164	-	-	0.012	-
HCM Control Delay (s)	20.7	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Intersection Delay, s/veh	66.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	654	10	18	105	27	259
Future Vol, veh/h	654	10	18	105	27	259
Peak Hour Factor	0.91	0.91	0.86	0.86	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	719	11	21	122	36	341
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	103.9	11.3	16.4
HCM LOS	F	B	C

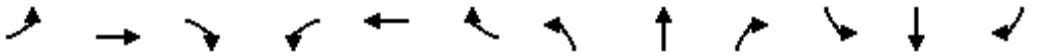
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	15%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	85%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	664	27	259
LT Vol	18	654	27	0
Through Vol	0	0	0	0
RT Vol	105	10	0	259
Lane Flow Rate	143	730	36	341
Geometry Grp	2	2	7	7
Degree of Util (X)	0.238	1.144	0.071	0.565
Departure Headway (Hd)	6.364	5.643	7.572	6.346
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	649	476	573
Service Time	4.364	3.643	5.272	4.046
HCM Lane V/C Ratio	0.252	1.125	0.076	0.595
HCM Control Delay	11.3	103.9	10.8	17
HCM Lane LOS	B	F	B	C
HCM 95th-tile Q	0.9	23.3	0.2	3.5

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	439	595	317	195	338	844	305	1753	169
v/c Ratio	1.22	0.74	3.60	0.39	1.53	1.21	0.87	1.81	0.36
Control Delay	162.5	11.3	1214.6	8.0	297.3	151.3	73.2	398.9	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	162.5	11.3	1214.6	8.0	297.3	151.3	73.2	398.9	22.1
Queue Length 50th (ft)	~446	27	~470	0	~392	~478	241	~1151	59
Queue Length 95th (ft)	#611	119	#429	1	#581	#614	#375	#1289	123
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	360	804	88	498	221	697	387	967	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.74	3.60	0.39	1.53	1.21	0.79	1.81	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	257	512	25	172	121	304	733	27	299	1718	166
Future Volume (vph)	120	257	512	25	172	121	304	733	27	299	1718	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1834	1557		1851	1583	1770	3517		1770	3539	1533
Flt Permitted		0.77	1.00		0.22	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1442	1557		404	1583	1770	3517		1770	3539	1533
Peak-hour factor, PHF	0.86	0.86	0.86	0.62	0.62	0.62	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	140	299	595	40	277	195	338	814	30	305	1753	169
RTOR Reduction (vph)	0	0	415	0	0	152	0	2	0	0	0	57
Lane Group Flow (vph)	0	439	180	0	317	43	338	842	0	305	1753	112
Confl. Peds. (#/hr)			1	1								1
Confl. Bikes (#/hr)			4						3			7
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		32.0	32.0		28.0	28.0	16.0	25.3		25.5	35.0	35.0
Effective Green, g (s)		32.0	32.0		28.0	28.0	16.0	25.3		25.5	35.0	35.0
Actuated g/C Ratio		0.25	0.25		0.22	0.22	0.12	0.20		0.20	0.27	0.27
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		360	389		88	346	221	695		352	967	419
v/s Ratio Prot							c0.19	0.24		0.17	c0.50	
v/s Ratio Perm		c0.30	0.12		c0.78	0.03						0.07
v/c Ratio		1.22	0.46		3.60	0.12	1.53	1.21		0.87	1.81	0.27
Uniform Delay, d1		48.0	40.7		50.0	40.1	56.0	51.4		49.6	46.5	36.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		121.4	0.9		1198.7	0.2	259.8	108.5		19.5	369.9	0.3
Delay (s)		169.4	41.6		1248.7	40.3	315.8	159.8		69.1	416.4	36.8
Level of Service		F	D		F	D	F	F		E	F	D
Approach Delay (s)		95.8			788.5			204.4			340.0	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	303.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.05		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	40	11	50	67	5
Future Vol, veh/h	29	40	11	50	67	5
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	56	13	61	83	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	174	87	90	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	816	971	1505	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	807	970	1504	-	-	-
Mov Cap-2 Maneuver	807	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	894	-	-
HCM Lane V/C Ratio	0.009	-	0.107	-	-
HCM Control Delay (s)	7.4	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	5	31	33	7	15	13	33	21	2	20	1
Future Vol, veh/h	5	5	31	33	7	15	13	33	21	2	20	1
Peak Hour Factor	0.59	0.59	0.95	0.77	0.77	0.77	0.74	0.74	0.74	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	8	33	43	9	19	18	45	28	3	27	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.6	7.5	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	12%	60%	9%
Vol Thru, %	49%	12%	13%	87%
Vol Right, %	31%	76%	27%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	41	55	23
LT Vol	13	5	33	2
Through Vol	33	5	7	20
RT Vol	21	31	15	1
Lane Flow Rate	91	50	71	31
Geometry Grp	1	1	1	1
Degree of Util (X)	0.101	0.052	0.082	0.036
Departure Headway (Hd)	4.016	3.768	4.137	4.204
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	938	858	842
Service Time	2.076	1.843	2.203	2.275
HCM Lane V/C Ratio	0.103	0.053	0.083	0.037
HCM Control Delay	7.5	7.1	7.6	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.3	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	334	1067	1789	149	96	490
v/c Ratio	1.08	0.78	1.83	0.18	0.30	0.78
Control Delay	119.4	14.5	400.1	8.8	43.8	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	14.5	400.1	8.8	43.8	40.3
Queue Length 50th (ft)	~274	421	~1990	31	62	305
Queue Length 95th (ft)	#441	575	#2255	66	m109	m424
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	309	1370	978	848	325	629
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.78	1.83	0.18	0.30	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWU	SWL	SWR
Lane Configurations							
Traffic Volume (vph)	294	939	1717	143	7	77	431
Future Volume (vph)	294	939	1717	143	7	77	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7		3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1559		1770	1583
Flt Permitted	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1559		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	334	1067	1789	149	8	88	490
RTOR Reduction (vph)	0	0	0	29	0	0	6
Lane Group Flow (vph)	334	1067	1789	120	0	96	484
Confl. Peds. (#/hr)				2			
Turn Type	Prot	NA	NA	Perm	Perm	Prot	pt+ov
Protected Phases	5	2	6			4	4 5
Permitted Phases				6	4		
Actuated Green, G (s)	20.0	84.0	60.0	60.0		21.0	44.5
Effective Green, g (s)	20.0	84.0	60.0	60.0		21.0	44.5
Actuated g/C Ratio	0.18	0.74	0.53	0.53		0.18	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7		3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	309	1370	978	819		325	616
v/s Ratio Prot	c0.19	0.57	c0.96				c0.31
v/s Ratio Perm				0.08		0.05	
v/c Ratio	1.08	0.78	1.83	0.15		0.30	0.79
Uniform Delay, d1	47.1	9.3	27.1	13.9		40.2	30.7
Progression Factor	1.00	1.00	1.00	1.00		1.02	1.02
Incremental Delay, d2	74.5	2.9	377.2	0.1		0.5	6.5
Delay (s)	121.6	12.2	404.3	14.0		41.4	37.7
Level of Service	F	B	F	B		D	D
Approach Delay (s)		38.3	374.3			38.3	
Approach LOS		D	F			D	

Intersection Summary			
HCM 2000 Control Delay	204.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	114.2	Sum of lost time (s)	13.2
Intersection Capacity Utilization	125.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 cannot analyze U-Turning movements.

Intersection	
Int Delay, s/veh	10.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations													
Traffic Vol, veh/h	95	26	40	10	10	8	14	30	278	88	71	428	89
Future Vol, veh/h	95	26	40	10	10	8	14	30	278	88	71	428	89
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	80	80	80	80	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	29	44	12	12	9	18	38	348	110	82	492	102

Major/Minor	Minor1			Minor2			Major1				Major2		
Conflicting Flow All	931	1273	229	1008	1277	297	594	594	0	0	458	0	0
Stage 1	515	515	-	707	707	-	-	-	-	-	-	-	-
Stage 2	416	758	-	301	570	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	222	166	774	195	165	699	603	978	-	-	1099	-	-
Stage 1	511	533	-	392	436	-	-	-	-	-	-	-	-
Stage 2	585	413	-	683	504	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	184	143	774	140	142	699	812	812	-	-	1099	-	-
Mov Cap-2 Maneuver	184	143	-	140	142	-	-	-	-	-	-	-	-
Stage 1	476	497	-	365	403	-	-	-	-	-	-	-	-
Stage 2	518	382	-	566	470	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	70.1	28.9	1	1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	812	-	-	215	183	1099	-	-
HCM Lane V/C Ratio	0.068	-	-	0.823	0.18	0.074	-	-
HCM Control Delay (s)	9.8	-	-	70.1	28.9	8.5	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	6.1	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	318	7	7	697	26	11
Future Vol, veh/h	318	7	7	697	26	11
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	95	95	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	338	7	7	734	34	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	348	0	1093	345
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	748	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1211	-	237	698
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1208	-	234	696
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	292	-	-	1208	-
HCM Lane V/C Ratio	0.165	-	-	0.006	-
HCM Control Delay (s)	19.7	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	13	5	672	32	10
Future Vol, veh/h	320	13	5	672	32	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	94	94	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	352	14	5	715	46	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	366	0	1084	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1193	-	240	685
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1193	-	238	685
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	21.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	282	-	-	1193	-
HCM Lane V/C Ratio	0.213	-	-	0.004	-
HCM Control Delay (s)	21.2	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Intersection	
Intersection Delay, s/veh	37.7
Intersection LOS	E

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	298	10	17	37	56	658
Future Vol, veh/h	298	10	17	37	56	658
Peak Hour Factor	0.87	0.87	0.68	0.68	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	343	11	25	54	58	685
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	18.2	10.3	49.9
HCM LOS	C	B	E

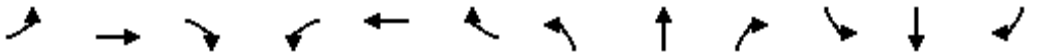
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	31%	97%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	69%	3%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	308	56	658
LT Vol	17	298	56	0
Through Vol	0	0	0	0
RT Vol	37	10	0	658
Lane Flow Rate	79	354	58	685
Geometry Grp	2	2	7	7
Degree of Util (X)	0.137	0.605	0.104	0.987
Departure Headway (Hd)	6.218	6.152	6.4	5.186
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	588	560	699
Service Time	4.273	4.195	4.14	2.926
HCM Lane V/C Ratio	0.137	0.602	0.104	0.98
HCM Control Delay	10.3	18.2	9.9	53.3
HCM Lane LOS	B	C	A	F
HCM 95th-tile Q	0.5	4	0.3	15.4

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	280	239	250	511	389	1954	201	1191	166
v/c Ratio	0.94	0.44	1.53	0.77	1.59	1.95	0.74	1.12	0.30
Control Delay	83.6	7.4	301.5	15.9	320.2	456.1	63.5	103.9	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.6	7.4	301.5	15.9	320.2	456.1	63.5	103.9	10.5
Queue Length 50th (ft)	207	0	~265	39	~421	~1225	146	~546	21
Queue Length 95th (ft)	#282	33	#430	173	#614	#1411	207	#620	64
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	308	551	163	661	244	1003	335	1066	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.43	1.53	0.77	1.59	1.95	0.60	1.12	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	106	184	11	226	485	358	1755	42	171	1012	141
Future Volume (vph)	109	106	184	11	226	485	358	1755	42	171	1012	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1817	1583		1858	1562	1770	3525		1770	3539	1550
Flt Permitted		0.71	1.00		0.46	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1331	1583		864	1562	1770	3525		1770	3539	1550
Peak-hour factor, PHF	0.77	0.77	0.77	0.95	0.95	0.95	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	142	138	239	12	238	511	389	1908	46	201	1191	166
RTOR Reduction (vph)	0	0	185	0	0	366	0	1	0	0	0	89
Lane Group Flow (vph)	0	280	54	0	250	145	389	1953	0	201	1191	77
Confl. Bikes (#/hr)						1			2			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		26.1	26.1		22.0	22.0	16.0	33.0		17.8	35.0	35.0
Effective Green, g (s)		26.1	26.1		22.0	22.0	16.0	33.0		17.8	35.0	35.0
Actuated g/C Ratio		0.22	0.22		0.19	0.19	0.14	0.28		0.15	0.30	0.30
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		299	355		163	295	243	1001		271	1066	467
v/s Ratio Prot							c0.22	c0.55		0.11	0.34	
v/s Ratio Perm		c0.21	0.03		c0.29	0.09						0.05
v/c Ratio		0.94	0.15		1.53	0.49	1.60	1.95		0.74	1.12	0.16
Uniform Delay, d1		44.2	36.1		47.0	42.1	50.0	41.5		47.0	40.5	29.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		35.3	0.2		268.6	1.3	288.8	431.4		10.4	65.7	0.2
Delay (s)		79.5	36.3		315.6	43.4	338.9	473.0		57.4	106.2	30.0
Level of Service		E	D		F	D	F	F		E	F	C
Approach Delay (s)		59.6			132.8			450.7			91.8	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	256.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.49		
Actuated Cycle Length (s)	116.1	Sum of lost time (s)	17.2
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	6	46	102	30	9
Future Vol, veh/h	5	6	46	102	30	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	85	85	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	7	54	120	43	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	278	50	56	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	712	1018	1549	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	1018	1549	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	2.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1549	-	834	-	-
HCM Lane V/C Ratio	0.035	-	0.016	-	-
HCM Control Delay (s)	7.4	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	10	13	10	2	2	56	36	26	4	14	0
Future Vol, veh/h	1	10	13	10	2	2	56	36	26	4	14	0
Peak Hour Factor	0.69	0.69	0.69	0.81	0.81	0.81	0.84	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	14	19	12	2	2	67	43	31	5	16	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.5	7.8	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	47%	4%	71%	22%
Vol Thru, %	31%	42%	14%	78%
Vol Right, %	22%	54%	14%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	24	14	18
LT Vol	56	1	10	4
Through Vol	36	10	2	14
RT Vol	26	13	2	0
Lane Flow Rate	140	35	17	21
Geometry Grp	1	1	1	1
Degree of Util (X)	0.156	0.038	0.021	0.025
Departure Headway (Hd)	4.003	3.911	4.3	4.175
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	895	903	823	852
Service Time	2.033	1.988	2.378	2.228
HCM Lane V/C Ratio	0.156	0.039	0.021	0.025
HCM Control Delay	7.8	7.1	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.1	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	414	1986	784	141	178	428
v/c Ratio	1.01	1.54	1.01	0.21	0.50	0.54
Control Delay	84.7	266.9	64.0	13.7	36.2	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.7	266.9	64.0	13.7	36.2	15.9
Queue Length 50th (ft)	~250	~1585	~474	36	88	128
Queue Length 95th (ft)	#439	#1898	#663	73	m143	m197
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	408	1288	773	669	428	793
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	1.54	1.01	0.21	0.42	0.54

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	389	1867	674	121	155	372
Future Volume (vph)	389	1867	674	121	155	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1562	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1562	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.86	0.86	0.87	0.87
Adj. Flow (vph)	414	1986	784	141	178	428
RTOR Reduction (vph)	0	0	0	21	0	42
Lane Group Flow (vph)	414	1986	784	120	178	386
Confl. Peds. (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	20.0	60.1	36.1	36.1	17.6	41.1
Effective Green, g (s)	20.0	60.1	36.1	36.1	17.6	41.1
Actuated g/C Ratio	0.23	0.69	0.42	0.42	0.20	0.47
Clearance Time (s)	4.0	5.7	5.7	5.7	3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	407	1288	773	648	358	748
v/s Ratio Prot	0.23	c1.07	0.42		0.10	c0.24
v/s Ratio Perm				0.08		
v/c Ratio	1.02	1.54	1.01	0.19	0.50	0.52
Uniform Delay, d1	33.5	13.4	25.4	16.1	30.7	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.02	1.04
Incremental Delay, d2	49.0	247.8	36.0	0.1	1.1	0.6
Delay (s)	82.5	261.2	61.4	16.2	32.3	17.3
Level of Service	F	F	E	B	C	B
Approach Delay (s)		230.4	54.5		21.7	
Approach LOS		F	D		C	

Intersection Summary			
HCM 2000 Control Delay	156.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	13.2
Intersection Capacity Utilization	114.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	389	1867	674	121	155	372
Future Volume (veh/h)	389	1867	674	121	155	372
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	1986	784	141	178	428
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.86	0.86	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	396	1247	748	635	405	714
Arrive On Green	0.22	0.67	0.40	0.40	0.23	0.23
Sat Flow, veh/h	1774	1863	1863	1581	1774	1583
Grp Volume(v), veh/h	414	1986	784	141	178	428
Grp Sat Flow(s),veh/h/ln	1774	1863	1863	1581	1774	1583
Q Serve(g_s), s	20.0	60.0	36.0	5.3	7.7	18.2
Cycle Q Clear(g_c), s	20.0	60.0	36.0	5.3	7.7	18.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	396	1247	748	635	405	714
V/C Ratio(X)	1.05	1.59	1.05	0.22	0.44	0.60
Avail Cap(c_a), veh/h	396	1247	748	635	416	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	14.8	26.8	17.6	29.7	18.5
Incr Delay (d2), s/veh	57.8	270.6	46.2	0.2	0.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	123.9	27.9	2.3	3.8	16.7
LnGrp Delay(d),s/veh	92.6	285.5	73.0	17.8	30.4	19.8
LnGrp LOS	F	F	F	B	C	B
Approach Vol, veh/h		2400	925		606	
Approach Delay, s/veh		252.2	64.6		23.0	
Approach LOS		F	E		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		65.7		23.9	24.0	41.7		
Change Period (Y+Rc), s		5.7		3.5	4.0	5.7		
Max Green Setting (Gmax), s		60.0		21.0	20.0	30.0		
Max Q Clear Time (g_c+I1), s		62.0		20.2	22.0	38.0		
Green Ext Time (p_c), s		0.0		0.2	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	172.7
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	46.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL	SWT	SWR
Lane Configurations														
Traffic Vol, veh/h	102	8	56	42	11	34	25	11	398	58	1	49	336	31
Future Vol, veh/h	102	8	56	42	11	34	25	11	398	58	1	49	336	31
Conflicting Peds, #/hr	1	0	4	4	0	1	0	6	0	1	0	1	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	92	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	148	12	81	61	16	49	36	16	577	84	1	71	487	45

Major/Minor	Minor1			Minor2			Major1				Major2			
Conflicting Flow All	1121	1406	336	1063	1426	273	532	538	0	0	661	662	0	0
Stage 1	724	724	-	660	660	-	-	-	-	-	-	-	-	-
Stage 2	397	682	-	403	766	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	161	138	660	177	134	725	661	1026	-	-	547	922	-	-
Stage 1	383	429	-	418	458	-	-	-	-	-	-	-	-	-
Stage 2	600	448	-	595	410	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 119	117	657	126	114	720	713	713	-	-	909	909	-	-
Mov Cap-2 Maneuver	~ 119	117	-	126	114	-	-	-	-	-	-	-	-	-
Stage 1	355	397	-	385	419	-	-	-	-	-	-	-	-	-
Stage 2	495	410	-	468	380	-	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	291.8	60.3	0.8	1.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	713	-	-	164	182	909	-	-
HCM Lane V/C Ratio	0.073	-	-	1.467	0.693	0.079	-	-
HCM Control Delay (s)	10.4	-	-	291.8	60.3	9.3	-	-
HCM Lane LOS	B	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	15.4	4.2	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	29	9	317	8	10
Future Vol, veh/h	574	29	9	317	8	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	68	68	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	604	31	13	466	19	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	637	0	1114	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	492	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	230	487
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	945	-	225	486
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	945	-
HCM Lane V/C Ratio	0.134	-	-	0.014	-
HCM Control Delay (s)	17.9	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	579	12	8	311	19	8
Future Vol, veh/h	579	12	8	311	19	8
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	70	70	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	623	13	11	444	32	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1097	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	467	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	236	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	947	-	232	482
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	630	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	20.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	274	-	-	947	-
HCM Lane V/C Ratio	0.164	-	-	0.012	-
HCM Control Delay (s)	20.7	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Intersection Delay, s/veh	67.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	654	10	18	107	27	259
Future Vol, veh/h	654	10	18	107	27	259
Peak Hour Factor	0.91	0.91	0.86	0.86	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	719	11	21	124	36	341
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	104.3	11.4	16.4
HCM LOS	F	B	C

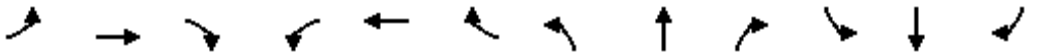
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	14%	98%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	86%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	664	27	259
LT Vol	18	654	27	0
Through Vol	0	0	0	0
RT Vol	107	10	0	259
Lane Flow Rate	145	730	36	341
Geometry Grp	2	2	7	7
Degree of Util (X)	0.241	1.145	0.071	0.566
Departure Headway (Hd)	6.365	5.649	7.577	6.351
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	649	476	573
Service Time	4.365	3.649	5.277	4.051
HCM Lane V/C Ratio	0.255	1.125	0.076	0.595
HCM Control Delay	11.4	104.3	10.9	17
HCM Lane LOS	B	F	B	C
HCM 95th-tile Q	0.9	23.3	0.2	3.5

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	439	595	317	195	338	846	305	1753	169
v/c Ratio	1.22	0.74	3.60	0.39	1.53	1.21	0.87	1.81	0.36
Control Delay	162.5	11.3	1214.6	8.0	297.3	152.4	73.2	398.9	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	162.5	11.3	1214.6	8.0	297.3	152.4	73.2	398.9	22.1
Queue Length 50th (ft)	~446	27	~470	0	~392	~481	241	~1151	59
Queue Length 95th (ft)	#611	119	#429	1	#581	#617	#375	#1289	123
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	360	804	88	498	221	697	387	967	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.74	3.60	0.39	1.53	1.21	0.79	1.81	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	257	512	25	172	121	304	734	27	299	1718	166
Future Volume (vph)	120	257	512	25	172	121	304	734	27	299	1718	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1834	1557		1851	1583	1770	3517		1770	3539	1533
Flt Permitted		0.77	1.00		0.22	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1442	1557		404	1583	1770	3517		1770	3539	1533
Peak-hour factor, PHF	0.86	0.86	0.86	0.62	0.62	0.62	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	140	299	595	40	277	195	338	816	30	305	1753	169
RTOR Reduction (vph)	0	0	415	0	0	152	0	2	0	0	0	57
Lane Group Flow (vph)	0	439	180	0	317	43	338	844	0	305	1753	112
Confl. Peds. (#/hr)			1	1								1
Confl. Bikes (#/hr)			4						3			7
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		32.0	32.0		28.0	28.0	16.0	25.3		25.5	35.0	35.0
Effective Green, g (s)		32.0	32.0		28.0	28.0	16.0	25.3		25.5	35.0	35.0
Actuated g/C Ratio		0.25	0.25		0.22	0.22	0.12	0.20		0.20	0.27	0.27
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		360	389		88	346	221	695		352	967	419
v/s Ratio Prot							c0.19	0.24		0.17	c0.50	
v/s Ratio Perm		c0.30	0.12		c0.78	0.03						0.07
v/c Ratio		1.22	0.46		3.60	0.12	1.53	1.21		0.87	1.81	0.27
Uniform Delay, d1		48.0	40.7		50.0	40.1	56.0	51.4		49.6	46.5	36.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		121.4	0.9		1198.7	0.2	259.8	109.6		19.5	369.9	0.3
Delay (s)		169.4	41.6		1248.7	40.3	315.8	161.0		69.1	416.4	36.8
Level of Service		F	D		F	D	F	F		E	F	D
Approach Delay (s)		95.8			788.5			205.2			340.0	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	303.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.05		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	40	11	52	68	5
Future Vol, veh/h	29	40	11	52	68	5
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	56	13	63	84	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	177	88	91	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	89	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	813	970	1504	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	804	969	1503	-	-	-
Mov Cap-2 Maneuver	804	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	892	-	-
HCM Lane V/C Ratio	0.009	-	0.107	-	-
HCM Control Delay (s)	7.4	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	5	31	33	7	15	13	35	21	2	21	1
Future Vol, veh/h	5	5	31	33	7	15	13	35	21	2	21	1
Peak Hour Factor	0.59	0.59	0.95	0.77	0.77	0.77	0.74	0.74	0.74	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	8	33	43	9	19	18	47	28	3	28	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.6	7.6	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	12%	60%	8%
Vol Thru, %	51%	12%	13%	88%
Vol Right, %	30%	76%	27%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	41	55	24
LT Vol	13	5	33	2
Through Vol	35	5	7	21
RT Vol	21	31	15	1
Lane Flow Rate	93	50	71	32
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.052	0.082	0.037
Departure Headway (Hd)	4.021	3.775	4.145	4.207
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	883	936	856	842
Service Time	2.082	1.851	2.211	2.279
HCM Lane V/C Ratio	0.105	0.053	0.083	0.038
HCM Control Delay	7.6	7.1	7.6	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.3	0.1

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	336	1067	1789	154	99	491
v/c Ratio	1.09	0.78	1.83	0.19	0.30	0.78
Control Delay	121.2	14.5	400.1	13.3	44.1	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.2	14.5	400.1	13.3	44.1	40.4
Queue Length 50th (ft)	~277	421	~1990	50	64	305
Queue Length 95th (ft)	#443	575	#2255	88	m113	m425
Internal Link Dist (ft)		1564	1756		268	
Turn Bay Length (ft)	375			50		
Base Capacity (vph)	309	1370	978	827	325	629
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.78	1.83	0.19	0.30	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	SEL	SET	NWT	NWR	SWU	SWL	SWR
Lane Configurations							
Traffic Volume (vph)	296	939	1717	148	7	80	432
Future Volume (vph)	296	939	1717	148	7	80	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7		3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1559		1770	1583
Flt Permitted	0.95	1.00	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1559		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	336	1067	1789	154	8	91	491
RTOR Reduction (vph)	0	0	0	8	0	0	6
Lane Group Flow (vph)	336	1067	1789	146	0	99	485
Confl. Peds. (#/hr)				2			
Turn Type	Prot	NA	NA	Perm	Perm	Prot	pt+ov
Protected Phases	5	2	6			4	4 5
Permitted Phases				6	4		
Actuated Green, G (s)	20.0	84.0	60.0	60.0		21.0	44.5
Effective Green, g (s)	20.0	84.0	60.0	60.0		21.0	44.5
Actuated g/C Ratio	0.18	0.74	0.53	0.53		0.18	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7		3.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	309	1370	978	819		325	616
v/s Ratio Prot	c0.19	0.57	c0.96				c0.31
v/s Ratio Perm				0.09		0.06	
v/c Ratio	1.09	0.78	1.83	0.18		0.30	0.79
Uniform Delay, d1	47.1	9.3	27.1	14.2		40.3	30.7
Progression Factor	1.00	1.00	1.00	1.00		1.02	1.02
Incremental Delay, d2	76.6	2.9	377.2	0.1		0.5	6.6
Delay (s)	123.7	12.2	404.3	14.3		41.6	37.8
Level of Service	F	B	F	B		D	D
Approach Delay (s)		38.9	373.4			38.5	
Approach LOS		D	F			D	

Intersection Summary			
HCM 2000 Control Delay	203.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	114.2	Sum of lost time (s)	13.2
Intersection Capacity Utilization	125.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 cannot analyze U-Turning movements.

Intersection	
Int Delay, s/veh	11.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations													
Traffic Vol, veh/h	95	26	40	16	10	12	16	35	278	88	71	428	98
Future Vol, veh/h	95	26	40	16	10	12	16	35	278	88	71	428	98
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	65	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	80	80	80	80	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	29	44	19	12	14	20	44	348	110	82	492	113

Major/Minor	Minor1			Minor2			Major1				Major2		
Conflicting Flow All	947	1300	229	1030	1299	303	605	605	0	0	458	0	0
Stage 1	531	531	-	713	713	-	-	-	-	-	-	-	-
Stage 2	416	769	-	317	586	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	216	160	774	188	160	693	594	969	-	-	1099	-	-
Stage 1	500	524	-	389	434	-	-	-	-	-	-	-	-
Stage 2	585	409	-	669	495	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	175	136	774	132	136	693	803	803	-	-	1099	-	-
Mov Cap-2 Maneuver	175	136	-	132	136	-	-	-	-	-	-	-	-
Stage 1	460	482	-	358	401	-	-	-	-	-	-	-	-
Stage 2	515	378	-	546	455	-	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	79.9	31.7	1.2	1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	803	-	-	205	179	1099	-	-
HCM Lane V/C Ratio	0.079	-	-	0.863	0.25	0.074	-	-
HCM Control Delay (s)	9.9	-	-	79.9	31.7	8.5	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	6.6	0.9	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	318	7	7	697	26	11
Future Vol, veh/h	318	7	7	697	26	11
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	95	95	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	338	7	7	734	34	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	348	0	1093	345
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	748	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1211	-	237	698
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1208	-	234	696
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	292	-	-	1208	-
HCM Lane V/C Ratio	0.165	-	-	0.006	-
HCM Control Delay (s)	19.7	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	13	5	672	32	10
Future Vol, veh/h	320	13	5	672	32	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	94	94	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	352	14	5	715	46	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	366	0	1084	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1193	-	240	685
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1193	-	238	685
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	21.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	282	-	-	1193	-
HCM Lane V/C Ratio	0.213	-	-	0.004	-
HCM Control Delay (s)	21.2	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Intersection	
Intersection Delay, s/veh	37.7
Intersection LOS	E

Movement	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	298	10	17	38	58	658
Future Vol, veh/h	298	10	17	38	58	658
Peak Hour Factor	0.87	0.87	0.68	0.68	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	343	11	25	56	60	685
Number of Lanes	1	0	1	0	1	1

Approach	EB	NB	SW
Opposing Approach			
Opposing Lanes	0	0	0
Conflicting Approach Left	SW	EB	NB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SW	EB
Conflicting Lanes Right	1	2	1
HCM Control Delay	18.2	10.3	50
HCM LOS	C	B	E

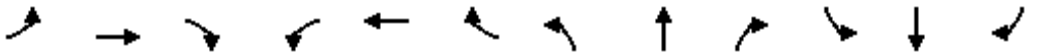
Lane	NBLn1	EBLn1	SWLn1	SWLn2
Vol Left, %	31%	97%	100%	0%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	69%	3%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	308	58	658
LT Vol	17	298	58	0
Through Vol	0	0	0	0
RT Vol	38	10	0	658
Lane Flow Rate	81	354	60	685
Geometry Grp	2	2	7	7
Degree of Util (X)	0.14	0.605	0.107	0.988
Departure Headway (Hd)	6.215	6.155	6.405	5.191
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	584	559	699
Service Time	4.27	4.201	4.144	2.93
HCM Lane V/C Ratio	0.141	0.606	0.107	0.98
HCM Control Delay	10.3	18.2	9.9	53.5
HCM Lane LOS	B	C	A	F
HCM 95th-tile Q	0.5	4	0.4	15.5

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	280	239	250	511	389	1955	201	1193	166
v/c Ratio	0.94	0.44	1.53	0.77	1.59	1.95	0.74	1.12	0.30
Control Delay	83.6	7.4	301.5	15.9	320.2	456.6	63.5	104.6	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.6	7.4	301.5	15.9	320.2	456.6	63.5	104.6	10.5
Queue Length 50th (ft)	207	0	~265	39	~421	~1226	146	~548	21
Queue Length 95th (ft)	#282	33	#430	173	#614	#1412	207	#622	64
Internal Link Dist (ft)	203		139			942		1006	
Turn Bay Length (ft)					275		550		
Base Capacity (vph)	308	551	163	661	244	1003	335	1066	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.43	1.53	0.77	1.59	1.95	0.60	1.12	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	106	184	11	226	485	358	1756	42	171	1014	141
Future Volume (vph)	109	106	184	11	226	485	358	1756	42	171	1014	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1817	1583		1858	1562	1770	3525		1770	3539	1550
Flt Permitted		0.71	1.00		0.46	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1331	1583		864	1562	1770	3525		1770	3539	1550
Peak-hour factor, PHF	0.77	0.77	0.77	0.95	0.95	0.95	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	142	138	239	12	238	511	389	1909	46	201	1193	166
RTOR Reduction (vph)	0	0	185	0	0	366	0	1	0	0	0	89
Lane Group Flow (vph)	0	280	54	0	250	145	389	1954	0	201	1193	77
Confl. Bikes (#/hr)						1			2			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4		4	3		3						6
Actuated Green, G (s)		26.1	26.1		22.0	22.0	16.0	33.0		17.8	35.0	35.0
Effective Green, g (s)		26.1	26.1		22.0	22.0	16.0	33.0		17.8	35.0	35.0
Actuated g/C Ratio		0.22	0.22		0.19	0.19	0.14	0.28		0.15	0.30	0.30
Clearance Time (s)		4.2	4.2		3.5	3.5	3.5	6.0		3.5	5.8	5.8
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		299	355		163	295	243	1001		271	1066	467
v/s Ratio Prot							c0.22	c0.55		0.11	0.34	
v/s Ratio Perm		c0.21	0.03		c0.29	0.09						0.05
v/c Ratio		0.94	0.15		1.53	0.49	1.60	1.95		0.74	1.12	0.16
Uniform Delay, d1		44.2	36.1		47.0	42.1	50.0	41.5		47.0	40.5	29.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		35.3	0.2		268.6	1.3	288.8	431.9		10.4	66.4	0.2
Delay (s)		79.5	36.3		315.6	43.4	338.9	473.4		57.4	107.0	30.0
Level of Service		E	D		F	D	F	F		E	F	C
Approach Delay (s)		59.6			132.8			451.1			92.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	257.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	116.1	Sum of lost time (s)	17.2
Intersection Capacity Utilization	103.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	6	46	103	32	9
Future Vol, veh/h	5	6	46	103	32	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	85	85	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	7	54	121	46	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	282	53	59	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	229	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	708	1014	1545	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	682	1014	1545	-	-	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	809	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	2.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1545	-	830	-	-
HCM Lane V/C Ratio	0.035	-	0.016	-	-
HCM Control Delay (s)	7.4	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	10	13	10	2	2	56	37	26	4	16	0
Future Vol, veh/h	1	10	13	10	2	2	56	37	26	4	16	0
Peak Hour Factor	0.69	0.69	0.69	0.81	0.81	0.81	0.84	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	14	19	12	2	2	67	44	31	5	19	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.5	7.8	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	47%	4%	71%	20%
Vol Thru, %	31%	42%	14%	80%
Vol Right, %	22%	54%	14%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	24	14	20
LT Vol	56	1	10	4
Through Vol	37	10	2	16
RT Vol	26	13	2	0
Lane Flow Rate	142	35	17	24
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.038	0.021	0.027
Departure Headway (Hd)	4.005	3.916	4.306	4.171
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	894	902	821	852
Service Time	2.035	1.995	2.386	2.225
HCM Lane V/C Ratio	0.159	0.039	0.021	0.028
HCM Control Delay	7.8	7.2	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL
Lane Configurations												
Traffic Vol, veh/h	77	8	56	42	9	27	25	9	398	44	1	44
Future Vol, veh/h	77	8	56	42	9	27	25	9	398	44	1	44
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.92	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	12	81	61	13	39	36	13	577	64	1	64
Number of Lanes	0	1	0	0	1	0	0	1	2	0	0	1

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	16.8	13.8	20.6	15.3
HCM LOS	C	B	C	C

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	55%	54%	100%	0%	0%
Vol Thru, %	0%	100%	75%	6%	12%	0%	100%	75%
Vol Right, %	0%	0%	25%	40%	35%	0%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	265	177	141	78	45	191	126
LT Vol	34	0	0	77	42	45	0	0
Through Vol	0	265	133	8	9	0	191	95
RT Vol	0	0	44	56	27	0	0	31
Lane Flow Rate	49	385	256	204	113	65	276	183
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.1	0.725	0.47	0.445	0.257	0.135	0.538	0.347
Departure Headway (Hd)	7.296	6.783	6.605	7.838	8.185	7.518	7.004	6.828
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	491	535	545	460	439	477	514	527
Service Time	5.038	4.525	4.346	5.586	5.938	5.264	4.75	4.573
HCM Lane V/C Ratio	0.1	0.72	0.47	0.443	0.257	0.136	0.537	0.347
HCM Control Delay	10.9	25.5	15.1	16.8	13.8	11.4	17.7	13.2
HCM Lane LOS	B	D	C	C	B	B	C	B
HCM 95th-tile Q	0.3	6	2.5	2.2	1	0.5	3.2	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWT	SWR
Lane Configurations		
Traffic Vol, veh/h	286	31
Future Vol, veh/h	286	31
Peak Hour Factor	0.69	0.69
Heavy Vehicles, %	2	2
Mvmt Flow	414	45
Number of Lanes	2	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	82	54	49	93	110	45	56	99
Average Queue (ft)	37	20	15	48	62	14	26	48
95th Queue (ft)	64	41	38	75	98	31	44	79
Link Distance (ft)	643	1200		269	269		571	571
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1		0	0	
Queuing Penalty (veh)			0	1		0	0	

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT
Lane Configurations												
Traffic Vol, veh/h	86	26	40	16	10	12	12	27	249	68	67	422
Future Vol, veh/h	86	26	40	16	10	12	12	27	249	68	67	422
Peak Hour Factor	0.91	0.91	0.91	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	29	44	19	12	14	15	34	311	85	77	485
Number of Lanes	0	1	0	0	1	0	0	1	2	0	1	2

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	13.6	11	11.7	13.7
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	57%	42%	100%	0%	0%
Vol Thru, %	0%	100%	55%	17%	26%	0%	100%	59%
Vol Right, %	0%	0%	45%	26%	32%	0%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	166	151	152	38	67	281	239
LT Vol	39	0	0	86	16	67	0	0
Through Vol	0	166	83	26	10	0	281	141
RT Vol	0	0	68	40	12	0	0	98
Lane Flow Rate	49	208	189	167	45	77	323	274
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.091	0.358	0.309	0.334	0.092	0.138	0.534	0.431
Departure Headway (Hd)	6.721	6.213	5.893	7.196	7.442	6.454	5.947	5.655
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	532	577	608	498	479	554	605	636
Service Time	4.478	3.97	3.649	4.958	5.22	4.203	3.696	3.404
HCM Lane V/C Ratio	0.092	0.36	0.311	0.335	0.094	0.139	0.534	0.431
HCM Control Delay	10.2	12.4	11.3	13.6	11	10.2	15.4	12.7
HCM Lane LOS	B	B	B	B	B	B	C	B
HCM 95th-tile Q	0.3	1.6	1.3	1.5	0.3	0.5	3.2	2.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWR
Lane Configurations	
Traffic Vol, veh/h	98
Future Vol, veh/h	98
Peak Hour Factor	0.87
Heavy Vehicles, %	2
Mvmt Flow	113
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	L	T	TR
Maximum Queue (ft)	96	43	70	85	94	50	249	378
Average Queue (ft)	42	14	22	42	55	16	57	122
95th Queue (ft)	72	31	53	67	82	34	258	340
Link Distance (ft)	646	1200		274	274		572	572
Upstream Blk Time (%)							2	3
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1		0	0	
Queuing Penalty (veh)			0	0		0	0	

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL
Lane Configurations												
Traffic Vol, veh/h	77	8	56	49	10	33	25	11	402	44	1	45
Future Vol, veh/h	77	8	56	49	10	33	25	11	402	44	1	45
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.92	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	12	81	71	14	48	36	16	583	64	1	65
Number of Lanes	0	1	0	0	1	0	0	1	2	0	0	1

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	17.4	14.7	22.2	16.4
HCM LOS	C	B	C	C

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	55%	53%	100%	0%	0%
Vol Thru, %	0%	100%	75%	6%	11%	0%	100%	74%
Vol Right, %	0%	0%	25%	40%	36%	0%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	268	178	141	92	46	199	134
LT Vol	36	0	0	77	49	46	0	0
Through Vol	0	268	134	8	10	0	199	99
RT Vol	0	0	44	56	33	0	0	35
Lane Flow Rate	52	388	258	204	133	66	288	195
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.108	0.752	0.486	0.456	0.308	0.142	0.573	0.378
Departure Headway (Hd)	7.481	6.967	6.789	8.032	8.303	7.685	7.17	6.982
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	478	520	529	448	432	466	504	514
Service Time	5.235	4.721	4.542	5.788	6.064	5.441	4.926	4.738
HCM Lane V/C Ratio	0.109	0.746	0.488	0.455	0.308	0.142	0.571	0.379
HCM Control Delay	11.1	28	15.8	17.4	14.7	11.7	19.2	14
HCM Lane LOS	B	D	C	C	B	B	C	B
HCM 95th-tile Q	0.4	6.5	2.6	2.3	1.3	0.5	3.6	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWT	SWR
Lane Configurations		
Traffic Vol, veh/h	298	35
Future Vol, veh/h	298	35
Peak Hour Factor	0.69	0.69
Heavy Vehicles, %	2	2
Mvmt Flow	432	51
Number of Lanes	2	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	85	64	62	94	117	51	69	118
Average Queue (ft)	41	21	17	48	59	15	29	49
95th Queue (ft)	67	43	42	78	94	35	53	85
Link Distance (ft)	650	1200		278	278		572	572
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1		0	0	
Queuing Penalty (veh)			0	1		0	0	

Intersection: 5: Claremont Dr (E) & Sneath Ln

Movement	EB	B21	NB	SW	SW
Directions Served	LR	T	LR	L	R
Maximum Queue (ft)	204	116	63	36	99
Average Queue (ft)	148	11	35	14	52
95th Queue (ft)	213	52	58	40	81
Link Distance (ft)	131	439	433		562
Upstream Blk Time (%)	14				
Queuing Penalty (veh)	86				
Storage Bay Dist (ft)				75	
Storage Blk Time (%)					1
Queuing Penalty (veh)					0

Zone Summary

Zone wide Queuing Penalty: 87

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT
Lane Configurations												
Traffic Vol, veh/h	86	26	40	22	10	16	14	32	256	68	68	423
Future Vol, veh/h	86	26	40	22	10	16	14	32	256	68	68	423
Peak Hour Factor	0.91	0.91	0.91	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	29	44	26	12	19	18	40	320	85	78	486
Number of Lanes	0	1	0	0	1	0	0	1	2	0	1	2

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	13.8	11.3	12	14.1
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	57%	46%	100%	0%	0%
Vol Thru, %	0%	100%	56%	17%	21%	0%	100%	57%
Vol Right, %	0%	0%	44%	26%	33%	0%	0%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	171	153	152	48	68	282	249
LT Vol	46	0	0	86	22	68	0	0
Through Vol	0	171	85	26	10	0	282	141
RT Vol	0	0	68	40	16	0	0	108
Lane Flow Rate	58	213	192	167	56	78	324	286
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.109	0.374	0.319	0.339	0.118	0.142	0.544	0.456
Departure Headway (Hd)	6.814	6.306	5.99	7.307	7.533	6.55	6.042	5.733
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	524	567	598	491	473	546	596	627
Service Time	4.579	4.07	3.754	5.079	5.32	4.307	3.799	3.49
HCM Lane V/C Ratio	0.111	0.376	0.321	0.34	0.118	0.143	0.544	0.456
HCM Control Delay	10.4	12.8	11.6	13.8	11.3	10.4	15.8	13.3
HCM Lane LOS	B	B	B	B	B	B	C	B
HCM 95th-tile Q	0.4	1.7	1.4	1.5	0.4	0.5	3.3	2.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWR
Lane Configurations	
Traffic Vol, veh/h	108
Future Vol, veh/h	108
Peak Hour Factor	0.87
Heavy Vehicles, %	2
Mvmt Flow	124
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	L	T	TR
Maximum Queue (ft)	102	51	46	79	101	49	475	500
Average Queue (ft)	46	16	19	39	56	18	59	136
95th Queue (ft)	79	34	43	65	85	36	250	346
Link Distance (ft)	650	1200		278	278		572	572
Upstream Blk Time (%)							1	2
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1		0	0	
Queuing Penalty (veh)			0	0		0	0	

Intersection	
Intersection Delay, s/veh	20.8
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL
Lane Configurations												
Traffic Vol, veh/h	102	8	56	34	11	28	25	9	398	58	1	49
Future Vol, veh/h	102	8	56	34	11	28	25	9	398	58	1	49
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.92	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	148	12	81	49	16	41	36	13	577	84	1	71
Number of Lanes	0	1	0	0	1	0	0	1	2	0	0	1

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	20.4	14.2	23.5	18.9
HCM LOS	C	B	C	C

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	61%	47%	100%	0%	0%
Vol Thru, %	0%	100%	70%	5%	15%	0%	100%	80%
Vol Right, %	0%	0%	30%	34%	38%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	265	191	166	73	50	224	140
LT Vol	34	0	0	102	34	50	0	0
Through Vol	0	265	133	8	11	0	224	112
RT Vol	0	0	58	56	28	0	0	28
Lane Flow Rate	49	385	276	241	106	72	325	203
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.105	0.763	0.531	0.546	0.252	0.156	0.657	0.402
Departure Headway (Hd)	7.659	7.144	6.924	8.166	8.564	7.8	7.284	7.14
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	467	504	519	440	419	459	497	503
Service Time	5.418	4.902	4.682	5.925	6.334	5.559	5.043	4.899
HCM Lane V/C Ratio	0.105	0.764	0.532	0.548	0.253	0.157	0.654	0.404
HCM Control Delay	11.3	29.5	17.3	20.4	14.2	12	23	14.7
HCM Lane LOS	B	D	C	C	B	B	C	B
HCM 95th-tile Q	0.3	6.7	3.1	3.2	1	0.5	4.7	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWT	SWR
Lane Configurations		
Traffic Vol, veh/h	336	28
Future Vol, veh/h	336	28
Peak Hour Factor	0.69	0.69
Heavy Vehicles, %	2	2
Mvmt Flow	487	41
Number of Lanes	2	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	91	42	54	81	106	51	69	100
Average Queue (ft)	45	18	14	43	55	16	29	52
95th Queue (ft)	76	33	39	70	85	34	54	82
Link Distance (ft)	646	1200		274	274		572	572
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1			0	
Queuing Penalty (veh)			0	0			0	

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT
Lane Configurations												
Traffic Vol, veh/h	95	26	40	10	10	8	14	30	278	88	71	428
Future Vol, veh/h	95	26	40	10	10	8	14	30	278	88	71	428
Peak Hour Factor	0.91	0.91	0.91	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	29	44	12	12	9	18	38	348	110	82	492
Number of Lanes	0	1	0	0	1	0	0	1	2	0	1	2

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	14.2	11	12.4	14.1
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	59%	36%	100%	0%	0%
Vol Thru, %	0%	100%	51%	16%	36%	0%	100%	62%
Vol Right, %	0%	0%	49%	25%	29%	0%	0%	38%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	44	185	181	161	28	71	285	232
LT Vol	44	0	0	95	10	71	0	0
Through Vol	0	185	93	26	10	0	285	143
RT Vol	0	0	88	40	8	0	0	89
Lane Flow Rate	55	232	226	177	33	82	328	266
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.103	0.401	0.369	0.36	0.07	0.149	0.551	0.427
Departure Headway (Hd)	6.745	6.236	5.89	7.318	7.615	6.551	6.043	5.77
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	575	607	490	468	546	594	623
Service Time	4.509	4	3.653	5.085	5.402	4.308	3.8	3.527
HCM Lane V/C Ratio	0.104	0.403	0.372	0.361	0.071	0.15	0.552	0.427
HCM Control Delay	10.3	13.2	12.1	14.2	11	10.5	16	12.8
HCM Lane LOS	B	B	B	B	B	B	C	B
HCM 95th-tile Q	0.3	1.9	1.7	1.6	0.2	0.5	3.3	2.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWR
Lane Configurations	
Traffic Vol, veh/h	89
Future Vol, veh/h	89
Peak Hour Factor	0.87
Heavy Vehicles, %	2
Mvmt Flow	102
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	L	T	TR
Maximum Queue (ft)	85	26	66	93	108	46	49	175
Average Queue (ft)	41	10	21	48	64	17	24	77
95th Queue (ft)	70	24	50	78	98	33	42	133
Link Distance (ft)	646	1200		274	274		572	572
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1		0	0	
Queuing Penalty (veh)			0	0		0	0	

Intersection	
Intersection Delay, s/veh	21.7
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWU	SWL
Lane Configurations												
Traffic Vol, veh/h	102	8	56	42	11	34	25	11	398	58	1	49
Future Vol, veh/h	102	8	56	42	11	34	25	11	398	58	1	49
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.92	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	148	12	81	61	16	49	36	16	577	84	1	71
Number of Lanes	0	1	0	0	1	0	0	1	2	0	0	1

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	21	15.1	24.8	19.6
HCM LOS	C	C	C	C

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	61%	48%	100%	0%	0%
Vol Thru, %	0%	100%	70%	5%	13%	0%	100%	78%
Vol Right, %	0%	0%	30%	34%	39%	0%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	265	191	166	87	50	224	143
LT Vol	36	0	0	102	42	50	0	0
Through Vol	0	265	133	8	11	0	224	112
RT Vol	0	0	58	56	34	0	0	31
Lane Flow Rate	52	385	276	241	126	72	325	207
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.113	0.779	0.543	0.555	0.302	0.159	0.67	0.419
Departure Headway (Hd)	7.807	7.291	7.071	8.305	8.636	7.948	7.431	7.275
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	458	496	508	433	415	451	484	493
Service Time	5.572	5.055	4.835	6.07	6.413	5.714	5.197	5.04
HCM Lane V/C Ratio	0.114	0.776	0.543	0.557	0.304	0.16	0.671	0.42
HCM Control Delay	11.6	31.4	18	21	15.1	12.2	24.1	15.2
HCM Lane LOS	B	D	C	C	C	B	C	C
HCM 95th-tile Q	0.4	7	3.2	3.3	1.3	0.6	4.9	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWT	SWR
Lane Configurations		
Traffic Vol, veh/h	336	31
Future Vol, veh/h	336	31
Peak Hour Factor	0.69	0.69
Heavy Vehicles, %	2	2
Mvmt Flow	487	45
Number of Lanes	2	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	L	T	TR
Maximum Queue (ft)	93	40	69	86	104	45	48	295
Average Queue (ft)	44	14	27	45	61	18	25	100
95th Queue (ft)	74	30	54	72	91	33	41	209
Link Distance (ft)	648	1200		276	276		572	572
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1		0	0	
Queuing Penalty (veh)			0	1		0	0	

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEU	NEL	NET	NER	SWL	SWT
Lane Configurations												
Traffic Vol, veh/h	95	26	40	16	10	12	16	35	278	88	71	428
Future Vol, veh/h	95	26	40	16	10	12	16	35	278	88	71	428
Peak Hour Factor	0.91	0.91	0.91	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	29	44	19	12	14	20	44	348	110	82	492
Number of Lanes	0	1	0	0	1	0	0	1	2	0	1	2

Approach	NB	SB	NE	SW
Opposing Approach	SB	NB	SW	NE
Opposing Lanes	1	1	3	3
Conflicting Approach Left	NE	SW	SB	NB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	SW	NE	NB	SB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	14.4	11.3	12.6	14.5
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NELn3	NBLn1	SBLn1	SWLn1	SWLn2	SWLn3
Vol Left, %	100%	0%	0%	59%	42%	100%	0%	0%
Vol Thru, %	0%	100%	51%	16%	26%	0%	100%	59%
Vol Right, %	0%	0%	49%	25%	32%	0%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	185	181	161	38	71	285	241
LT Vol	51	0	0	95	16	71	0	0
Through Vol	0	185	93	26	10	0	285	143
RT Vol	0	0	88	40	12	0	0	98
Lane Flow Rate	64	232	226	177	45	82	328	277
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.121	0.407	0.375	0.364	0.095	0.15	0.558	0.448
Departure Headway (Hd)	6.83	6.321	5.974	7.406	7.683	6.633	6.125	5.835
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	523	568	598	485	464	539	587	614
Service Time	4.597	4.088	3.741	5.179	5.477	4.396	3.888	3.598
HCM Lane V/C Ratio	0.122	0.408	0.378	0.365	0.097	0.152	0.559	0.451
HCM Control Delay	10.5	13.4	12.3	14.4	11.3	10.6	16.4	13.3
HCM Lane LOS	B	B	B	B	B	B	C	B
HCM 95th-tile Q	0.4	2	1.7	1.6	0.3	0.5	3.4	2.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWR
Lane Configurations	
Traffic Vol, veh/h	98
Future Vol, veh/h	98
Peak Hour Factor	0.87
Heavy Vehicles, %	2
Mvmt Flow	113
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection: 2: San Bruno Ave & Glenview Dr

Movement	NB	SB	NE	NE	NE	SW	SW	SW
Directions Served	LTR	LTR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	98	67	41	94	107	37	65	138
Average Queue (ft)	43	22	15	45	56	15	29	55
95th Queue (ft)	71	44	37	78	89	29	52	93
Link Distance (ft)	645	1200		272	272		572	572
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65			65		
Storage Blk Time (%)			0	1		0	0	
Queuing Penalty (veh)			0	1		0	0	

Appendix C
Signal Warrants

Traffic Signal Warrant Analysis Workbook

STUDY AND ANALYSIS INFORMATION

Municipality:	San Bruno	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	ADM
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	2/5/2014 - 2/6/2014
Day of the Week:	Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	San Bruno Ave	
Major Street Approach #1 Direction:	E-Bound	
Major Street Approach #2 Direction:	W-Bound	
Number of Lanes for Moving Traffic on Each Major Street Approach:	2	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	40	**MPH**

Minor Street Information

Minor Street Name and Route Number:	Glenview Dr	
Minor Street Approach #1 Direction:	N-Bound	
Minor Street Approach #2 Direction:	S-Bound	
Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	Yes	No
Warrant 2, Four-Hour Vehicular Volume	Yes	No
Warrant 3, Peak Hour	Yes	No
Warrant 4, Pedestrian Volume	No	N/A
Warrant 5, School Crossing	No	N/A
Warrant 6, Coordinated Signal System	No	N/A
Warrant 7, Crash Experience	No	N/A
Warrant 8, Roadway Network	Yes	No
Warrant 9, Intersection Near a Grade Crossing	No	N/A
Warrant PA-1, ADT Volume Warrant	No	N/A
Warrant PA-2, Midblock and Trail Crossings	No	N/A

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH

Time Interval		Major Street Approach #1 (E-Bound)	Major Street Approach #2 (W-Bound)	Major Street Combined	Minor Street Approach #1 (N-Bound)	Minor Street Approach #2 (S-Bound)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 AM	12:14 AM			0		
12:15 AM	12:29 AM			0		
12:30 AM	12:44 AM			0		
12:45 AM	12:59 AM			0		
1:00 AM	1:14 AM			0		
1:15 AM	1:29 AM			0		
1:30 AM	1:44 AM			0		
1:45 AM	1:59 AM			0		
2:00 AM	2:14 AM			0		
2:15 AM	2:29 AM			0		
2:30 AM	2:44 AM			0		
2:45 AM	2:59 AM			0		
3:00 AM	3:14 AM			0		
3:15 AM	3:29 AM			0		
3:30 AM	3:44 AM			0		
3:45 AM	3:59 AM			0		
4:00 AM	4:14 AM			0		
4:15 AM	4:29 AM			0		
4:30 AM	4:44 AM			0		
4:45 AM	4:59 AM			0		
5:00 AM	5:14 AM			0		
5:15 AM	5:29 AM			0		
5:30 AM	5:44 AM			0		
5:45 AM	5:59 AM			0		
6:00 AM	6:14 AM	27	20	47	17	7
6:15 AM	6:29 AM	21	30	51	17	5
6:30 AM	6:44 AM	30	27	57	28	13
6:45 AM	6:59 AM	60	41	101	27	16
7:00 AM	7:14 AM	46	47	93	23	15
7:15 AM	7:29 AM	51	57	108	22	23
7:30 AM	7:44 AM	100	64	164	38	45
7:45 AM	7:59 AM	126	112	238	29	36
8:00 AM	8:14 AM	128	122	250	49	34
8:15 AM	8:29 AM	119	102	221	35	17
8:30 AM	8:44 AM	118	75	193	36	22
8:45 AM	8:59 AM	116	84	200	29	11
9:00 AM	9:14 AM	87	78	165	37	11
9:15 AM	9:29 AM	86	83	169	29	13
9:30 AM	9:44 AM	79	60	139	30	14
9:45 AM	9:59 AM	59	63	122	23	9
10:00 AM	10:14 AM			0		
10:15 AM	10:29 AM			0		
10:30 AM	10:44 AM			0		
10:45 AM	10:59 AM			0		
11:00 AM	11:14 AM			0		
11:15 AM	11:29 AM			0		
11:30 AM	11:44 AM			0		
11:45 AM	11:59 AM			0		
12:00 PM	12:14 PM			0		
12:15 PM	12:29 PM			0		
12:30 PM	12:44 PM			0		
12:45 PM	12:59 PM			0		
1:00 PM	1:14 PM			0		
1:15 PM	1:29 PM			0		
1:30 PM	1:44 PM			0		
1:45 PM	1:59 PM			0		
2:00 PM	2:14 PM	96	75	171	39	12
2:15 PM	2:29 PM	109	62	171	32	9
2:30 PM	2:44 PM	97	66	163	29	13
2:45 PM	2:59 PM	150	85	235	34	18
3:00 PM	3:14 PM	112	104	216	36	19
3:15 PM	3:29 PM	110	110	220	30	15
3:30 PM	3:44 PM	108	121	229	38	13
3:45 PM	3:59 PM	124	81	205	40	16
4:00 PM	4:14 PM	111	88	199	42	8
4:15 PM	4:29 PM	101	90	191	47	9
4:30 PM	4:44 PM	107	110	217	30	7
4:45 PM	4:59 PM	110	117	227	33	15
5:00 PM	5:14 PM	95	142	237	35	7
5:15 PM	5:29 PM	94	141	235	45	17
5:30 PM	5:44 PM	106	151	257	39	7
5:45 PM	5:59 PM	87	170	257	43	18
6:00 PM	6:14 PM	95	126	221	34	14
6:15 PM	6:29 PM	88	113	201	29	21
6:30 PM	6:44 PM	86	114	200	36	6
6:45 PM	6:59 PM	83	90	173	30	16
7:00 PM	7:14 PM			0		
7:15 PM	7:29 PM			0		
7:30 PM	7:44 PM			0		
7:45 PM	7:59 PM			0		
8:00 PM	8:14 PM			0		
8:15 PM	8:29 PM			0		
8:30 PM	8:44 PM			0		
8:45 PM	8:59 PM			0		
9:00 PM	9:14 PM			0		
9:15 PM	9:29 PM			0		
9:30 PM	9:44 PM			0		
9:45 PM	9:59 PM			0		
10:00 PM	10:14 PM			0		
10:15 PM	10:29 PM			0		
10:30 PM	10:44 PM			0		
10:45 PM	10:59 PM			0		
11:00 PM	11:14 PM			0		
11:15 PM	11:29 PM			0		
11:30 PM	11:44 PM			0		
11:45 PM	11:59 PM			0		
	Approach Totals:	3322	3221	6543	1190	551

Traffic Signal Warrant Analysis Workbook

MUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Combination of Conditions A and B Necessary?*: No

**Only applicable for Warrant 1 if after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems. See Section 4C.02 of the 2009 MUTCD for application.*

Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor street approach (one direction only)			
Major Street	**Minor Street**	**100%**	**80%**	**70%**	**56%**	**100%**	**80%**	**70%**	**56%**
1	**1**	500	400	350	280	150	120	105	84
2 or More	**1**	600	480	420	336	150	120	105	84
2 or More	**2 or More**	600	480	420	336	200	160	140	112
1	**2 or More**	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor street approach (one direction only)			
Major Street	**Minor Street**	**100%**	**80%**	**70%**	**56%**	**100%**	**80%**	**70%**	**56%**
1	**1**	750	600	525	420	75	60	53	42
2 or More	**1**	900	720	630	504	75	60	53	42
2 or More	**2 or More**	900	720	630	504	100	80	70	56
1	**2 or More**	750	600	525	420	100	80	70	56

Condition A Evaluation

Number of Unique Hours Met: 3 **Condition A Satisfied?** No

Condition B Evaluation

Number of Unique Hours Met: 4 **Condition B Satisfied?** No

Combination of Condition A and Condition B Evaluation

Number of Unique Hours Met for Condition A: N/A

Number of Unique Hours Met for Condition B: N/A

Combination of Condition A and Condition B Satisfied? N/A

MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Total Number of Unique Hours Met On Figure 4C-1
1

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 AM	0	0	
12:15 AM	0	0	
12:30 AM	0	0	
12:45 AM	0	0	
1:00 AM	0	0	
1:15 AM	0	0	
1:30 AM	0	0	
1:45 AM	0	0	
2:00 AM	0	0	
2:15 AM	0	0	
2:30 AM	0	0	
2:45 AM	0	0	
3:00 AM	0	0	
3:15 AM	0	0	
3:30 AM	0	0	
3:45 AM	0	0	
4:00 AM	0	0	
4:15 AM	0	0	
4:30 AM	0	0	
4:45 AM	0	0	
5:00 AM	0	0	
5:15 AM	47	17	
5:30 AM	98	34	
5:45 AM	155	62	
6:00 AM	256	89	
6:15 AM	302	95	
6:30 AM	359	100	
6:45 AM	466	110	
7:00 AM	603	119	
7:15 AM	760	138	
7:30 AM	873	151	
7:45 AM	902	149	
8:00 AM	864	149	
8:15 AM	779	137	
8:30 AM	727	131	
8:45 AM	673	125	
9:00 AM	595	119	
9:15 AM	430	82	
9:30 AM	261	53	
9:45 AM	122	23	
10:00 AM	0	0	
10:15 AM	0	0	
10:30 AM	0	0	
10:45 AM	0	0	
11:00 AM	0	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	0	0	
12:00 PM	0	0	
12:15 PM	0	0	
12:30 PM	0	0	
12:45 PM	0	0	
1:00 PM	0	0	
1:15 PM	171	39	
1:30 PM	342	71	
1:45 PM	505	100	
2:00 PM	740	134	
2:15 PM	785	131	
2:30 PM	834	129	
2:45 PM	900	138	
3:00 PM	870	144	
3:15 PM	853	150	
3:30 PM	824	167	
3:45 PM	812	159	
4:00 PM	834	152	
4:15 PM	872	145	
4:30 PM	916	143	
4:45 PM	956	152	
5:00 PM	986	162	Met
5:15 PM	970	161	Met
5:30 PM	936	145	
5:45 PM	879	142	
6:00 PM	795	129	
6:15 PM	574	95	
6:30 PM	373	66	
6:45 PM	173	30	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	
8:00 PM	0	0	
8:15 PM	0	0	
8:30 PM	0	0	
8:45 PM	0	0	
9:00 PM	0	0	
9:15 PM	0	0	
9:30 PM	0	0	
9:45 PM	0	0	
10:00 PM	0	0	
10:15 PM	0	0	
10:30 PM	0	0	
10:45 PM	0	0	
11:00 PM	0	0	

MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	No
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 AM	0	0	
12:15 AM	0	0	
12:30 AM	0	0	
12:45 AM	0	0	
1:00 AM	0	0	
1:15 AM	0	0	
1:30 AM	0	0	
1:45 AM	0	0	
2:00 AM	0	0	
2:15 AM	0	0	
2:30 AM	0	0	
2:45 AM	0	0	
3:00 AM	0	0	
3:15 AM	0	0	
3:30 AM	0	0	
3:45 AM	0	0	
4:00 AM	0	0	
4:15 AM	0	0	
4:30 AM	0	0	
4:45 AM	0	0	
5:00 AM	0	0	
5:15 AM	47	17	
5:30 AM	98	34	
5:45 AM	155	62	
6:00 AM	256	89	
6:15 AM	302	95	
6:30 AM	359	100	
6:45 AM	466	110	
7:00 AM	603	119	
7:15 AM	760	138	
7:30 AM	873	151	
7:45 AM	902	149	
8:00 AM	864	149	
8:15 AM	779	137	
8:30 AM	727	131	
8:45 AM	673	125	
9:00 AM	595	119	
9:15 AM	430	82	
9:30 AM	261	53	
9:45 AM	122	23	
10:00 AM	0	0	
10:15 AM	0	0	
10:30 AM	0	0	
10:45 AM	0	0	
11:00 AM	0	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	0	0	
12:00 PM	0	0	
12:15 PM	0	0	
12:30 PM	0	0	
12:45 PM	0	0	
1:00 PM	0	0	
1:15 PM	171	39	
1:30 PM	342	71	
1:45 PM	505	100	
2:00 PM	740	134	
2:15 PM	785	131	
2:30 PM	834	129	
2:45 PM	900	138	
3:00 PM	870	144	
3:15 PM	853	150	
3:30 PM	824	167	
3:45 PM	812	159	
4:00 PM	834	152	
4:15 PM	872	145	
4:30 PM	916	143	
4:45 PM	956	152	
5:00 PM	986	162	
5:15 PM	970	161	
5:30 PM	936	145	
5:45 PM	879	142	
6:00 PM	795	129	
6:15 PM	574	95	
6:30 PM	373	66	
6:45 PM	173	30	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	
8:00 PM	0	0	
8:15 PM	0	0	
8:30 PM	0	0	
8:45 PM	0	0	
9:00 PM	0	0	
9:15 PM	0	0	
9:30 PM	0	0	
9:45 PM	0	0	
10:00 PM	0	0	
10:15 PM	0	0	
10:30 PM	0	0	
10:45 PM	0	0	
11:00 PM	0	0	

MUTCD WARRANT 7, CRASH EXPERIENCE

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Has adequate trial of alternatives with satisfactory observance and enforcement failed to reduce the crash frequency?	N/A
Five or more reportable and/or non-reportable crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period during the most recent 3 years of available crash data.* **If applicable, attach a summary of the crash data analysis used for this criterion.*	N/A
For each of any 8 hours of an average day, the vehicles per hour given in both the 80% columns of Condition A in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection.	**No**
For each of any 8 hours of an average day, the vehicles per hour given in both the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection.	**No**
The volume of pedestrian traffic is not less than 80% of the requirements specified in Warrant 4, the Pedestrian Volume warrant.* **If applicable, attach all supporting calculations and documentation.*	N/A

MUTCD WARRANT 8, ROADWAY NETWORK*

Is the major street classified as an Urban Extension, Principal Arterial, or Minor Arterial that is a reasonable connection between two Principal Arterials and/or Urban Extensions as shown on the official Functional Classification Map?	Yes
Does the intersection have a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1,2, and 3 during an average weekday?	No
Does the intersection have a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No
Is the major street part of the street or highway system that serves as the principal roadway network for through traffic flow?	Yes
Does the major street include rural or suburban highways outside, entering, or traversing a city?	No
Does the major street appear as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study?	Yes

**Refer to Section 4.3 of PennDOT Publication 46 (Traffic Engineering Manual) for additional Department documentation requirements to justify the installation of a signal under Warrant 8. Attach all supplementary documentation and calculations, especially those relating to traffic volume projections and subsequent Warrant analyses.*

STUDY AND ANALYSIS INFORMATION

Municipality:	San Bruno	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	ADM
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	5/15/2019
Day of the Week:	Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	Sneath Lane
Major Street Approach #1 Direction:	E-Bound
Major Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	30	**MPH**

Minor Street Information

Minor Street Name and Route Number:	Claremont Dr (E)
Minor Street Approach #1 Direction:	N-Bound
Minor Street Approach #2 Direction:	N/A

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**No**	**N/A**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**No**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**Yes**	**No**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH						
Time Interval		Major Street Approach #1 (E-Bound)	Major Street Approach #2 (W-Bound)	Major Street Combined	Minor Street Approach #1 (N-Bound)	Minor Street Approach #2 (N/A)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 AM	12:14 AM			0		
12:15 AM	12:29 AM			0		
12:30 AM	12:44 AM			0		
12:45 AM	12:59 AM			0		
1:00 AM	1:14 AM			0		
1:15 AM	1:29 AM			0		
1:30 AM	1:44 AM			0		
1:45 AM	1:59 AM			0		
2:00 AM	2:14 AM			0		
2:15 AM	2:29 AM			0		
2:30 AM	2:44 AM			0		
2:45 AM	2:59 AM			0		
3:00 AM	3:14 AM			0		
3:15 AM	3:29 AM			0		
3:30 AM	3:44 AM			0		
3:45 AM	3:59 AM			0		
4:00 AM	4:14 AM			0		
4:15 AM	4:29 AM			0		
4:30 AM	4:44 AM			0		
4:45 AM	4:59 AM			0		
5:00 AM	5:14 AM			0		
5:15 AM	5:29 AM			0		
5:30 AM	5:44 AM			0		
5:45 AM	5:59 AM			0		
6:00 AM	6:14 AM			0		
6:15 AM	6:29 AM			0		
6:30 AM	6:44 AM			0		
6:45 AM	6:59 AM			0		
7:00 AM	7:14 AM	101	23	124	12	
7:15 AM	7:29 AM	157	39	196	24	
7:30 AM	7:44 AM	173	45	218	26	
7:45 AM	7:59 AM	143	91	234	31	
8:00 AM	8:14 AM	166	93	259	24	
8:15 AM	8:29 AM	182	54	236	33	
8:30 AM	8:44 AM	164	48	212	33	
8:45 AM	8:59 AM	147	56	203	10	
9:00 AM	9:14 AM			0		
9:15 AM	9:29 AM			0		
9:30 AM	9:44 AM			0		
9:45 AM	9:59 AM			0		
10:00 AM	10:14 AM			0		
10:15 AM	10:29 AM			0		
10:30 AM	10:44 AM			0		
10:45 AM	10:59 AM			0		
11:00 AM	11:14 AM			0		
11:15 AM	11:29 AM			0		
11:30 AM	11:44 AM			0		
11:45 AM	11:59 AM			0		
12:00 PM	12:14 PM			0		
12:15 PM	12:29 PM			0		
12:30 PM	12:44 PM			0		
12:45 PM	12:59 PM			0		
1:00 PM	1:14 PM			0		
1:15 PM	1:29 PM			0		
1:30 PM	1:44 PM			0		
1:45 PM	1:59 PM			0		
2:00 PM	2:14 PM			0		
2:15 PM	2:29 PM			0		
2:30 PM	2:44 PM			0		
2:45 PM	2:59 PM			0		
3:00 PM	3:14 PM			0		
3:15 PM	3:29 PM			0		
3:30 PM	3:44 PM			0		
3:45 PM	3:59 PM			0		
4:00 PM	4:14 PM	85	132	217	18	
4:15 PM	4:29 PM	64	125	189	15	
4:30 PM	4:44 PM	71	124	195	11	
4:45 PM	4:59 PM	67	165	232	12	
5:00 PM	5:14 PM	71	184	255	15	
5:15 PM	5:29 PM	56	187	243	22	
5:30 PM	5:44 PM	79	173	252	7	
5:45 PM	5:59 PM	69	174	243	12	
6:00 PM	6:14 PM	76	171	247	15	
6:15 PM	6:29 PM	48	147	195	11	
6:30 PM	6:44 PM	60	153	213	4	
6:45 PM	6:59 PM	49	130	179	7	
7:00 PM	7:14 PM			0		
7:15 PM	7:29 PM			0		
7:30 PM	7:44 PM			0		
7:45 PM	7:59 PM			0		
8:00 PM	8:14 PM			0		
8:15 PM	8:29 PM			0		
8:30 PM	8:44 PM			0		
8:45 PM	8:59 PM			0		
9:00 PM	9:14 PM			0		
9:15 PM	9:29 PM			0		
9:30 PM	9:44 PM			0		
9:45 PM	9:59 PM			0		
10:00 PM	10:14 PM			0		
10:15 PM	10:29 PM			0		
10:30 PM	10:44 PM			0		
10:45 PM	10:59 PM			0		
11:00 PM	11:14 PM			0		
11:15 PM	11:29 PM			0		
11:30 PM	11:44 PM			0		
11:45 PM	11:59 PM			0		
Approach Totals:		2028	2314	4342	342	0

MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Total Number of Unique Hours Met On Figure 4C-1
1

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 AM	0	0	
12:15 AM	0	0	
12:30 AM	0	0	
12:45 AM	0	0	
1:00 AM	0	0	
1:15 AM	0	0	
1:30 AM	0	0	
1:45 AM	0	0	
2:00 AM	0	0	
2:15 AM	0	0	
2:30 AM	0	0	
2:45 AM	0	0	
3:00 AM	0	0	
3:15 AM	0	0	
3:30 AM	0	0	
3:45 AM	0	0	
4:00 AM	0	0	
4:15 AM	0	0	
4:30 AM	0	0	
4:45 AM	0	0	
5:00 AM	0	0	
5:15 AM	0	0	
5:30 AM	0	0	
5:45 AM	0	0	
6:00 AM	0	0	
6:15 AM	124	12	
6:30 AM	320	36	
6:45 AM	538	62	
7:00 AM	772	93	
7:15 AM	907	105	
7:30 AM	947	114	Met
7:45 AM	941	121	Met
8:00 AM	910	100	
8:15 AM	651	76	
8:30 AM	415	43	
8:45 AM	203	10	
9:00 AM	0	0	
9:15 AM	0	0	
9:30 AM	0	0	
9:45 AM	0	0	
10:00 AM	0	0	
10:15 AM	0	0	
10:30 AM	0	0	
10:45 AM	0	0	
11:00 AM	0	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	0	0	
12:00 PM	0	0	
12:15 PM	0	0	
12:30 PM	0	0	
12:45 PM	0	0	
1:00 PM	0	0	
1:15 PM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	217	18	
3:30 PM	406	33	
3:45 PM	601	44	
4:00 PM	833	56	
4:15 PM	871	53	
4:30 PM	925	60	
4:45 PM	982	56	
5:00 PM	993	56	
5:15 PM	985	56	
5:30 PM	937	45	
5:45 PM	898	42	
6:00 PM	834	37	
6:15 PM	587	22	
6:30 PM	392	11	
6:45 PM	179	7	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	
8:00 PM	0	0	
8:15 PM	0	0	
8:30 PM	0	0	
8:45 PM	0	0	
9:00 PM	0	0	
9:15 PM	0	0	
9:30 PM	0	0	
9:45 PM	0	0	
10:00 PM	0	0	
10:15 PM	0	0	
10:30 PM	0	0	
10:45 PM	0	0	
11:00 PM	0	0	

MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**if applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 AM	0	0	
12:15 AM	0	0	
12:30 AM	0	0	
12:45 AM	0	0	
1:00 AM	0	0	
1:15 AM	0	0	
1:30 AM	0	0	
1:45 AM	0	0	
2:00 AM	0	0	
2:15 AM	0	0	
2:30 AM	0	0	
2:45 AM	0	0	
3:00 AM	0	0	
3:15 AM	0	0	
3:30 AM	0	0	
3:45 AM	0	0	
4:00 AM	0	0	
4:15 AM	0	0	
4:30 AM	0	0	
4:45 AM	0	0	
5:00 AM	0	0	
5:15 AM	0	0	
5:30 AM	0	0	
5:45 AM	0	0	
6:00 AM	0	0	
6:15 AM	124	12	
6:30 AM	320	36	
6:45 AM	538	62	
7:00 AM	772	93	
7:15 AM	907	105	
7:30 AM	947	114	
7:45 AM	941	121	
8:00 AM	910	100	
8:15 AM	651	76	
8:30 AM	415	43	
8:45 AM	203	10	
9:00 AM	0	0	
9:15 AM	0	0	
9:30 AM	0	0	
9:45 AM	0	0	
10:00 AM	0	0	
10:15 AM	0	0	
10:30 AM	0	0	
10:45 AM	0	0	
11:00 AM	0	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	0	0	
12:00 PM	0	0	
12:15 PM	0	0	
12:30 PM	0	0	
12:45 PM	0	0	
1:00 PM	0	0	
1:15 PM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	217	18	
3:30 PM	406	33	
3:45 PM	601	44	
4:00 PM	833	56	
4:15 PM	871	53	
4:30 PM	925	60	
4:45 PM	982	56	
5:00 PM	993	56	
5:15 PM	985	56	
5:30 PM	937	45	
5:45 PM	898	42	
6:00 PM	834	37	
6:15 PM	587	22	
6:30 PM	392	11	
6:45 PM	179	7	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	
8:00 PM	0	0	
8:15 PM	0	0	
8:30 PM	0	0	
8:45 PM	0	0	
9:00 PM	0	0	
9:15 PM	0	0	
9:30 PM	0	0	
9:45 PM	0	0	
10:00 PM	0	0	
10:15 PM	0	0	
10:30 PM	0	0	
10:45 PM	0	0	
11:00 PM	0	0	

Appendix D
Stop Warrants

Stop Warrant Analysis - Existing Scenario

YES	1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
YES	2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
YES	3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

Major Street Speed Limit: 40 MPH

V.1. Threshold: 300*0.7 = 210

V.2. Threshold: 200*0.7 = 140

Cumulative Volume

		San Bruno Ave			Glenview Dr		
From	To	Major EB	Major WB		Minor NB	Minor SB	
6:00 AM	6:14 AM	27	19		16	6	
6:15 AM	6:29 AM	21	28		16	5	
6:30 AM	6:44 AM	30	26		26	12	
6:45 AM	6:59 AM	59	39	249	26	15	122
7:00 AM	7:14 AM	45	44		22	14	
7:15 AM	7:29 AM	50	54		21	21	
7:30 AM	7:44 AM	99	60		36	42	
7:45 AM	7:59 AM	125	106	583	27	33	216
8:00 AM	8:14 AM	127	115		46	32	
8:15 AM	8:29 AM	118	97		33	16	
8:30 AM	8:44 AM	117	71		34	20	
8:45 AM	8:59 AM	114	79	838	28	10	219
9:00 AM	9:14 AM	85	74		34	10	
9:15 AM	9:29 AM	85	79		27	12	
9:30 AM	9:44 AM	78	57		28	13	
9:45 AM	9:59 AM	58	60	576	22	8	154
2:00 PM	2:14 PM	89	73		37	9	
2:15 PM	2:29 PM	102	60		29	7	
2:30 PM	2:44 PM	91	64		27	10	
2:45 PM	2:59 PM	142	83	704	32	14	165
3:00 PM	3:14 PM	106	102		33	15	
3:15 PM	3:29 PM	102	107		28	12	
3:30 PM	3:44 PM	102	118		35	10	
3:45 PM	3:59 PM	115	79	831	37	12	182
4:00 PM	4:14 PM	102	85		39	7	
4:15 PM	4:29 PM	95	88		44	7	
4:30 PM	4:44 PM	98	107		28	6	
4:45 PM	4:59 PM	102	114	791	31	12	174
5:00 PM	5:14 PM	88	138		33	5	
5:15 PM	5:29 PM	86	137		42	14	
5:30 PM	5:44 PM	99	147		36	5	
5:45 PM	5:59 PM	83	165	943	41	14	190
6:00 PM	6:14 PM	90	122		32	12	
6:15 PM	6:29 PM	82	110		27	17	
6:30 PM	6:44 PM	81	111		33	5	
6:45 PM	6:59 PM	79	87	762	28	12	166

Stop Warrant Analysis - Cumulative + Proj

YES	1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
YES	2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
YES	3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

Major Street Speed Limit: 40 MPH
V.1. Threshold: 300*0.7 = 210
V.2. Threshold: 200*0.7 = 140
Cumulative Volume

		San Bruno Ave			Glenview Dr		
From	To	Major EB	Major WB		Minor NB	Minor SB	
6:00 AM	6:14 AM	27	20		17	7	
6:15 AM	6:29 AM	21	30		17	5	
6:30 AM	6:44 AM	30	27		28	13	
6:45 AM	6:59 AM	60	41	256	27	16	130
7:00 AM	7:14 AM	46	47		23	15	
7:15 AM	7:29 AM	51	57		22	23	
7:30 AM	7:44 AM	100	64		38	45	
7:45 AM	7:59 AM	126	112	603	29	36	231
8:00 AM	8:14 AM	128	122		49	34	
8:15 AM	8:29 AM	119	102		35	17	
8:30 AM	8:44 AM	118	75		36	22	
8:45 AM	8:59 AM	116	84	864	29	11	233
9:00 AM	9:14 AM	87	78		37	11	
9:15 AM	9:29 AM	86	83		29	13	
9:30 AM	9:44 AM	79	60		30	14	
9:45 AM	9:59 AM	59	63	595	23	9	166
2:00 PM	2:14 PM	96	75		39	12	
2:15 PM	2:29 PM	109	62		32	9	
2:30 PM	2:44 PM	97	66		29	13	
2:45 PM	2:59 PM	150	85	740	34	18	186
3:00 PM	3:14 PM	112	104		36	19	
3:15 PM	3:29 PM	110	110		30	15	
3:30 PM	3:44 PM	108	121		38	13	
3:45 PM	3:59 PM	124	81	870	40	16	207
4:00 PM	4:14 PM	111	88		42	8	
4:15 PM	4:29 PM	101	90		47	9	
4:30 PM	4:44 PM	107	110		30	7	
4:45 PM	4:59 PM	110	117	834	33	15	191
5:00 PM	5:14 PM	95	142		35	7	
5:15 PM	5:29 PM	94	141		45	17	
5:30 PM	5:44 PM	106	151		39	7	
5:45 PM	5:59 PM	87	170	986	43	18	211
6:00 PM	6:14 PM	95	126		34	14	
6:15 PM	6:29 PM	88	113		29	21	
6:30 PM	6:44 PM	86	114		36	6	
6:45 PM	6:59 PM	83	90	795	30	16	186

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GLENVIEW TERRACE VMT ASSESSMENT

DATE: February 25, 2021

TO: Nick Pappani | Raney Planning & Management
Michael Smith City | City of San Bruno

FROM: Erin Vaca | DKS
Ali Kothawala | DKS

SUBJECT: Glenview Terrace TIA – VMT Assessment Project #19088

BACKGROUND AND INTRODUCTION

This memorandum presents a screening analysis of the proposed Glenview Terrace residential project for potential California Environmental Quality Act (CEQA) vehicle miles traveled (VMT) impacts. As of July 1, 2020, the recommended metric for transportation impacts under the CEQA is VMT which replaces measures of automobile delay (i.e., level of service). The proposed project involves construction of 29 single-family homes on the northeast corner of San Bruno Avenue and Glenview Drive, as indicated in **Figure 1**.

SELECTION OF THRESHOLD OF SIGNIFICANCE AND VMT SCREENING

A key consideration in assessing the potential for VMT impacts is the selection of a threshold of significance. Two sources provide guidance on this topic that is relevant for this project:

1) Technical guidance issued by the Governor's Office of Planning and Research (OPR)

2) Precedents set by the Draft Environmental Impact Report (DEIR) prepared for the Bayhill Specific Plan

At this time, the City of San Bruno has not formally adopted VMT baselines or thresholds of significance. In lieu of locally adopted VMT thresholds or screening criteria, this analysis draws heavily on technical guidance published by the Governor's Office of Planning and Research (OPR) for both screening criteria and threshold development.

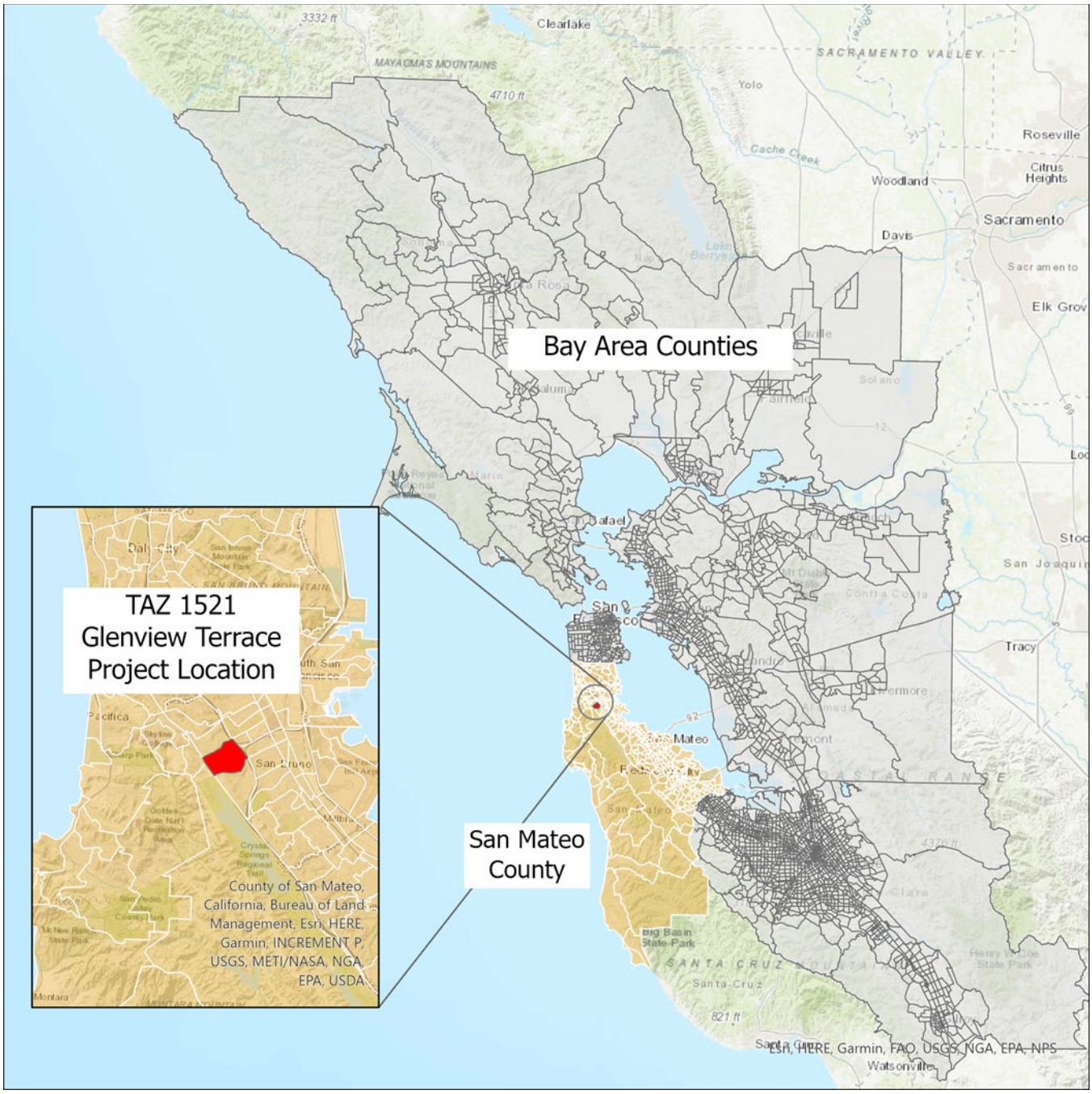

FIGURE 1. PROJECT LOCATION

SUMMARY OF OPR GUIDANCE

The OPR guidance proposes thresholds of significance for residential projects and recommends that VMT impacts be assessed on a per capita or per employee basis. The recommended threshold of significance is 15 percent below the existing "regional" VMT per capita. The project VMT per capita may be compared to either the project City's VMT per capita or a larger region. If the project VMT

rate is compared to a citywide VMT rate, the proposed project must not cause the City to exceed planned growth that is consistent with the regional Sustainable Communities Strategy.

The OPR guidance also provides direction on VMT measurement methodology stating that when a trip-based method is used to analyze a proposed residential development, the focus can be on home-based trips. Furthermore, OPR guidance supports the use of map-based screening for residential as well as non-residential projects such as office, manufacturing, industrial, service and non-retail commercial. The basic assumption is that if a project is in a geographic area that already exhibits low VMT characteristics relative to the baseline condition, the project can be assumed to share those low VMT characteristics, potentially leading to a presumption of less than significant VMT impacts.

The methodology used to calculate VMT rates for the Glenview Terrace project analysis is consistent with the OPR guidance described above and is described in more detail in the following section on Methodology.

BAYHILL SPECIFIC PLAN DEIR ANALYSIS

As the City of San Bruno has not yet to formally adopt VMT thresholds of significance, analysis completed for the recently published Bayhill Specific Plan DEIR sets a precedent. The discussion of threshold of significance in the DEIR references findings from the California Air Resources Board that per capita vehicle travel would need to be approximately 14.3 percent lower than existing to meet statewide GHG reduction targets. However, the threshold of 14.3 percent applies to a mixed vehicle flow that includes trucks, buses, and other heavy-duty vehicles. When considering only VMT associated with light-duty vehicles, VMT per capita would need to be reduced by 16.8 percent to meet the same GHG targets. Given that the Bayhill Specific Plan involves mixed uses and will attract significant heavy-duty vehicle trips, the selection of the 14.3 percent reduction target was thought to be appropriate and applied in the DEIR analysis. Given that the Glenview Terrace project is strictly residential and located in a predominantly residential area, a reduction of 16.8 percent from existing VMT rates may be more appropriate, especially given that the VMT being measured is only home-based VMT.

Despite that both analyses rely on the C\CAG travel demand model, the proposed method of tabulating VMT for the Glenview Terrace analysis differs from that used for the Bayhill Specific Plan analysis. For the Bayhill project, origin-destination VMT for all trips with an origin or destination in the project TAZ was tabulated for two scenarios: with and without the project. The net difference in VMT associated with the project scenario was then used to calculate a project VMT rate as the net VMT difference divided by service population (service population = population plus employment). Consistent with OPR guidance, the Glenview Terrace VMT calculation includes only home-based trip VMT associated with the trip production (home) zone.

METHODOLOGY

This section provides more detail on the steps taken to calculate VMT per capita rates. The calculations rely on the most recent version of the trip-based travel demand model jointly maintained by C\CAG and the Santa Clara County VTA (CCAG 2020 published February 2021). Calculations were made using the model's 2015 baseline scenario.

1) VMT from home-based trip purposes was tabulated from the person trip tables output from the model's mode choice step. The VMT calculation script employed a peak hour network distance matrix and employed appropriate factors to convert person trip ends to vehicle trip ends. The row totals from the resulting home-based VMT matrix represent the daily (full tour) VMT associated with the production (home) end of the trips for each TAZ. (This step was implemented in the Cube Base transportation software environment.)

2) The home-based VMT matrix was exported to a CSV format and combined with the C\CAG model's demographic inputs to calculate a VMT per capita rate by TAZ. The resulting VMT per capita table by TAZ can be aggregated at various geographic levels to calculate population-weighted VMT per capita for the City of San Bruno, the County of San Mateo, and the nine-county Bay Area region. (This step was implemented with a script written in the R statistical programming language.)

RESULTS AND CONCLUSION

Table 1 summarizes the calculated VMT rates and potential thresholds of significance. As shown, the VMT per capita rate for the project is below the threshold of significance when compared to VMT rates for the City of San Bruno, the County of San Mateo or the San Francisco Bay Area counties as a whole. Given that it is located in a low VMT zone, the Glenview Terrace project can be presumed to have less than significant VMT impacts and no mitigation is required.

TABLE 1: VMT RATES BY GEOGRAPHIC AREA
WITH POTENTIAL VMT THRESHOLDS OF SIGNIFICANCE

GEOGRAPHIC AREA	TOTAL HOME BASED VMT	POPULATION	VMT PER CAPITA	THRESHOLD BASED ON 14.3 PERCENT REDUCTION	THRESHOLD BASED ON 16.8 PERCENT REDUCTION
PROJECT TAZ (TAZ 1521)	18,649	2,026	9.2	n/a	n/a
CITY OF SAN BRUNO	522,179	42,794	12.2	10.5	10.2
SAN MATEO COUNTY	10,189,536	762,828	13.36	11.4	11.1
NINE COUNTY BAY AREA	105,212,781	7,509,870	14.01	12.0	11.7

Source: CCAG2020 Travel Demand Model, CCAG and DKS Associates

REFERENCES CITED

Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018, http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

ICF, *Draft Environmental Impact Report for the Bayhill Specific Plan Including the Phase I Development.* City of San Bruno, January 2021, https://www.sanbruno.ca.gov/civicax/filebank/blobdload.aspx?BlobID=32723.