DRAFT REPORT

Transportation Impact Analysis for the Proposed Point Loma Hotel (at 1325 Scott Street)

San Diego, CA

Prepared for:
Vista Design/Build

March 29, 2019

SD18-0294

FEHR PEERS

Table of Contents

List of Figures

List of Tables

This page intentionally left blank.

1. Executive Summary

The Point Loma Hotel project is located at 1325 Scott Street on the east side of Scott Street between Emerson Street and Dickens Street. The project proposes to demolish the existing 40-room motel to construct up to a 91-room select-service hotel.

Vehicular ingress to the project is proposed via one inbound-only driveway on Emerson Street. This driveway will provide access to the project's subterranean parking. The exit from the parking area will be provided via one outbound-only driveway on Dickens Street. Passenger pick-up and drop-off will also occur in the subterranean parking area. Pedestrian access will be provided via entrances located on Scott Street and on Emerson Street.

Potential transportation and mobility impacts were conducted per the guidelines and standards outlined in the City of San Diego's *Traffic Impact Study Manual* (July 1998) and the City of San Diego's *CEQA Significance Determination Thresholds* (July 2016). Additionally, information in planning documents was referenced, such as the *City of San Diego Bicycle Master Plan* (2013), the *Peninsula Community Plan* (1987), and the *City of San Diego Pedestrian Master Plan* (2006).

Trip rates from the *City of San Diego Municipal Code Trip Generation Manual* (2003) were used to calculate the number of net new vehicle trips associated with the proposed 91-room Point Loma Hotel project. At build-out, the project is estimated to generate a total of 590 net new daily vehicle trips, 28 net new peak hour trips (22 inbound/6 outbound) during the AM peak hour, and 44 net new peak hour trips (33 inbound/11 outbound) in the PM peak hour.

Key findings of the transportation impact analysis are summarized below:

- Implementation of the proposed Point Loma Hotel project is not expected to result in significant traffic impacts under the Existing Plus Project or Opening Year (2021) Plus Project scenarios. Due to this, no mitigation measures are proposed as a part of this project.
- The project façade has been designed in such a way to not conflict with the required sight distance triangles as calculated following the methodology outlined in the AASHTO *A Policy on Geometric Design of Highways and Streets*.
- The provided subterranean on-site parking will provide enough spaces to fulfill the current City of San Diego requirement for parking at a hotel with 91 spaces.
- The transportation demand management program will serve to decrease employee trips to and from the site.

2. Introduction

This report presents the results of the transportation impact analysis (TIA) conducted by Fehr & Peers for the proposed Point Loma Hotel in the Point Loma community of San Diego, California. The project site is located at 1325 Scott Street on the east side of Scott Street between Emerson Street and Dickens Street. All study roadways are under the jurisdiction of the City of San Diego.

This study was conducted in accordance with the guidelines and standards outlined in the City of San Diego's *Traffic Impact Study Manual* (July 1998) and the City of San Diego's *CEQA Significance Determination Thresholds* (July 2016).

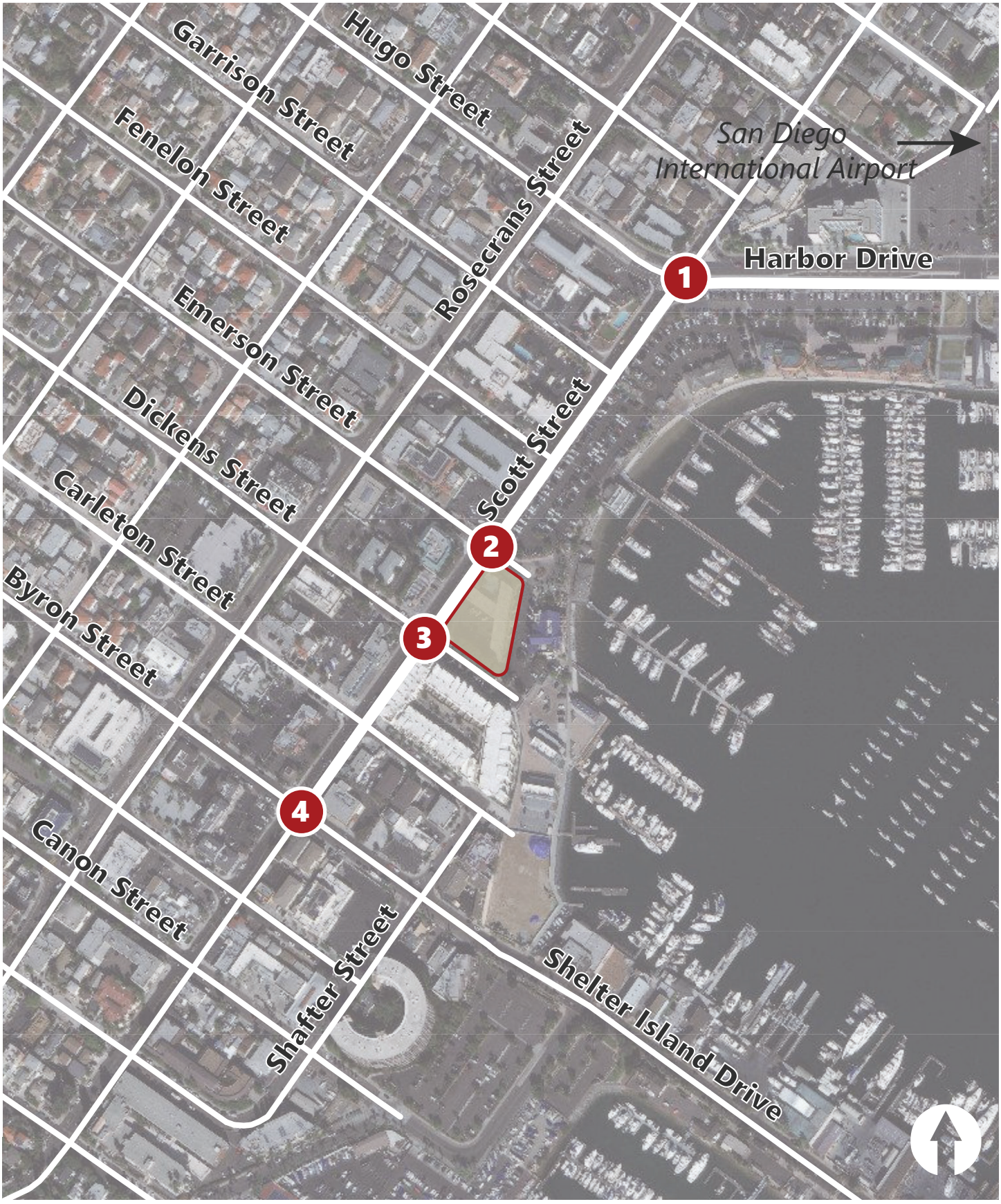
Currently, a two-story 40-unit motel with on-site parking exists on the project site. Existing adjacent development consists of office and retail, restaurant, and residential uses.

2.1 Project Description

The Point Loma Hotel project proposes to demolish the existing motel to construct up to a 91-room select-service hotel. The project will also include subterranean parking for up to 91 vehicles with vehicle stackers.

Vehicular ingress to the project is proposed via one inbound-only driveway on Emerson Street. This driveway will provide access to the project's subterranean parking. The exit from the parking area will be provided via one outbound-only driveway on Dickens Street. Passenger pick-up and drop-off will also occur in the subterranean parking area. Pedestrian access will be provided via entrances located on Scott Street and on Emerson Street.

The project location is shown in **Figure 1**. The project site plan is illustrated in **Figure 2**.



X Study Intersection

Project Site

Figure 1

Project Location

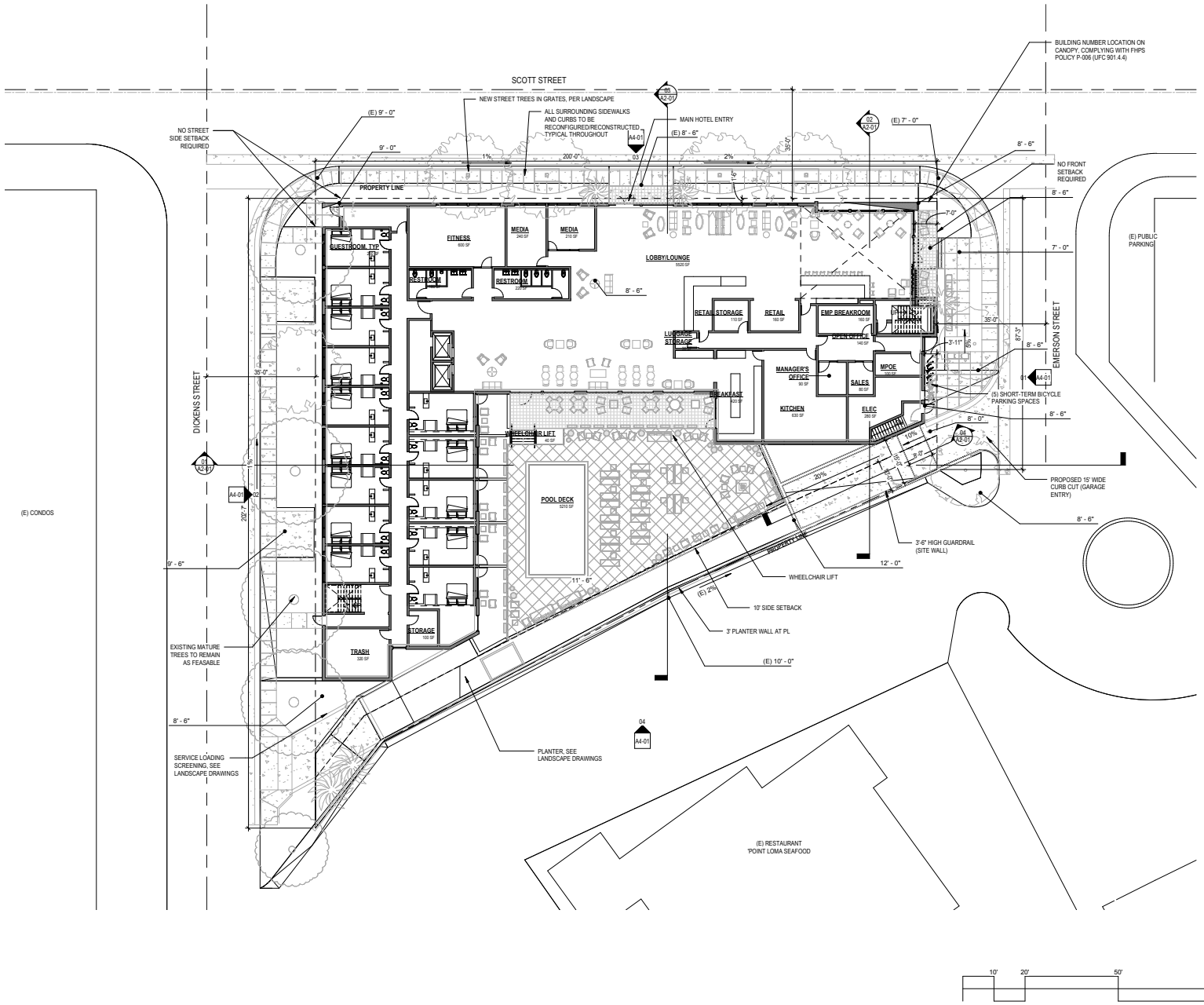


Figure 2

Project Site Plan

2.2 Project Study Area

Regional access to the proposed project is provided via Harbor Drive from the San Diego International Airport or Rosecrans Street from the Interstate 5 (I-5) or Interstate 8 (I-8) freeways. Local access is provided via Scott Street, Emerson Street, and Dickens Street. The access analysis evaluated the operations at four intersections in the vicinity of the proposed project at the request of the City of San Diego Development Services Department (DSD). The study intersections include:

1. Harbor Drive and Scott Street
2. Scott Street and Emerson Street
3. Scott Street and Dickens Street
4. Shelter Island Drive and Scott Street

The analysis included new traffic counts at each study intersection to obtain current traffic volumes in the area. The locations of the study intersections are shown in **Figure 1**.

2.3 Study Scenarios

In this study, the potential project-related traffic impacts were analyzed under typical weekday AM and PM peak hour traffic conditions anticipated at project opening in 2021, the year of occupancy provided by Vista Design/Build staff. The peak hour is defined as the highest one-hour total of traffic volumes between 7:00 AM and 9:00 AM in the morning and 4:00 PM to 6:00 PM in the evening on a weekday.

The operations of the study intersections were evaluated during the weekday AM and PM peak hours for the following scenarios:

- **Existing Conditions** – The analysis of existing traffic conditions was based on 2019 counts collected during the typical weekday peak commute hours and existing roadway and intersection configurations. The existing conditions evaluation also includes an overview of current pedestrian, bicycle, and transit facilities and services near the site.
- **Existing Plus Project Conditions** – Existing conditions with the buildout of the proposed project is analyzed by adding the forecasted project-generated trips to the Existing Condition volumes. This scenario includes existing roadway and intersection configurations.
- **Opening Year (2021) Without Project Conditions** – The analysis of opening year (2021) conditions is based on the addition of ambient growth projections to existing peak-hour volumes. Additionally, project trips generated by an approved cumulative project (Dolphin Motel) were added to the peak-hour volumes. This scenario includes existing roadway and intersection configurations and forms the comparison baseline for identifying "with project" impacts.

- **Opening Year (2021) Plus Project Conditions** – Opening year (2021) conditions with buildout of the proposed project are analyzed by adding the forecasted project-generated trips to the Opening Year (2021) Without Project volumes. This scenario includes existing roadway and intersection configurations plus the addition of new driveways to serve the proposed project.

2.4 Traffic Analysis Methodology

The analysis of roadway operations performed for this study is based on procedures presented in the *Highway Capacity Manual* (HCM), published by the Transportation Research Board in 2016 *(HCM 6th Edition)*. The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions. The methodologies for signalized and unsignalized intersections are described below.

2.4.1 Signalized Intersections

The method described in Chapter 18 of the *HCM 6th Edition* was used to prepare the LOS calculations for the signalized study intersections of Harbor Drive/Scott Street and Shelter Island Drive/Scott Street. This LOS method analyzes a signalized intersection's operation based on average control delay per vehicle. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using Synchro 10.0 analysis software and is correlated to a LOS designation as shown in **Table 1**.

2.4.2 Unsignalized Intersections

The operations of the unsignalized intersections of Scott Street/Emerson Street and Scott Street/Dickens Street were evaluated using the method contained in Chapter 19: Two-Way Stop-Controlled Intersections of the *HCM 6th Edition*. LOS ratings for stop-sign-controlled intersections are based on the average control delay expressed in seconds per vehicle. At side-street (SSSC) or two-way stop controlled (TWSC) intersections, the average control delay is calculated for each minor-street stopped movement and the major-street left turns, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. For approaches with multiple lanes, the control delay is computed for each movement; the movement with the worst (i.e., longest) delay is presented for TWSC. The average control delay for unsignalized intersections is calculated using Synchro 10.0 analysis software and is correlated to a LOS designation as shown in **Table 2**.

Table 1: Signalized Intersection LOS Definitions

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of desirable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered undesirable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2016.

Table 2: Signalized Intersection LOS Definitions

Level of Service	Description	Delay in Seconds
A	Little or no delay.	≤ 10.0
B	Short traffic delay.	> 10.0 to 15.0
C	Average traffic delays.	> 15.0 to 25.0
D	Long traffic delays.	> 25.0 to 35.0
E	Very long traffic delays.	> 35.0 to 50.0
F	Extreme traffic delays with capacity exceeded.	> 50.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2016.
Notes: [1] For approach-based and intersection-wide assessments, such as that used for AWSC intersections, LOS is defined solely by control delay.

2.4.3 Significant Impact Criteria

The analysis of Opening Year Conditions compares forecasted future operations with conditions when the project is fully built to determine whether or not project implementation is expected to result in a significant impact on the surrounding roadways. The City of San Diego's *CEQA Significance Determination Thresholds* (July 2016) states that the minimum acceptable operating standard for an intersection or roadway in a developed area is LOS D. For operations at LOS E of F, the maximum allowable increase in delay is two (2) seconds and one (1) second, respectively.

The City of San Diego requires transportation studies to consider potential effects on public transportation, pedestrians, and bicyclists. These impacts are typically evaluated based on whether a proposed project would: 1) conflict with existing or planned pedestrian, bicycle, or transit facilities and services, or 2) create substantive walking, bicycling, or transit use demand without providing adequate and appropriate facilities for non-motorized mobility. The existing amenities for pedestrians, bicycles, and transit users were inventoried to evaluate the quality and scope of facilities/services currently in place. The assessments of planned facilities were conducted using information in planning documents, such as the *City of San Diego Bicycle Master Plan* (2013), the *Peninsula Community Plan* (1987), and the *City of San Diego Pedestrian Master Plan* (2006). For these modes, if the proposed project is expected to conflict with existing or planned improvements to pedestrian and bicycle facilities, or if the project is expected to generate a substantial demand which could warrant additional transit service, then the project would be determined to have a project-specific impact.

3. Existing Conditions

This chapter describes the existing mobility network and includes a discussion of current bicycle, pedestrian, and transit facilities located in the project study area. This chapter also includes a discussion of the existing intersection operational analysis and results.

3.1 Existing Site

The 34,000-square-foot site is located south of east of Scott Street, south of Emerson Street and north of Dickens Street in the Point Loma neighborhood of San Diego. The project is currently developed and occupied by an operating 40-unit Vagabond motel and surface parking lot.

3.2 Existing Transportation Facilities

New traffic count data was collected as part of this analysis to identify existing transportation conditions in the vicinity of the proposed project. The existing conditions analysis included an inventory of the street system, assessment of traffic volumes, and determination of operating conditions at the study intersections and on study roadways. Existing pedestrian, bicycle, and public transit service are also described below.

3.2.1 Existing Roadway System

The key roadways in the study area are described below.

Scott Street extends in a generally north-south direction between Bessemer Street and Nimitz Boulevard. In the vicinity of the project, it is a two-way, four-lane collector without a center left-turn lane. The posted speed limit is 30 miles per hour (mph), and Scott Street is under the jurisdiction of the City of San Diego. Minimal congestion was observed on this roadway during peak hours. On-street parking is prohibited on both sides of Scott Street, both along the segment fronting the project as well as along the adjacent blocks to the north and south. The curb directly in front of the project on the east side of Scott Street will be repainted red, including the section of curb that will be added to close the existing driveway.

Bike Facilities: Bike lanes are not currently provided on Scott Street. Adjacent to the project site, arrows are provided for bicyclists in the curb lane in both directions.

Pedestrian Facilities: Sidewalks are provided along both sides of Scott Street. Striped crosswalks and push-button-actuated pedestrian signals are provided on three legs of the N Harbor Drive intersection with Scott Street as well as the Shelter Island Drive intersection with Scott Street.

Emerson Street extends in the east-west direction from Willow Street to the harbor. It is a two-way, two-lane local street on the north side of the project site. The posted speed limit is 25 mph. Parallel parking is permitted on the segment west of Scott Street, but is prohibited east of Scott Street adjacent to the site. Parking on Emerson Street near the site is limited to six marked stalls (of which three are accessible) designated for Point Loma Seafoods customers with a 60-minute time restriction. The section of the street east of Scott Street is a cul-de-sac with driveway access serving Point Loma Seafood parking and the public lot that also includes access at Garrison Street.

Bicycle Facilities: Bike lanes are not currently provided on Emerson Street. Bicyclists must share the roadway with vehicle traffic.

Pedestrian Facilities: Sidewalks are provided along both sides of Emerson Street. Striped crosswalks are not provided on any of the legs of the two-way stop sign controlled intersection at Scott Street.

Harbor Drive is a four-lane major road that extends in an east-west direction between Rosecrans Street and Nimitz Boulevard but continues in various configurations further east and south to Civic Center Drive in National City. The posted speed limit near Scott Street is 40 mph. Adjacent to the project site, minimal congestion was observed on this roadway during peak hours.

Bicycle Facilities: Bike lanes are provided on both sides of the Harbor Drive near of the project site.

Pedestrian Facilities: Sidewalks are provided along both sides of Harbor Drive. Striped crosswalks and push-button-actuated pedestrian signals are provided on all but the east leg of the N Harbor Drive intersection at Scott Street.

Dickens Street is a two-way, two-lane local street on the south side of the project site. It extends in an east-west direction from Evergreen Street to the harbor. The posted speed limit is 25 mph. On-street parking is provided on most of both sides of Dickens Street with no posted restrictions. East of Scott Street, Dickens Street becomes a narrow travel way of 18 to 20 feet for two-way traffic, which helps to moderate travel speeds.

Bicycle Facilities: Bike lanes are not currently provided on Dickens Street. Bicyclists must share the roadway with vehicles, although the traffic volumes and speeds are low enough to provide a reasonable biking environment for most riders.

Pedestrian Facilities: Sidewalks are provided along both sides of Dickens Street. Striped crosswalks are not provided on any of the legs of the two-way stop sign controlled intersection at Scott Street.

Shelter Island Drive is a two-way, two-lane major road in the vicinity of the project site. It traverses in an east-west direction from Rosecrans Street to the harbor. West of Rosecrans Street, this roadway is

designated as Byron Street. The posted speed limit near the site is 25 mph. Shelter Island Drive is under the jurisdiction of the City of San Diego. Adjacent to the project site, minimal congestion was observed during peak hours.

Bicycle Facilities: Bike lanes are not currently provided on Shelter Island Drive. Bicyclists must share the roadway with vehicles.

Pedestrian Facilities: Sidewalks are provided along both sides of Shelter Island Drive. Striped crosswalks and push-button-actuated pedestrian signals are provided on all but the north leg of the Shelter Island Drive intersection with Scott Street. Pedestrian crossings are prohibited across this leg, and the crosswalk across the west leg has faded and is not visible to drivers and pedestrians.

3.2.2 Existing Bicycle Activity

During the peak period intersection counts, the volume of bicyclists was observed passing through each study intersection during the AM and PM peak hours. These volumes are presented in **Table 3** and show that while there is some variation in the morning peak hour, the volume of bicyclists is the same at all four locations during the PM peak hour.

Table 3: Existing Bicycle Activity

Intersection	Bicyclists Observed Passing through the Study Intersection	
	AM Peak	PM Peak
Harbor Drive/Scott Street	13	15
Scott Street/Emerson Street	2	15
Scott Street/Dickens Street	3	15
Shelter Island Drive/Scott Street	11	15

Source: *Fehr& Peers, 2019.*

3.2.3 Existing Pedestrian Activity

As shown in **Table** below, the highest number of pedestrians observed at any one study intersection during the PM peak hour was 45 pedestrians at the Shelter Island Drive and Scott Street intersection. Generally, PM peak hour pedestrian activity was two or more times the AM peak hour volume. At Emerson Street, two (2) people crossed Scott Street in the AM peak hour and nine (9) people crossed Scott Street in the PM peak hour. At Dickens Street, three (3) people crossed Scott Street in the AM peak hour and ten (10) people crossed Scott Street in the PM peak hour.

Table 4: Existing Pedestrian Activity

Intersection	Pedestrians Observed Crossing at the Study Intersection	
	AM Peak	PM Peak
Harbor Drive/Scott Street	12	38
Scott Street/Emerson Street	13	34
Scott Street/Dickens Street	13	24
Shelter Island Drive/Scott Street	21	45

Source: *Fehr& Peers, 2019.*

3.2.4 Existing Transit Facilities and Services

MTS is the primary public transportation service provider in the City of San Diego, where it served over 85 million trips on MTS buses and trolleys in the fiscal year of 2018 (MTS' *Performance Monitoring Report*, November 2018).

Although no bus lines run along Scott Street, Emerson Street, or Dickens Street directly adjacent to the project site, Routes 28 and 84 provide bus service in the project's greater vicinity. Route 28 runs along Rosecrans Street and loops along Anchorage Lane to continue the complimentary route on Rosecrans. Route 84 runs along Canon Street and Rosecrans Street south of the project site. The operating hours and extents of these routes are specified in **Table 5** below.

Table 5: Bus Routes Serving the Project Vicinity

Route	From	To	Weekday			Weekends	
			Operating Hours	Headway (Minutes)		Operating Hours	Headway (Minutes)
				Peak	Midday		
28	Old Town Transit Center/ Anchorage & Shelter Island Dr	Anchorage & Shelter Island Dr./ Old Town Transit Center	5:15 AM to 11:15 PM	15 minutes on morning and 30 minutes on evening	30	6:15 AM to 11:15 PM	30 minutes on Saturday and 60 minutes on Sunday
84	Old Town Transit Center/ Cabrillo Monument	Cabrillo Monument/ Old Town Transit Center	6:15 AM to 6 PM	60	60	N/A	N/A

Source: *Metropolitan Transit System, 2019.*

3.3 Existing Traffic Volumes and Lane Configurations

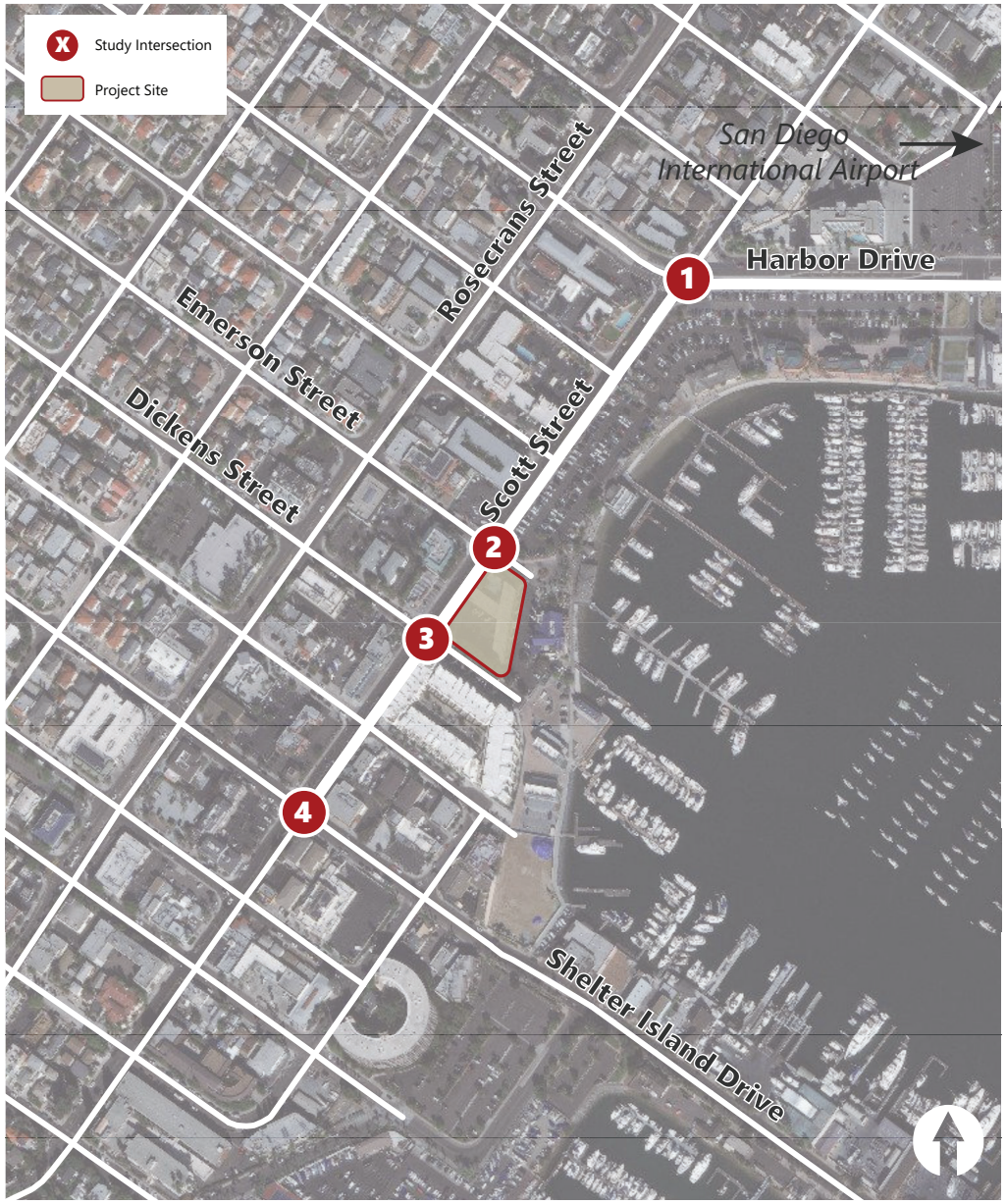
Existing lane configurations and traffic signal controls were verified through field observations. Traffic counts were collected during the weekday AM and PM peak periods at the study intersections in January 2019 under normal traffic and weather conditions. The weekday AM peak hour of traffic for the study area generally occurred from 7:45 AM to 8:45 AM. During the weekday afternoon, the PM peak hour of traffic generally occurred from 4:00 PM to 5:00 PM. Historic traffic counts were reviewed to determine if an adjustment would be needed to account for peak season (i.e., summer) conditions. The off-peak season count was found to be similar to or greater than the peak season counts, and therefore no adjustment was made.

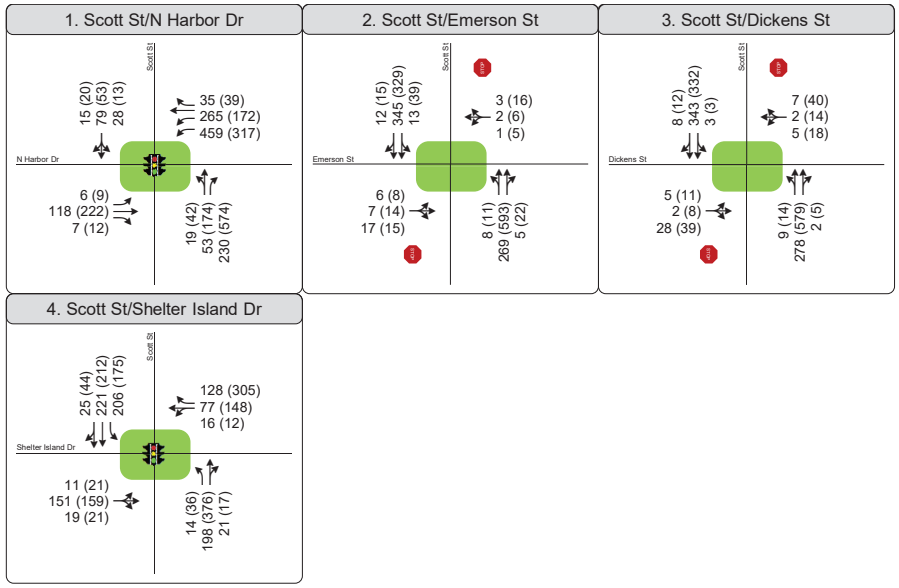
Figure 3 presents the existing AM and PM peak hour turning movement volumes, corresponding lane configurations, and traffic control devices. Peak hour intersection and daily roadway traffic count data are provided in **Appendix A**.

3.4 Existing Intersection Levels of Service

Peak hour intersection LOS analysis was performed for the existing study intersections using the methodology described previously and traffic count data collected for this study. **Table 6** shows the results of the intersection LOS analysis under Existing Conditions. Detailed LOS Worksheets are provided in **Appendix B**.

As shown in **Table 6**, all study intersections (or critical movements at unsignalized intersections) currently operate at LOS C or better during the AM and PM peak hours. This level of operation is better than the City's minimum standard of LOS D. These calculated levels of service are consistent with operations observed in the field during the peak hours. Additional details are provided in **Section 3.6**.





LEGEND

AM (PM)	Peak Hour Traffic Volume
	Lane Configuration
	Stop Sign
	Signalized
AM PM A-C D E F	Level of Service (LOS)

Figure 3

Existing (2019) Peak Hour Traffic Volumes and Geometries

Table 6: Existing (2019) Intersection Levels of Service (LOS)

Intersection	Traffic Control	Peak Hour	Delay (sec/veh)[1]	LOS[2]
1. Harbor Drive & Scott Street	Signalized	AM	12.0	B
		PM	14.2	B
2. Scott Street & Emerson Street	TWSC	AM	12.3	B
		PM	19.2	C
3. Scott Street & Dickens Street	TWSC	AM	12.4	B
		PM	18.0	C
4. Shelter Island Drive & Scott Street	Signalized	AM	14.7	B
		PM	16.8	B

Source: Fehr & Peers, 2019

Notes:

TWSC = Two-way stop control

[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections. Worst movement delay reported for two-way stop-control (TWSC) intersections.

[2] LOS calculations performed using the Highway Capacity Manual (HCM), 6th Edition method.

3.5 Existing Roadway Levels of Service

The existing roadway LOS was analyzed for Scott Street between Emerson Street and Dickens Street. Scott Street is classified as a 4-lane collector in the *Peninsula Community Plan* (1987).

Average daily traffic (ADT) counts taken in January 2019 were utilized in the analysis, and showed that the volume on this segment is 10,869 vehicles per day (vpd). This volume results in a volume-to-capacity (V/C) ratio of 0.72 based on a theoretical capacity of 15,000 vpd, and corresponds to an existing LOS of D according to Table 2 – Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT) in the City of San Diego *Traffic Impact Study Manual*.

3.6 Field Observations

During field observation in January 2019, queuing was observed along the southbound and eastbound approaches to the Shelter Island Drive/Scott Street intersection in the PM peak hour; however, this queuing did not consistently affect the delay observed at the intersection, and all queues cleared during each cycle. Minimal queuing and congestion was observed at all other locations in the PM peak hour, and minimal congestion was observed at all locations in the AM peak hour.

4. Project Traffic

This section describes the anticipated number of vehicle trips and directionality of those trips that would result from implementation of the proposed project. Future traffic added to the roadway system by the project is estimated using a three-step process: (1) project trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of project-generated traffic that would be added to the roadway network. The second step estimates the direction of travel to and from the project site. The new trips are assigned to specific street segments and intersection turning movements during the third step. This process is described in more detail in the following sections.

4.1 Project Trip Generation

Trip rates from the *City of San Diego Municipal Code Trip Generation Manual* (2003) were used to calculate the number of net new vehicle trips associated with the proposed 91-room Point Loma Hotel project. As can be seen in **Table 7,** this calculation includes a credit for the trips currently generated by the existing motel on the project site.

Table 7: Project Trip Generation Estimates

Vehicle Trip Rates									
Land Use	Rate	Daily Rate	AM Peak Hour			PM Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Motel	per room	9.0	40%	60%	8%	40%	60%	9%
Hotel	per room	10.0	60%	40%	6%	60%	40%	8%

Number of Vehicle Trips									
Land Use	Quantity	Unit	Daily Rate	AM Peak Hour			PM Peak Hour		
				Inbound	Outbound	Total	Inbound	Outbound	Total
Proposed Uses									
Hotel	95	rooms	950	34	23	57	46	30	76
Existing Uses									
Motel	40	rooms	360	12	17	29	13	19	32
	NET NEW TRIPS (Hotel -Motel)		**590**	**22**	**6**	**28**	**33**	**11**	**44**

Source: City of San Diego Municipal Code Trip Generation Manual, 2003.

As shown in **Table 7**, the project is estimated to generate a total of 590 net new daily vehicle trips, 28 net new peak hour trips (22 inbound/6 outbound) during the AM peak hour, and 44 net new peak hour trips

(33 inbound/11 outbound) in the PM peak hour. These are the new trips that are estimated to be added to the adjacent roadway network with the development of the project site as proposed.

4.2 Project Trip Distribution and Assignment

The distribution of traffic generated by the project onto the roadway system was based on regional access and existing traffic volumes. Based on these factors, the vehicle trip distribution of the project-generated traffic is estimated to be:

- 35% to/from Rosecrans Street north of the project site
- 30% to/from Harbor Drive east of the project site
- 25% to/from Nimitz Boulevard northwest of the project site
- 5% to/from Canon Street southwest of the project site
- 5% to/from Shelter Island Drive southeast of the project site

Figure 4 illustrates the project trip distribution pattern described above.

As described in **Section 2.1** (Project Description), access into the proposed project will be provided by one inbound driveway on Emerson Street, and access out of the proposed project will be provided by one outbound driveway on Dickens Street.

Using the estimated trip generation and the distribution patterns discussed, the traffic generated by the proposed project was assigned to the study intersections and individual turning movements. **Figure 5** shows the assignment of trips generated by the project for AM and PM peak hours.

For the Opening Year (2021) Plus Project scenario, existing trips associated with the motel currently on the project site were reassigned to account for a change in site ingress and egress.

X Study Intersection

Project Site

Figure 4

Project Trip Distribution

X Study Intersection

Turning Movement

Project Site

Figure 5

Project Trip Assignment

5. Existing Plus Project Conditions

Levels of service calculations were conducted to evaluate the operating levels of the study intersections and roadways under Existing Plus Project Conditions based on the addition of project trips to traffic. While this is a hypothetical scenario only, it illustrates the potential impact of the project using a current baseline without accounting for any future traffic growth or roadway improvements.

5.1 Existing Plus Project Intersection Levels of Service

Peak hour intersection LOS analysis was performed for the existing study intersections plus project-generated traffic using the methodology described previously and traffic count data collected for this study. **Table 8** shows the results for Existing Conditions LOS, and **Figure 6** presents the existing AM and PM peak hour turning movement volumes, corresponding lane configurations, and traffic control devices. Detailed LOS Worksheets are provided in **Appendix B**.

Table 8: Existing (2019) Plus Project Intersection Levels of Service (LOS)

Intersection	Traffic Control	Peak Hour	Existing Delay (sec/veh)[1]	Existing LOS[2]	Existing Plus Project Delay (sec/veh)[1]	Existing Plus Project LOS[2]	Delay Increase (sec/veh)
1. Harbor Drive & Scott Street	Signalized	AM	12.0	B	12.5	B	0.5
		PM	14.2	B	14.9	B	0.7
2. Scott Street & Emerson Street	TWSC	AM	12.3	B	13.4	B	1.1
		PM	19.2	C	23.6	C	4.4
3. Scott Street & Dickens Street	TWSC	AM	12.4	B	13.1	B	0.7
		PM	18.0	C	19.4	C	1.4
4. Shelter Island Drive & Scott Street	Signalized	AM	14.7	B	14.7	B	0.0
		PM	16.8	B	16.8	B	0.0

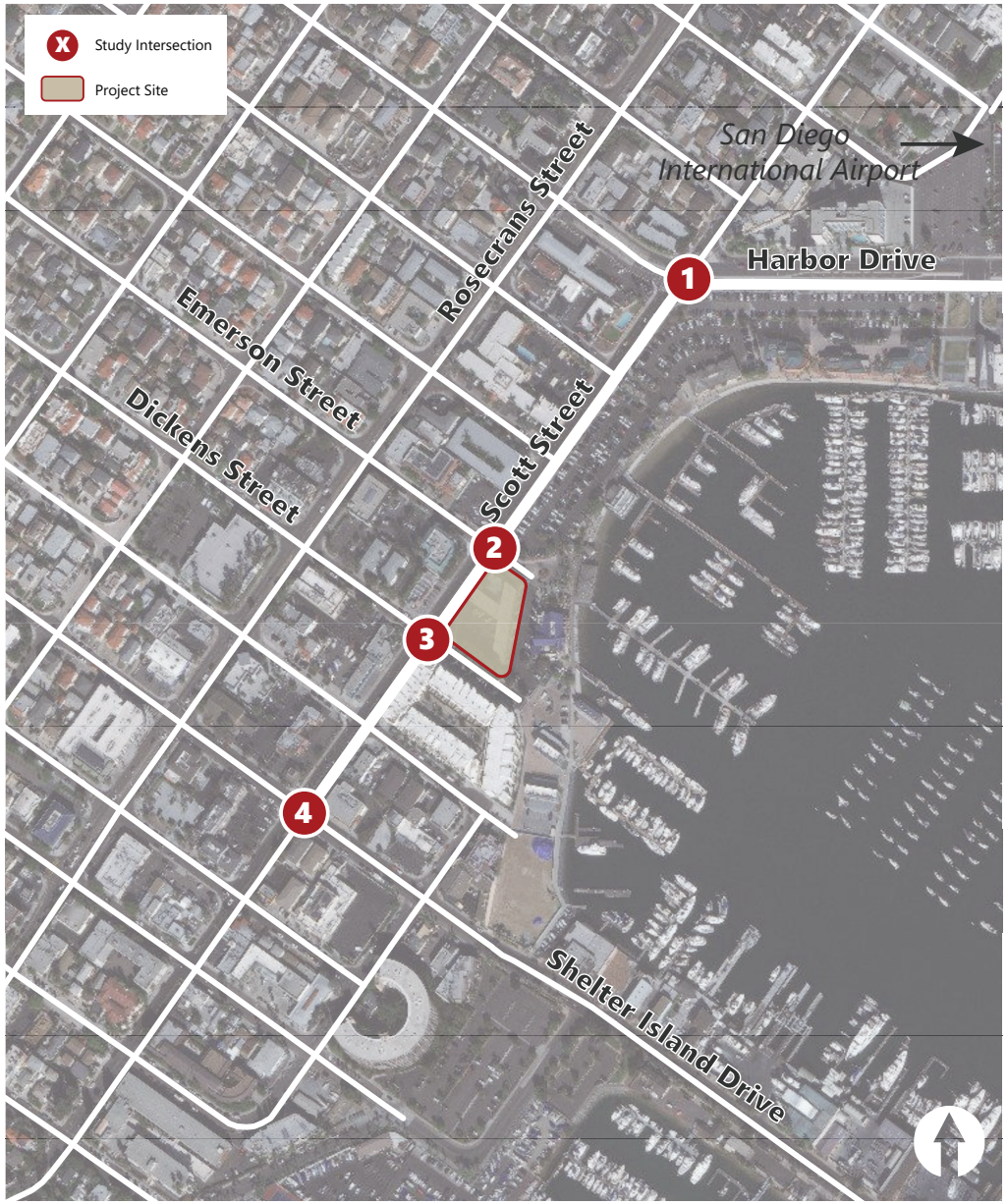
Source: Fehr & Peers, 2019

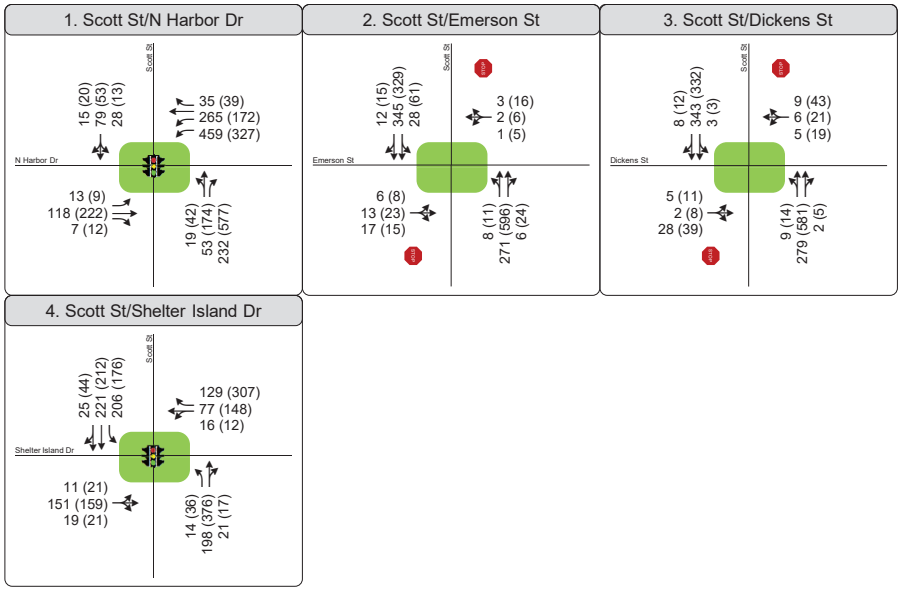
Notes:

TWSC = Two-way stop control

[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections. Worst movement delay reported for two-way stop-control (TWSC) intersections.

[2] LOS calculations performed using the Highway Capacity Manual (HCM), 6th Edition method.





LEGEND

AM (PM)	Peak Hour Traffic Volume
	Lane Configuration
	Stop Sign
	Signalized
AM PM A-C D E F	Level of Service (LOS)

Figure 6

Existing (2019) Plus Project Peak Hour Traffic Volumes and Geometries

As shown in **Table 8**, all study intersections (or critical movements at unsignalized intersections) are projected to operate at LOS C or better during the AM and PM peak hours under Existing Plus Project conditions. This level of operation is better than the City's minimum standard of LOS D.

5.2 Existing Plus Project Intersection Levels of Service

The roadway LOS of Scott Street between Emerson Street and Dickens Street was analyzed with the addition of expected project traffic. The project is expected to add 65 trips to this segment of Scott Street daily. With these additional trips, the roadway LOS would remain at LOS B with a negligible increase in the V/C ratio.

6. Opening Year (2021) Without Project Conditions

To evaluate the potential impacts of traffic generated by the proposed project at the time when it is expected to be fully occupied, estimates of future traffic conditions in the area were first developed as the Opening Year Without Project condition. Future traffic conditions without the project reflect forecasted traffic increases, due to regional and local growth and development. Estimated project-generated trips were then added to the Opening Year Without Project volumes to identify potential impacts on the roadway system. According to Vista Design/Build staff, the project is expected to be constructed and occupied by 2021.

6.1 Opening Year (2021) Traffic Estimates

The following section summarizes the growth assumptions used to estimate the amount of traffic added to existing intersection volumes to develop the Opening Year (2021) Without Project Conditions.

6.1.1 Areawide or Ambient Traffic Growth

Historic traffic counts from the City of San Diego count database were reviewed to determine appropriate growth factors for traffic in the area. The historic traffic counts showed no substantial change in traffic since 2002. The San Diego Association of Governments (SANDAG) Series 13 travel demand model, which is the best available planning tool for long-term growth traffic forecasts, indicates an average annual growth rate of approximately 0.5% from 2012 to 2035 in the study area. The 0.5% annual growth rate was applied to existing traffic counts to estimate traffic in the opening year of 2021. Additionally, the estimated traffic generated by the cumulative project, Dolphin Motel, located on Garrison Street between Rosecrans Street and Scott Street was added to the growth-factored existing counts to represent 2021 opening year baseline conditions.

6.1.2 Cumulative Projects

Cumulative projects are other approved projects in the area that may affect traffic patterns. One cumulative project on Garrison Road between Scott Street and Rosecrans Street was identified. The project's access analysis report prepared by Linscott, Law & Greenspan, Engineers in March 2018 was reviewed to account for the project's forecasted traffic. This project is expected to be operational by 2021 and the volumes estimated to be generated from this project were included in the Opening Year (2021) volumes.

6.1.3 Future Transportation Improvements

No transportation infrastructure improvements are planned in the immediate study area. Therefore, the intersection lane configurations and traffic control devices are expected to remain the same as under Existing Conditions.

Figure 7 shows the peak hour traffic volumes for the Opening Year (2021) Conditions.

6.2 Opening Year (2021) Without Project Intersection Levels of Service

Levels of service calculations were conducted to evaluate the operating levels of the study intersections under Opening Year (2021) Without Project Conditions based on the anticipated growth in traffic. The results of the LOS analysis are presented in **Table 9**. The corresponding LOS calculation sheets are included in **Appendix B**.

Table 9: Opening Year (2021) Without Project Intersection Level of Service (LOS)

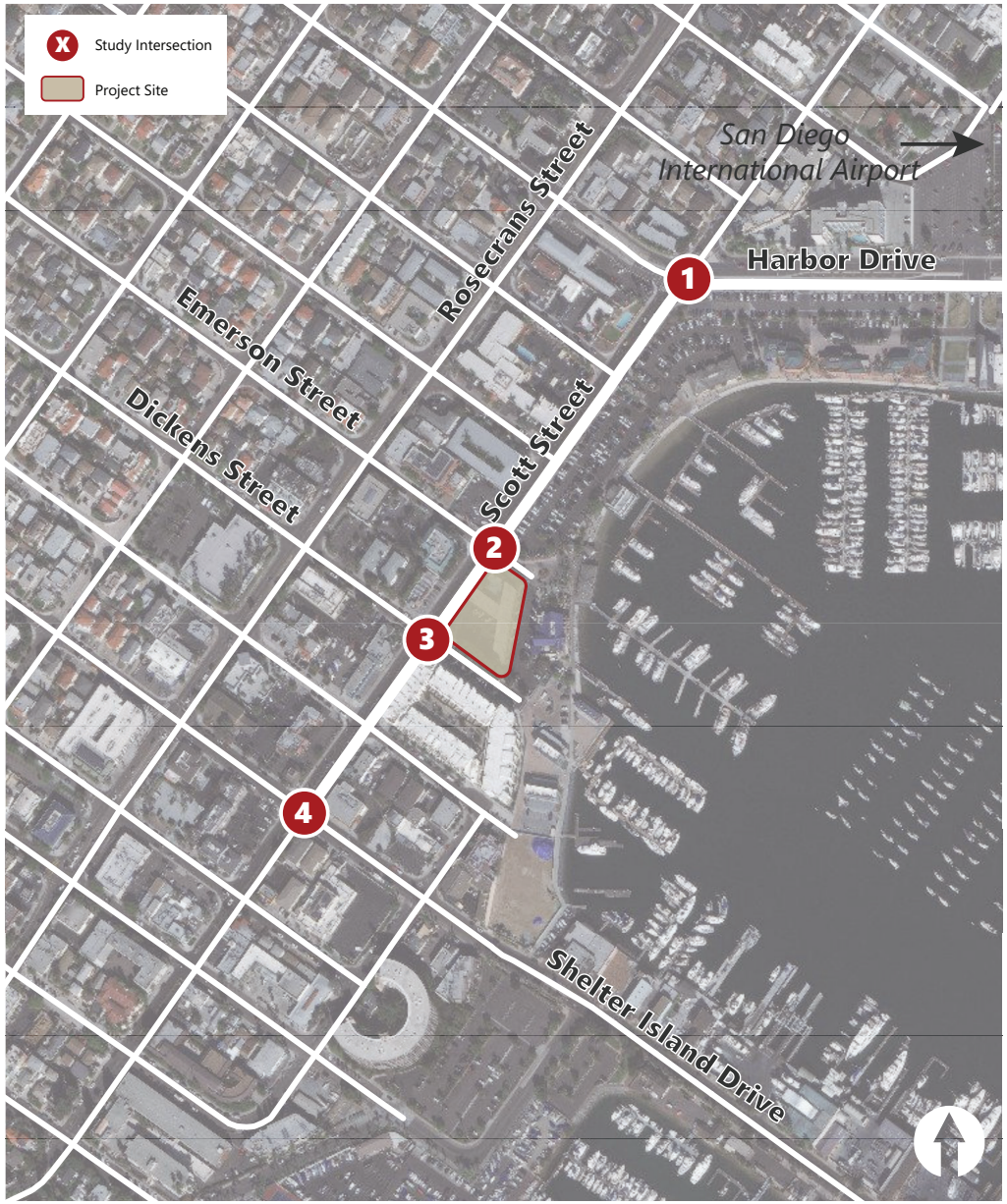
Intersection	Traffic Control	Peak Hour	Existing Delay (sec/veh)[1]	Existing LOS[2,3]	2021 Baseline Delay (sec/veh)[1]	2021 Baseline LOS[2,3]
1. Harbor Drive & Scott Street	Signalized	AM	12.0	B	12.1	B
		PM	14.2	B	14.5	B
2. Scott Street & Emerson Street	TWSC	AM	12.3	B	14.2	B
		PM	19.2	C	21.7	C
3. Scott Street & Dickens Street	TWSC	AM	12.4	B	14	B
		PM	18.0	C	20.5	C
4. Shelter Island Drive & Scott Street	Signalized	AM	14.7	B	14.7	B
		PM	16.8	B	17.3	B

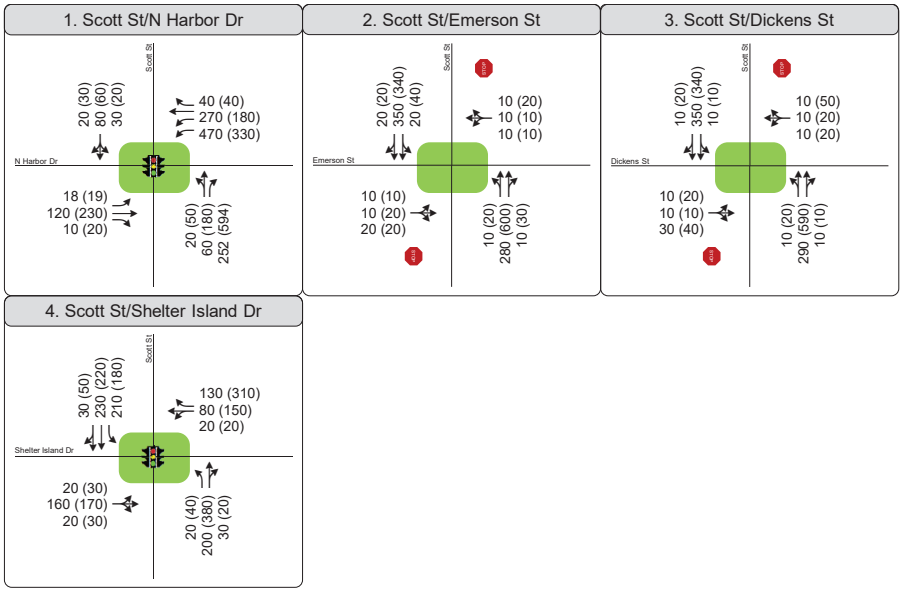
Source: Fehr & Peers, 2019

Notes: TWSC = Two-way Stop Control

[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections. Worst movement delay reported for two-way stop-control (TWSC) intersections.

[2] LOS calculations performed using the Highway Capacity Manual (HCM), 6th Edition method.





LEGEND

AM (PM)	Peak Hour Traffic Volume
	Lane Configuration
	Stop Sign
	Signalized
AM PM A-C D E F	Level of Service (LOS)

Figure 7

Opening Year (2021) Without Project Peak Hour Traffic Volumes and Geometries

6.3 Opening Year (2021) Without Project Roadway Levels of Service

The roadway LOS of Scott Street between Emerson Street and Dickens Street was analyzed with the addition of ambient traffic growth and cumulative project traffic. The expected traffic on this roadway segment is 10,980 ADT assuming two years' worth of background growth plus traffic from the Dolphin Motel project. Under these conditions, the roadway LOS would remain at LOS D with an increase in V/C ratio to 0.73.

7. Opening Year (2021) Plus Project Conditions

This section summarizes and presents an analysis of the potential impacts on the roadway system due to projected increases in traffic, including traffic generated by the project in 2021. The Opening Year (2021) roadway network is the same network assumed under the Existing scenario and Opening Year (2021) Without Project scenario. The analysis compares the project levels of service at each study intersection under Opening Year (2021) Without Project conditions against the "Plus Project" scenario to determine potential project impacts.

7.1 Proposed Transportation Improvements

No transportation improvements are proposed as a part of this project.

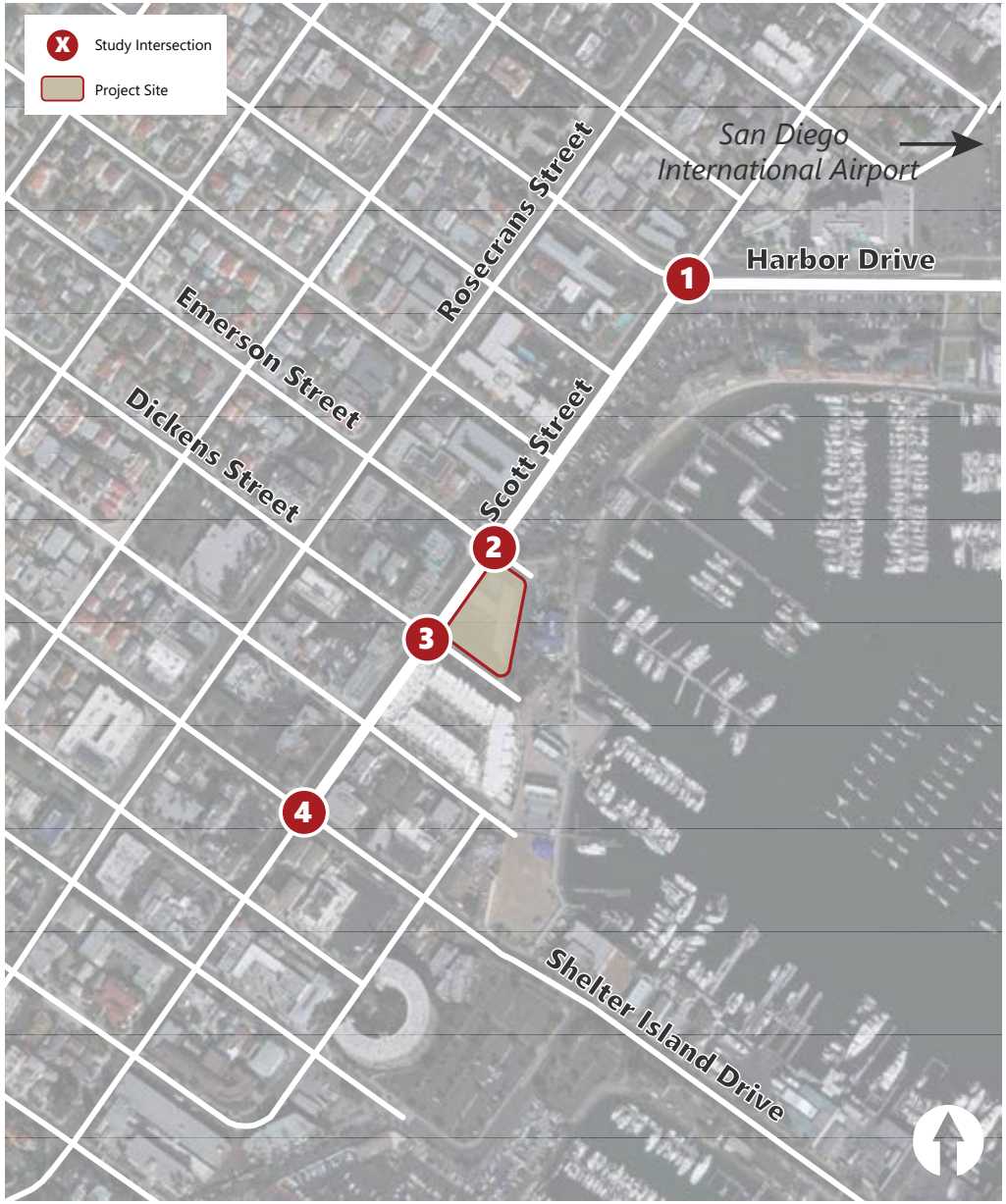
7.2 Opening Year (2021) Plus Project Intersection Level of Service

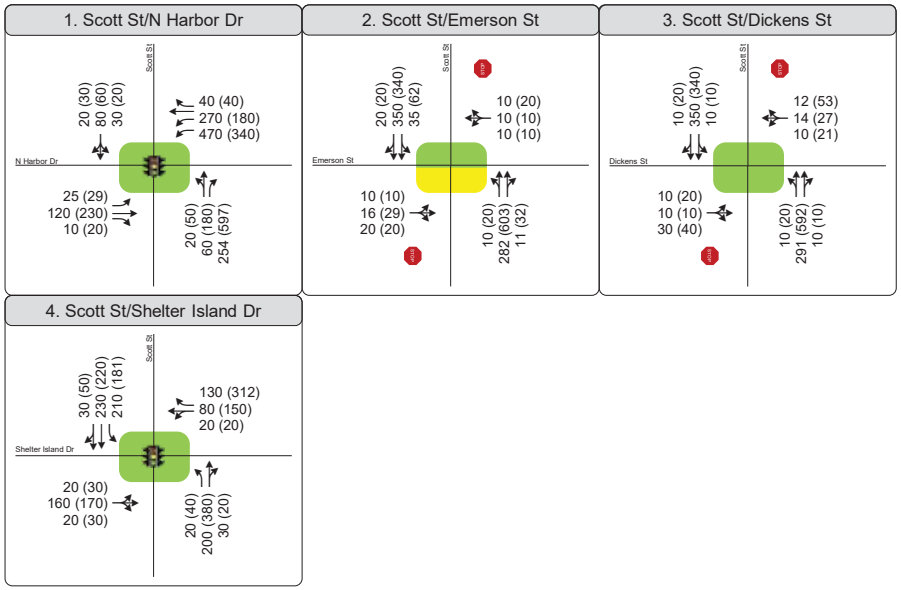
To forecast the peak hour operating conditions at each study intersection, the project trip assignment was superimposed on Opening Year (2021) Without Project traffic volumes to yield Opening Year (2021) Plus Project volumes.

Figure 8 presents the projected Opening Year (2021) Plus Project AM and PM peak hour volumes. The volumes on **Figure 7** were used to analyze operations using the aforementioned LOS methodology.

The results of the LOS analysis for the study intersections are presented in **Table 10**, and detailed LOS results for intersection movements and corresponding LOS calculation sheets are included in **Appendix B**. The results presented in **Table 10** indicate that under Opening Year (2021) Plus Project Conditions all intersections and critical movements at unsignalized intersections are expected to operate at a desirable level (i.e., LOS D or better).

Given the addition of project trips to the southbound left-turn movement on Scott Street at Emerson Street, the operation of this movement was reviewed to determine if a separate left-turn would be required. As shown on the detailed LOS worksheet, the subject southbound left-turn is projected to operate at LOS A in both the AM and PM peak hours, under Opening Year (2021) Plus Project Conditions. Based on these results, a dedicated left-turn lane on Scott Street is not required to serve the project site.





LEGEND

AM (PM)	Peak Hour Traffic Volume
	Lane Configuration
	Stop Sign
	Signalized
AM PM A-C D E F	Level of Service (LOS)

Figure 8

Opening Year (2021) Plus Project Peak Hour Traffic Volumes and Geometries

Table 10: Opening Year (2021) Plus Project Intersection Levels of Service (LOS)

Intersection	Traffic Control	Peak Hour	Opening Year 2021 Delay (sec/veh)[1]	Opening Year 2021 Baseline LOS[2,3]	Opening Year 2021 Plus Project Delay (sec/veh)[1]	Opening Year 2021 Plus Project LOS[2]	Delay Increase
1. Harbor Drive & Scott Street	Signalized	AM	12.1	B	12.5	B	0.4
		PM	14.5	B	15.6	B	1.1
2. Scott Street & Emerson Street	TWSC	AM	14.2	B	15.1	C	0.9
		PM	21.7	C	26.5	D	4.8
3. Scott Street & Dickens Street	TWSC	AM	14	B	14.3	B	0.3
		PM	20.5	C	22.2	C	1.7
4. Shelter Island Drive & Scott Street	Signalized	AM	14.7	B	14.7	B	0.0
		PM	17.3	B	17.3	B	0.0

Source: Fehr & Peers, 2019
Notes: TWSC = Two-way Stop Control
[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections. Worst movement delay reported for two-way stop-control (TWSC) intersections.
[2] LOS calculations performed using the *Highway Capacity Manual (HCM), 6th Edition* method.

7.3 Opening Year (2021) Plus Project Roadway Levels of Service

The roadway LOS of Scott Street between Emerson Street and Dickens Street was analyzed with the addition of ambient traffic growth, cumulative project traffic, and proposed project traffic. The expected traffic volume on this roadway segment is 11,045 vpd under this scenario. With these additional trips, the roadway LOS would remain at LOS D with an increase in V/C ratio to 0.74.

7.4 Potential Traffic Impacts

Based on the City of San Diego significant impact criteria, the proposed project is not expected to result in any traffic impacts to the surrounding roadway network.

8. Site Access and On-Site Circulation

This chapter includes a review of the site access, on-site circulation for vehicles, bicyclists and pedestrians, and on-site parking. An evaluation of off-site active and transit travel modes is presented in **Chapter 8**.

8.1 Site Access

Vehicular site access to the subterranean parking area will be provided on Emerson Street. Access out of the parking area will be provided on Dickens Street. Self-parking will occur when hotel occupancy levels generate fewer than roughly 35 parked vehicles, excluding electric vehicles or those with a handicap placard. When demand warrants, valet service will be provided to park visitor vehicles in the parking area. Due to the relatively low number of project-generated vehicle trips during the peak hour, no queueing or circulation issues are expected with the proposed driveway access configuration. During the AM peak, six vehicles (or an average of one every ten minutes) are expected to enter the site, and 22 vehicles (one approximately every two to three minutes) are expected to exit the site. During the PM peak, 33 vehicles (about one every two minutes) are expected to enter the site and 11 vehicles (less than one every five minutes) are expected to exit the site.

For those traveling to and from the site using a transportation network company (TNC), such as Uber or Lyft, taxi, or carpool, a drop-off/pick-up area will be provided in the subterranean parking area. This will prevent vehicles from stopping on Emerson Street and causing potential circulation issues. No issues are expected with the circulation within the project parking. Parking is discussed in more detail in **Chapter 11**.

8.2 On-Site Pedestrian and Bicycle Circulation

Pedestrian entrances to the hotel building will be provided on Scott Street (approximately midway between Emerson and Dickens Streets) and on Emerson Street just east of Scott Street. An improved sidewalk with landscaping is proposed along Emerson Street, Scott Street, and Dickens Street. All entrances and exits will be ADA accessible. Pedestrian access to the subterranean parking area will be provided via elevators and stairs inside of the building.

Five short-term bicycle spaces will be provided on Emerson Street, and additional bicycle parking in the form of five bike lockers will be provided in the parking area.

9. Multimodal Evaluation

The potential impact of the proposed project on the off-site pedestrian, bicycle and transit facilities and services is addressed in this chapter.

9.1 Transit Facilities and Access

There are no existing transit stops on Scott Street, Emerson Street, or Dickens Street in the vicinity of the project. Therefore, the project will not have an effect on existing transit stop locations or transit routes.

9.2 Bicycle Facilities

Currently no dedicated bicycle facilities are provided on Scott Street, Emerson Street, or Dickens Street in the vicinity of the project. Scott Street is designated as a bicycle route with sharrows. Bicyclists are able to access destinations north and south of the project using the shared use path along the harbor/San Diego Bay. This path can be accessed at the end of Emerson Street. The *City of San Diego Bicycle Master Plan* (2013) does not identify future bicycle facilities on any of the streets immediately adjacent to the project site. *The Peninsula Community Plan* (1987) also does not specify plans for additional bicycle facilities in the project area.

Based on the current commute mode split for bicycling in San Diego (2%) and assuming a small proportion of guests will bike to and from the site, the total number of bicycle trips is estimated to be less than 10% of site-generated peak hour vehicle trips. This would yield fewer than five to seven bicycle trips during the AM or PM peak hours, respectively. While bicycling would be encouraged as a travel mode, these volumes do not by themselves warrant any new facilities adjacent to the site.

Because implementation of the project is not expected to: 1) have an adverse effect on existing or planned bicycle facilities in the area, and 2) generate a volume of bicycle trips that require additional facilities, the proposed hotel is not expected to result in any significant impacts to bicycling.

9.3 Pedestrian Facilities

As a part of the project, improved sidewalks, landscaping, and shade trees will be installed along the project perimeter on Emerson Street, Scott Street, and Dickens Street. Implementation of the project will not impede the use of any existing sidewalks in the project area, and the enhancements are expected to further encourage walking by hotel guests and employees. Because the project will not conflict with any existing

or planned pedestrian facilities, and those facilities will able to accommodate anticipated pedestrian volumes, no pedestrian impacts were identified.

10. Sight Distance Analysis

The proposed project will construct a building that could impede sight distance of vehicle drivers on the westbound approaches of Dickens and Emerson Streets at Scott Street. These drivers will require adequate sight lines to see approaching vehicles on Scott Street before they turn onto that roadway.

The City of San Diego Municipal Code Section 113.0273 outlines requirements for visibility areas at intersection corners. Additionally, detailed stopping and intersection sight distance was calculated using the formulas provided in the AASHTO *A Policy on Geometric Design of Highways and Streets*. Based on the formulas below and the assumption that the driver's eye would be located approximately ten feet behind the side street stop line and three feet right of the roadway centerline, sight distance triangles were created and superimposed on the project site plan. The location of an approaching vehicle is assumed to be in the center of the nearest travel lane in each direction.

For this evaluation, sight distances were calculated for both standard intersection sight distance (ISD) and for minimum stopping sight distance (SSD). The SSD evaluation was completed with the understanding that in the urban environment, it can sometimes to be a challenge to provide ISD because of existing visual impediments (e.g., building faces, established large trees, etc.). Each method is presented below.

Intersection Sight Distance Formula

$$\text{ISD for left turn from stop} = 1.47\ V_{major}\ t_g$$

Where:

ISD = intersection sight distance

V_{major} = design speed of major road (mph)

t_g = time gap for minor road vehicle to enter the major road

For this analysis, the design speed of the roadway used in this analysis was 35 mph, which is 5 mph over the posted speed limit. The time gap was calculated as 8.5 seconds based on a 7.5-second gap for passenger cars on a two-lane highway, plus an additional one second to account for the two additional lanes on Scott Road.

The ISD for right turn from stop and crossing maneuver was calculated using the ISD for Right Turn from Stop and Crossing Maneuver table of the AASHTO guide which provided the following information for a roadway with a design speed of 35 mph. The calculation is presented below, and the resulting intersection sight distance triangles are shown in **Figure 9**.

Design Speed (mph)	Stopping Sight Distance	Intersection Sight Distance for Passenger Cars	
		Calculated (ft)	Design (ft)
35	250	334.4	335

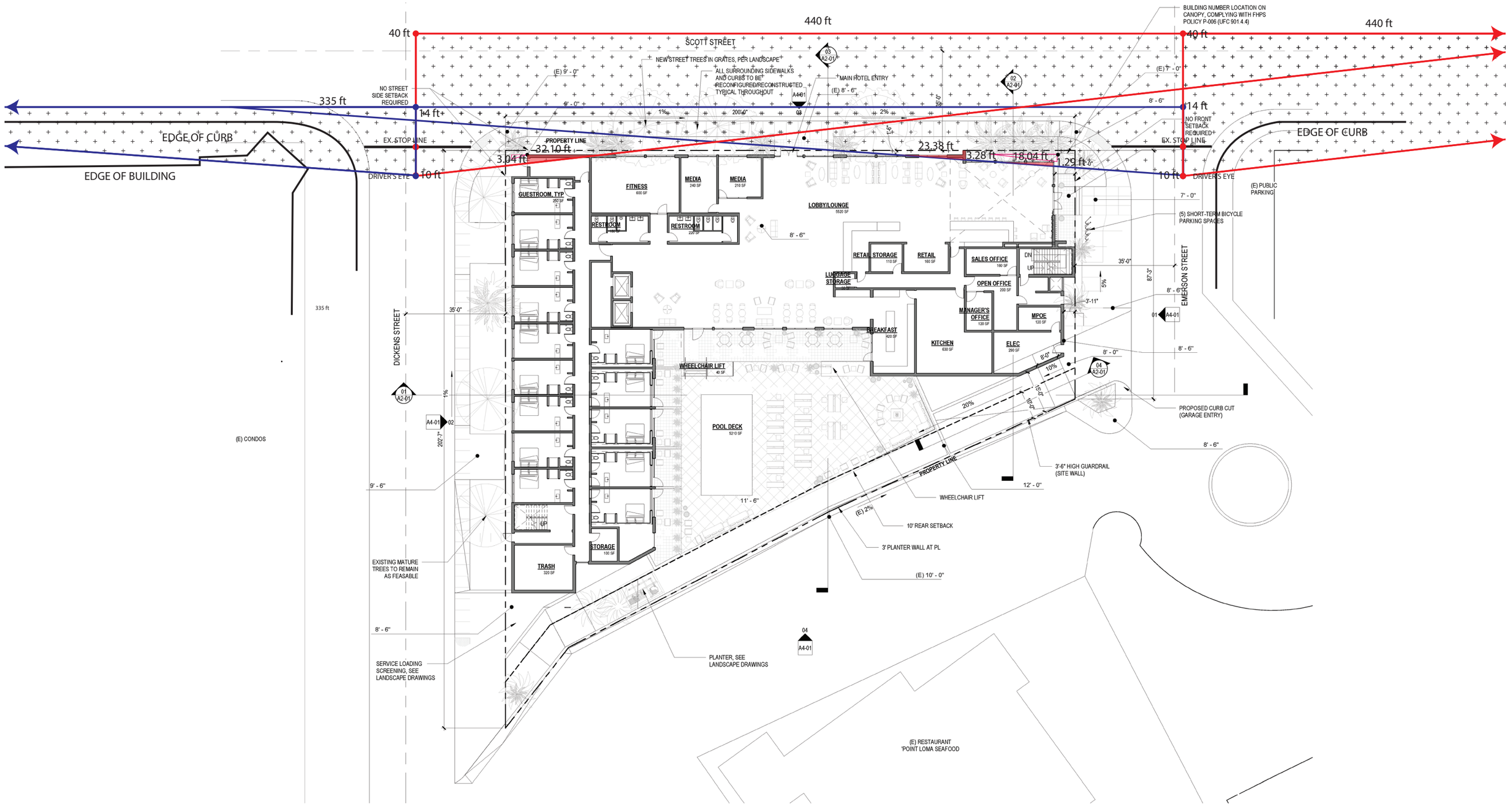
Stopping Sight Distance Calculation

Minimum stopping distance was calculated using the Stopping Sight Distance on Level Roadways table of the AASHTO guide, which provided the following information for a roadway with a design speed of 35 mph. The calculation is presented below, and the resulting stopping sight distance triangles are shown in **Figure 10**.

Design Speed (mph)	Brake Reaction Distance (ft)	Braking Distance on Level (ft)	Stopping Sight Distance	
			Calculated (ft)	Design (ft)
35	128.6	117.6	246.2	250

This analysis resulted in sight triangles that were within the property line and in the case of the intersection, sight distance triangles within the build-to-line. The current building design provides adequate stopping sight distance, but it conflicts with the intersection sight distance (ISD) triangles. To provide adequate ISD per the calculation, the building corners would have to be adjusted to avoid the sight triangles.

In an urban environment like on Scott Street in Point Loma, it is not uncommon for drivers to move their vehicles slightly forward after initially stopping at the stop line to obtain adequate sight distance to make a turn. Without making any adjustments to the building design, vehicles would have to move forward at least 1.5 feet on Emerson Street and 3.0 feet on Dickens Street to obtain adequate ISD. These encroachments into the unmarked crosswalk area are not considered excessive as long as a driver does not impede pedestrian travel.



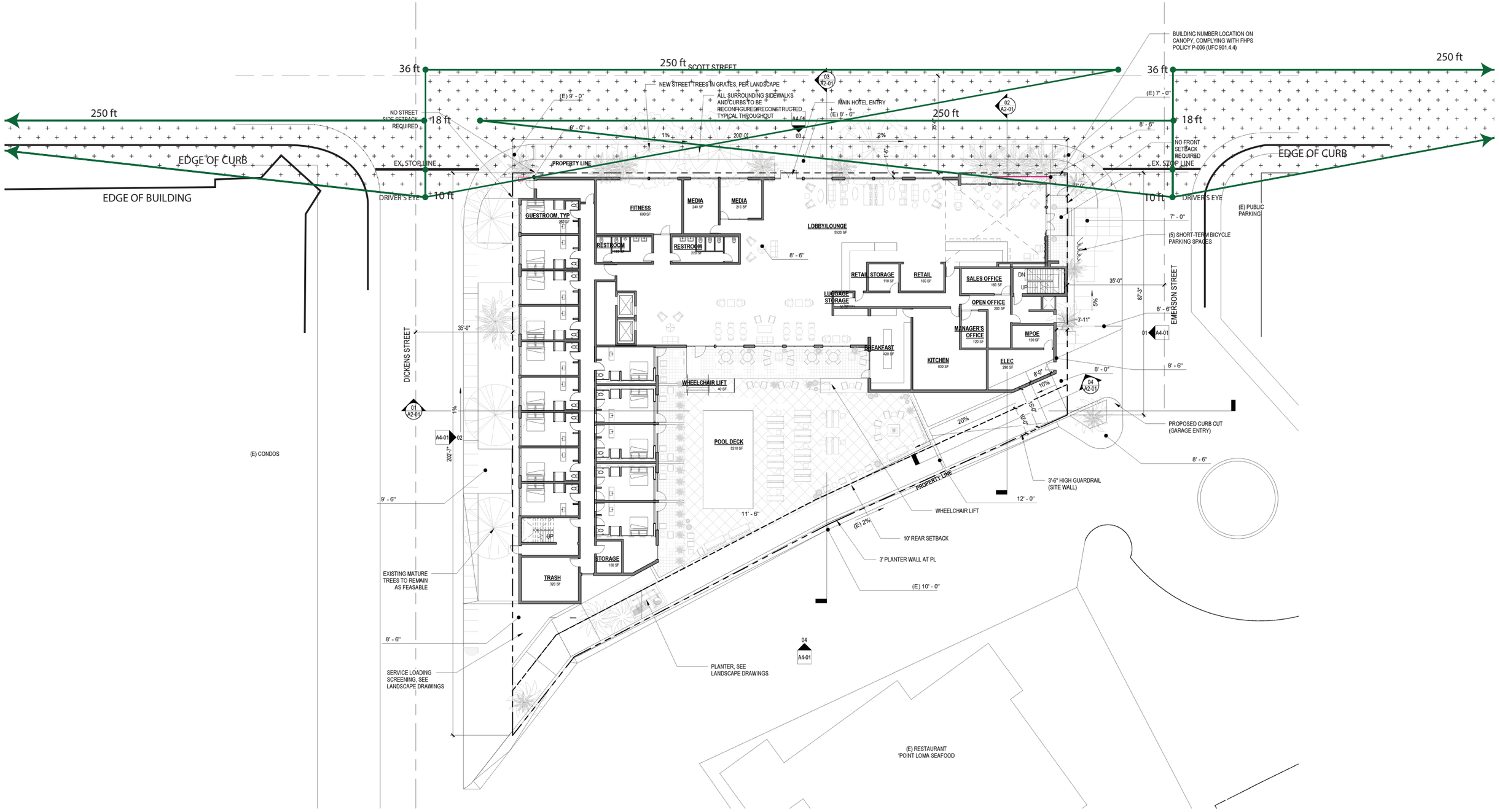
Intersection Sight Distance - Left Turn from Stopped on Minor Street

Intersection Sight Distance - Right Turn from Stopped on Minor Street

Conflict Areas

Figure 9

Intersection Sight Distance



Stopping Sight Distance on Major Street

Figure 10
Stopping Sight Distance

11. Parking

This chapter assesses the proposed parking supply for the project in terms of adequacy and consistency with the City of San Diego parking requirements.

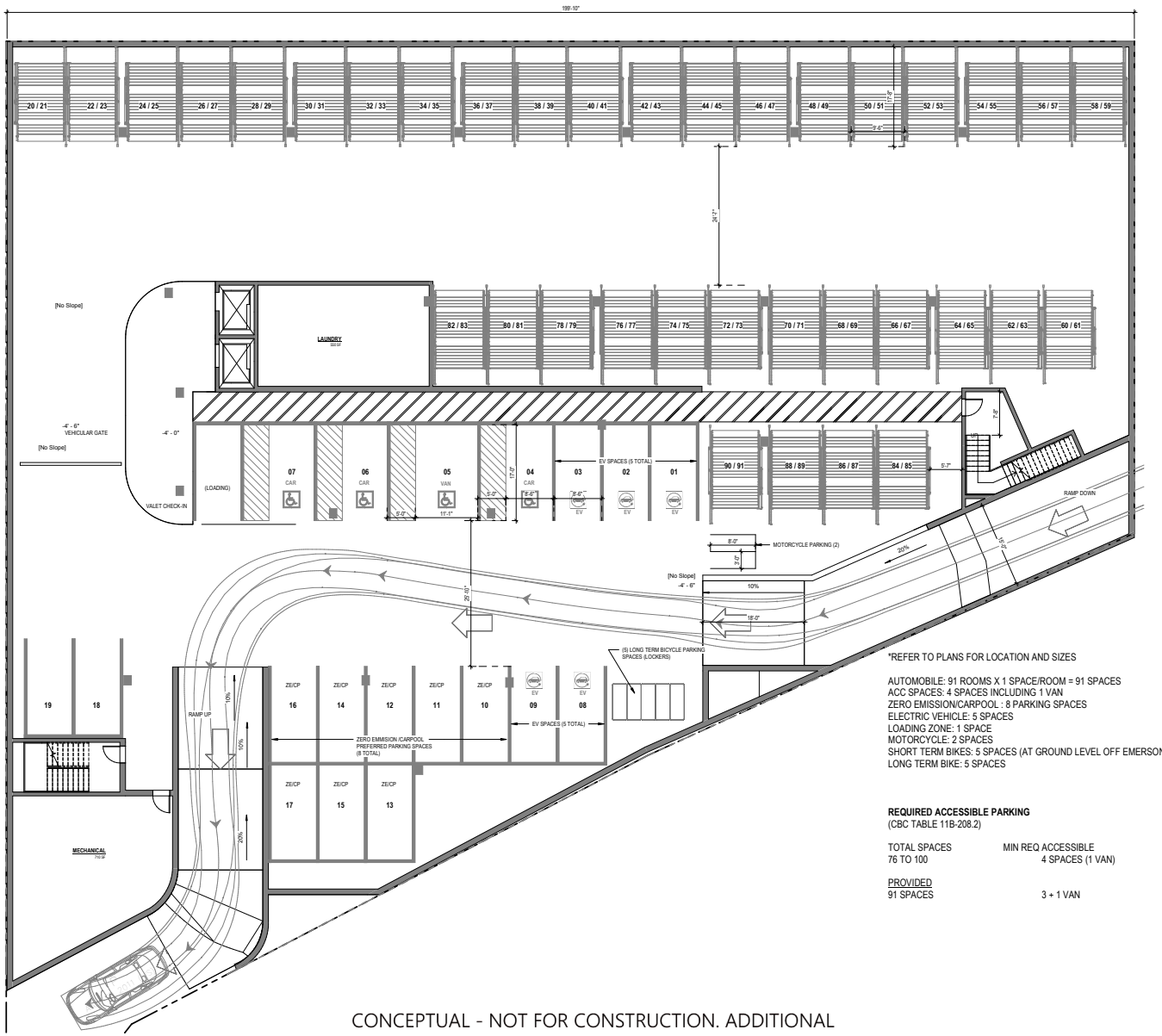
The City of San Diego Municipal Code Chapter 14 Article 2 Division 5 Table 142-05G states that visitor accommodation requires one parking space per guest room. For the proposed Point Loma Hotel, which will have up to 95 rooms, a total of 95 vehicle parking spaces would be required. It should be noted that subsequent to completion of the traffic impact analysis documented in **Chapters 4** through **7**, the current project was revised to propose 91 rooms, which would require 91 total vehicle spaces. Based on specific requirements for various types of spaces, the following designations are required by the City:

- ADA spaces = 4 spaces including 1 van-accessible
- Zero emission/carpool = 8 spaces
- Electric vehicles = 5 spaces
- Motorcycle = 2 spaces
- Loading zone = 1 space
- Bicycle spaces = 5 short-term and 5 long-term

As shown in **Figure 11**, the project can accommodate all of these requirements from a total space designation perspective.

The Municipal Code Section 142.0556 outlines requirements for mechanical automobile lifts or stackers, which are proposed as part of the proposed project. The proposed lift system will allow one vehicle to be stacked above another. The vehicle on the lift will only be able to be accessed when the vehicle below it is removed.

The Municipal Code Section 142.0555 outlines requirements for tandem parking. Tandem parking is limited to assigned employee parking spaces, valet parking associated with restaurant use, and bed and breakfast establishments. All tandem parking for commercial uses is approved through a Neighborhood Development Permit. As shown in **Figure 11**, two locations include tandem spaces: 1) three spaces to the right of the exit driveway, and 2) four stacker spaces at the right end of the center parking aisle. In the latter location, the two stackers would effectively operate as a four-car tandem space requiring the movement of up to three vehicles to access a fourth on the recessed stacker. Although this design is not specifically cited in the City code, the proposed design will require a variance because tandem spaces are typically restricted to a total of two vehicles.



*REFER TO PLANS FOR LOCATION AND SIZES

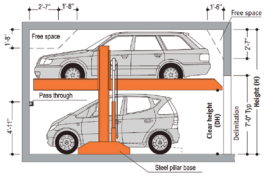
AUTOMOBILE: 91 ROOMS X 1 SPACE/ROOM = 91 SPACES
ACC SPACES: 4 SPACES INCLUDING 1 VAN
ZERO EMISSION/CARPOOL : 8 PARKING SPACES
ELECTRIC VEHICLE: 5 SPACES
LOADING ZONE: 1 SPACE
MOTORCYCLE: 2 SPACES
SHORT TERM BIKES: 5 SPACES (AT GROUND LEVEL OFF EMERSON)
LONG TERM BIKE: 5 SPACES

REQUIRED ACCESSIBLE PARKING
(CBC TABLE 11B-208.2)

TOTAL SPACES	MIN REQ ACCESSIBLE
76 TO 100	4 SPACES (1 VAN)

PROVIDED

91 SPACES	3 + 1 VAN



G61 EV FREE STANDING
(PROVIDED BY CLIENT)

APPROXIMATE 16" X 20" COLUMN LOCATIONS

STACKER UNIT

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

FEHR & PEERS
401 West A Street
Suite 900
San Diego, CA 92101
(619) 234-3190

Figure 11
Parking Plan

During time periods when the hotel is at low occupancy levels, guests will be able to self-park in the lot in any of the appropriate spaces. Using the online reservation system and advance requests from guests to use an on-site space, the hotel operator will be able to determine when parking will be in high demand. During these high-demand periods, the vehicle stackers will be used in combination with a valet service to allow access to all on-site spaces.

12. Transportation Demand Management (TDM)

The City of San Diego strives to enhance sustainability through a variety of measures documented in its *Climate Action Plan* (CAP) (2015). The City's CAP includes strategies to reduce greenhouse gas (GHG) emissions, energy use, etc., and specifically addresses measures related to transportation and mobility. A key strategy to reduce the number of single-occupant vehicle trips and the total vehicle miles of travel (VMT) is the inclusion of transportation demand management (TDM) measures that can be implemented by a project developer.

As part of the Point Loma Hotel development, the following TDM measures are recommended to assist in the reduction of employee commute and hotel guest VMT:

Designation of a Transportation Coordinator

A transportation coordinator would oversee all transportation issues, including managing the TDM measures, parking, loading, and services. This individual, who could be the concierge or another hotel employee, would be available to provide information to guests and employees regarding mobility options, including alternatives to driving a personal or rented vehicle. This individual would also market the hotel's TDM measures to employees to encourage employees to commute to the site using transit or active transportation (or a combination of both).

Ride-Sharing Programs

This program would connect employees with one another to share rides schedules and origins/destinations permitting. Participation and marketing of SANDAG's iCommute program is one method of accomplishing this goal.

Provision of Transit Schedules

Links to the existing MTS website should be included on the hotel website. Additionally, hotel management should post information regarding public transportation services, maps, schedules, fare information, and web apps in one or more locations that will be visible by both guests and employees. Real-time transit information should also be linked at these locations.

Bicycling/Scooter Resources

Secured bicycle spaces will be provided at safe, convenient, and visible on-site locations as appropriate for both employees and hotel guests. Lockers, showers and changing areas should be provided for employees

who choose to commute by bicycle or scooter. The hotel should also designate an area for dockless bike or scooter parking. Another option is to provide helmets for rent to guests and/or employees.

Parking Cash Out

The hotel operator should provide an option for employees that drive to use an alternative form of transportation. Under a parking cash-out program, the hotel operator will give employees a choice to use a parking space at the site, or to accept a cash payment and not drive to their place of employment (i.e., give up rights to a parking space). Parking cash-out programs are one of the most effective means to encourage employees not to drive alone to work.

Transit Pass Discounts

The hotel operator should subsidize the cost of a monthly MTS transit pass if the employee does not drive to the project site and instead chooses to utilize transit. To be effective, the subsidy should be at least 25% of the cost to the employee.

Guaranteed Ride Home

For employees who use active modes of transportation or transit, a guaranteed ride home for emergencies only will be provided. This typically includes reimbursement of employee expenses for use of a taxi or transportation network company (e.g., Uber or Lyft). Reimbursement is only provided in the case of an emergency and not for regular travel. Additionally, SANDAG's iCommute program offers a guaranteed ride home program that employees can take advantage of if they carpool, vanpool, take transit, bike or walk to work.

The TDM program will primarily impact the mobility choices of the hotel's employees. Although no TDM measures are required per the City's CAP Checklist due to the project's low number of employees, the measures listed above are generally consistent with those provided in the checklist.

Appendix A

Traffic Count Data

Prepared by NDS/ATD

VOLUME

Scott St Bet. Emerson St & Dickens St

Day: Thursday
Date: 1/3/2019

City: San Diego
Project #: CA19_4000_001

DAILY TOTALS	NB	SB	EB	WB	Total
	5,998	4,871	0	0	10,869

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	7		6				13		12:00	118		90				208	
00:15	6		7				13		12:15	112		78				190	
00:30	6		4				10		12:30	127		91				218	
00:45	2	21	4	21			6	42	12:45	107	464	78	337			185	801
01:00	2		4				6		13:00	134		91				225	
01:15	3		3				6		13:15	139		90				229	
01:30	6		2				8		13:30	113		85				198	
01:45	1	12	4	13			5	25	13:45	115	501	71	337			186	838
02:00	5		3				8		14:00	140		63				203	
02:15	0		2				2		14:15	141		82				223	
02:30	1		1				2		14:30	152		92				244	
02:45	0	6	0	6			0	12	14:45	117	550	75	312			192	862
03:00	3		2				5		15:00	171		76				247	
03:15	2		2				4		15:15	151		103				254	
03:30	2		3				5		15:30	167		84				251	
03:45	1	8	6	13			7	21	15:45	159	648	81	344			240	992
04:00	0		3				3		16:00	158		81				239	
04:15	7		12				19		16:15	150		86				236	
04:30	2		9				11		16:30	169		89				258	
04:45	9	18	14	38			23	56	16:45	147	624	99	355			246	979
05:00	9		10				19		17:00	144		73				217	
05:15	14		23				37		17:15	134		89				223	
05:30	20		35				55		17:30	106		91				197	
05:45	20	63	39	107			59	170	17:45	80	464	87	340			167	804
06:00	20		44				64		18:00	90		65				155	
06:15	25		65				90		18:15	87		82				169	
06:30	28		81				109		18:30	72		74				146	
06:45	24	97	96	286			120	383	18:45	42	291	59	280			101	571
07:00	30		100				130		19:00	42		46				88	
07:15	42		91				133		19:15	46		40				86	
07:30	53		110				163		19:30	38		39				77	
07:45	59	184	100	401			159	585	19:45	44	170	33	158			77	328
08:00	70		91				161		20:00	52		29				81	
08:15	69		79				148		20:15	47		32				79	
08:30	89		80				169		20:30	44		25				69	
08:45	72	300	91	341			163	641	20:45	43	186	26	112			69	298
09:00	78		85				163		21:00	24		24				48	
09:15	101		74				175		21:15	22		15				37	
09:30	86		80				166		21:30	28		15				43	
09:45	78	343	74	313			152	656	21:45	37	111	14	68			51	179
10:00	88		62				150		22:00	41		24				65	
10:15	89		70				159		22:15	24		22				46	
10:30	102		71				173		22:30	18		11				29	
10:45	94	373	69	272			163	645	22:45	10	93	12	69			22	162
11:00	97		67				164		23:00	6		12				18	
11:15	123		77				200		23:15	8		14				22	
11:30	107		83				190		23:30	6		7				13	
11:45	116	443	82	309			198	752	23:45	8	28	6	39			14	67
TOTALS		1868		2120				**3988**	**TOTALS**		4130		2751				**6881**
SPLIT %		46.8%		53.2%				**36.7%**	**SPLIT %**		60.0%		40.0%				**63.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	5,998	4,871	0	0	10,869

AM Peak Hour	11:45	07:00				**11:45**	**PM Peak Hour**	15:00	16:00				**15:00**
AM Pk Volume	473	401				**814**	**PM Pk Volume**	648	355				**992**
Pk Hr Factor	0.931	0.911				**0.933**	**Pk Hr Factor**	0.947	0.896				**0.976**
7 - 9 Volume	484	742	0	0		**1226**	**4 - 6 Volume**	1088	695	0	0		**1783**
7 - 9 Peak Hour	08:00	07:00				**08:00**	**4 - 6 Peak Hour**	16:00	16:00				**16:00**
7 - 9 Pk Volume	300	401	0	0		**641**	**4 - 6 Pk Volume**	624	355	0	0		**979**
Pk Hr Factor	0.843	0.911	0.000	0.000		**0.948**	**Pk Hr Factor**	0.923	0.896	0.000	0.000		**0.949**

Prepared by National Data & Surveying Services

Scott St & Emerson St

Peak Hour Turning Movement Count

ID: 19-04001-001
City: San Diego

Day: Thursday
Date: 01/03/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Scott St)

AM	12	345	13	0	278	AM
NOON	0	0	0	0	0	NOON
PM	15	329	39	0	617	PM

EASTBOUND (Emerson St)

AM	NOON	PM	
22	0	32	
0	0	0	0
6	0	8	0
7	0	14	1
17	0	15	0

WESTBOUND (Emerson St)

PM	NOON	AM	
16	0	3	0
6	0	2	1
5	0	1	0
0	0	0	0
75	0	25	

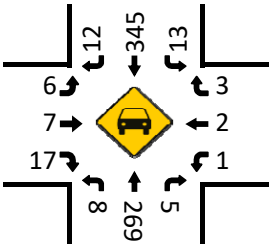
NORTHBOUND (Scott St)

PM	349	0	11	593	22	PM
NOON	0	0	0	0	0	NOON
AM	363	0	8	269	5	AM

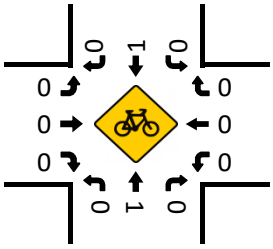
CONTROL: 2-Way Stop(EB/WB)

TEV	688 AM	0 NOON	1073 PM
PHF	0.96		0.98

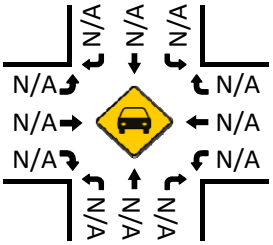
Total Vehicles (AM)



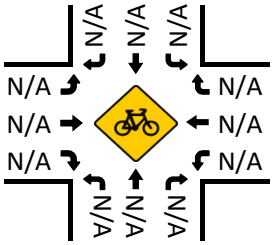
Bikes (AM)



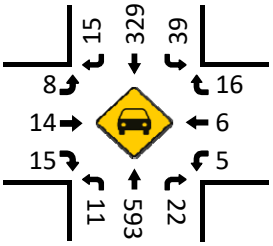
Total Vehicles (Noon)



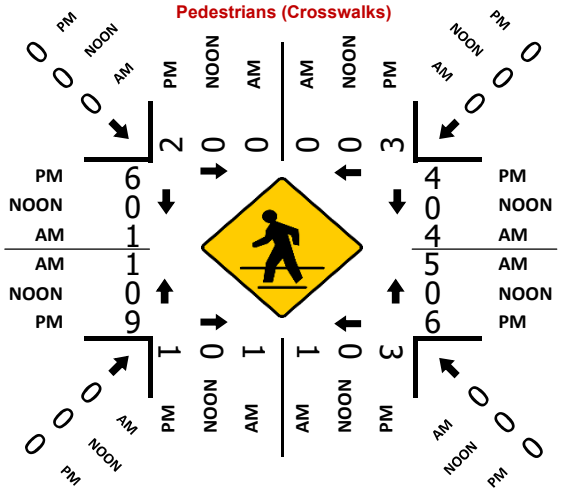
Bikes (NOON)



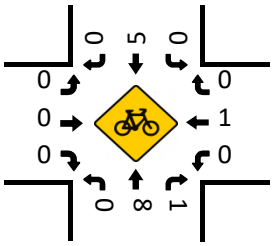
Total Vehicles (PM)



Pedestrians (Crosswalks)



Bikes (PM)



Prepared by National Data & Surveying Services

Scott St & Dickens St

Peak Hour Turning Movement Count

ID: 19-04001-002
City: San Diego

Day: Thursday
Date: 01/03/2019

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:00 PM - 05:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Scott St — SOUTHBOUND

AM	8	343	3	0	290	AM
NOON	0	0	0	0	0	NOON
PM	12	332	3	0	630	PM
	0	2	0	0		

Dickens St — EASTBOUND

AM	NOON	PM	
19	0	40	
0	0	0	0
5	0	11	0
2	0	8	1
28	0	39	0
AM	NOON	PM	

CONTROL

2-Way Stop(EB/WB)

TEV	692 AM	0 NOON	1075 PM
PHF	0.87		0.96

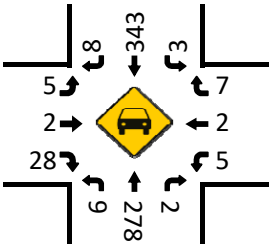
WESTBOUND — Dickens St

PM	NOON	AM	
40	0	7	0
14	0	2	1
18	0	5	0
0	0	0	0
16	0	7	
PM	NOON	AM	

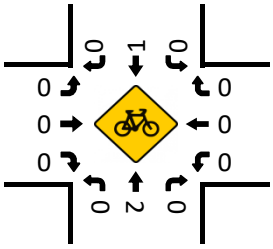
Scott St — NORTHBOUND

	0	0	2	0		
PM	389	0	14	579	5	PM
NOON	0	0	0	0	0	NOON
AM	376	0	9	278	2	AM

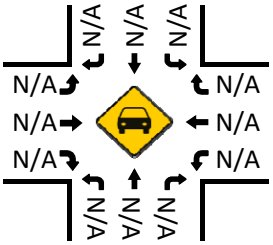
Total Vehicles (AM)



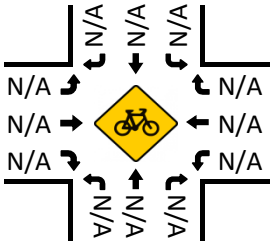
Bikes (AM)



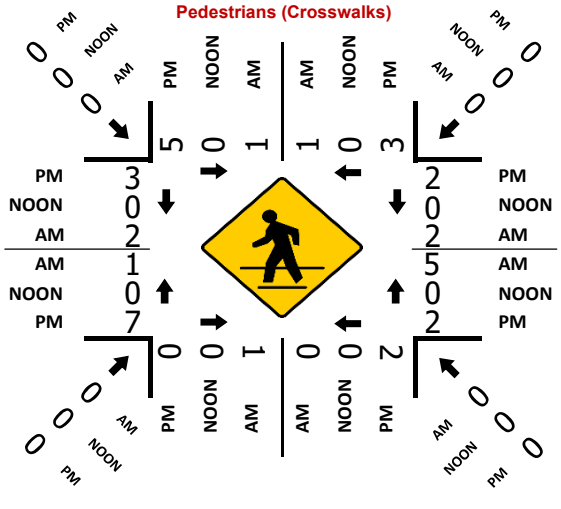
Total Vehicles (Noon)



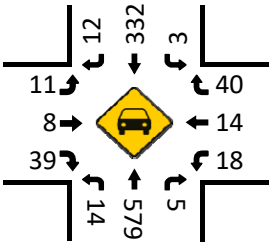
Bikes (NOON)



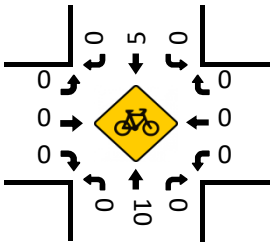
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Scott St & Harbor Dr

Peak Hour Turning Movement Count

ID: 19-04020-001
City: San Diego

Day: Thursday
Date: 01/10/2019

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	1314	0	1647
PHF	0.86		0.95

SOUTHBOUND (Scott St)

	Left	Thru	Right	U-Turn	Total	
AM	15	79	28	0	94	AM
NOON	0	0	0	0	0	NOON
PM	20	53	13	0	222	PM

EASTBOUND (Harbor Dr)

	Left	Thru	Right	U-Turn	
AM	299	0	234		
NOON	0	0	0	0	0
PM	6	0	9	1	1
	118	0	222		1
	7	0	12		1
	AM	NOON	PM		

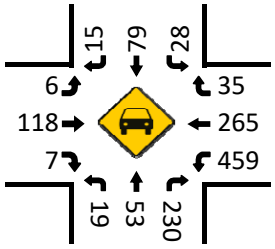
WESTBOUND (Harbor Dr)

	Left	Thru	Right	U-Turn	
PM	39	0	35		1
NOON	172	0	265		1
AM	317	0	459		2
	0	0	0	0	0
	809	0	376		
	PM	NOON	AM		

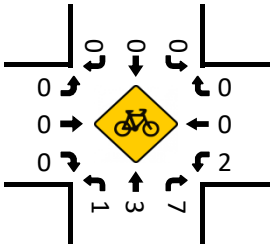
NORTHBOUND (Scott St)

	Left	Thru	Right	U-Turn	Total	
PM	382	0	42	174	574	PM
NOON	0	0	0	0	0	NOON
AM	545	0	19	53	230	AM

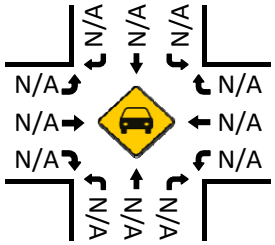
Total Vehicles (AM)



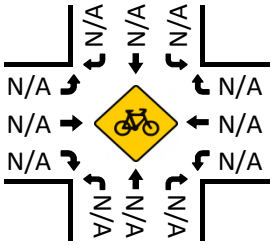
Bikes (AM)



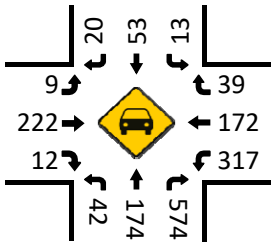
Total Vehicles (Noon)



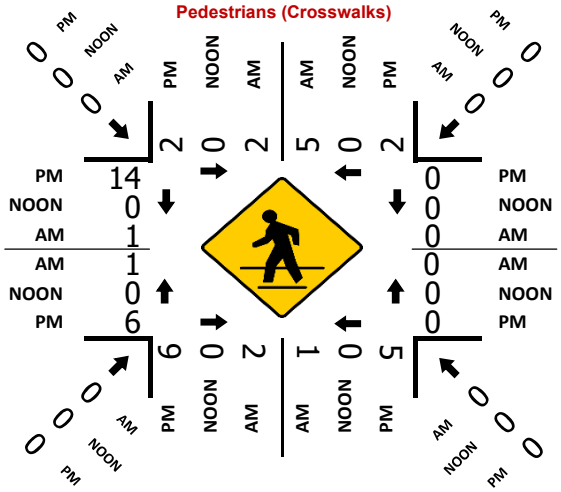
Bikes (NOON)



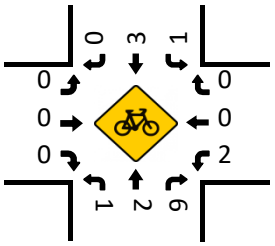
Total Vehicles (PM)



Pedestrians (Crosswalks)



Bikes (PM)



Prepared by National Data & Surveying Services

Scott St & Shelter Island Dr

Peak Hour Turning Movement Count

ID: 19-04020-002
City: San Diego

Day: Thursday
Date: 01/10/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Scott St)

AM	25	221	206	0	337	AM
NOON	0	0	0	0	0	NOON
PM	44	212	175	0	702	PM

EASTBOUND (Shelter Island Dr)

AM	NOON	PM	
116	0	228	
0	0	0	0
11	0	21	0
151	0	159	1
19	0	21	0

WESTBOUND (Shelter Island Dr)

PM	NOON	AM	
305	0	128	1
148	0	77	0.5
12	0	16	0.5
0	0	0	0
351	0	378	

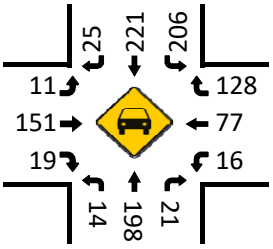
NORTHBOUND (Scott St)

PM	245	0	36	376	17	PM
NOON	0	0	0	0	0	NOON
AM	256	0	14	198	21	AM

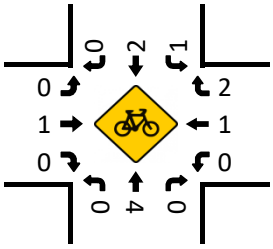
	0	2	1	0
	0	1	1	0

CONTROL			
Signalized			
TEV	1087 AM	0 NOON	1526 PM
PHF	0.88		0.99

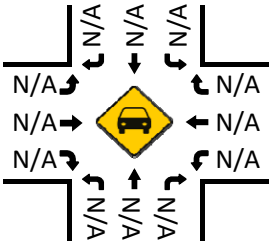
Total Vehicles (AM)



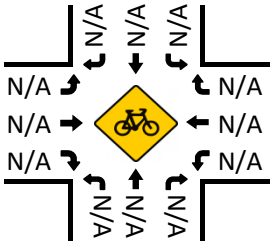
Bikes (AM)



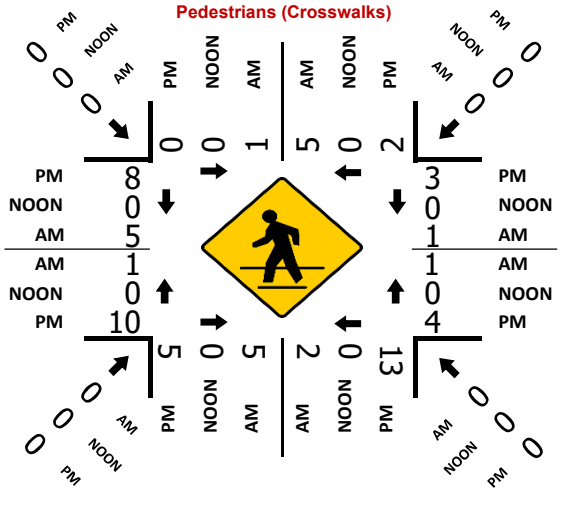
Total Vehicles (Noon)



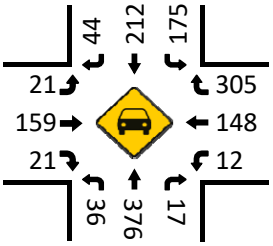
Bikes (NOON)



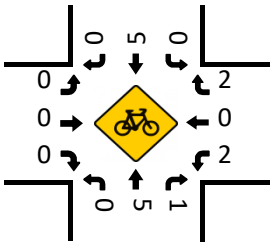
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Appendix B

Detailed LOS Worksheets

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/04/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	118	7	459	265	35	19	53	230	28	79	15
Future Volume (veh/h)	6	118	7	459	265	35	19	53	230	28	79	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	137	1	534	308	0	22	62	267	33	92	10
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	470	397	751	895		153	222	579	151	186	18
Arrive On Green	0.01	0.25	0.25	0.22	0.48	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	1870	1579	3456	1870	1585	272	1494	1579	267	1251	121
Grp Volume(v), veh/h	7	137	1	534	308	0	84	0	267	135	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1579	1728	1870	1585	1766	0	1579	1639	0	0
Q Serve(g_s), s	0.2	2.4	0.0	5.8	4.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.2	2.4	0.0	5.8	4.1	0.0	1.6	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.26		1.00	0.24		0.07
Lane Grp Cap(c), veh/h	13	470	397	751	895		375	0	579	355	0	0
V/C Ratio(X)	0.53	0.29	0.00	0.71	0.34		0.22	0.00	0.46	0.38	0.00	0.00
Avail Cap(c_a), veh/h	1107	2324	1962	3435	2324		1789	0	1914	1667	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.9	12.2	11.3	14.6	6.5	0.0	15.3	0.0	9.7	15.8	0.0	0.0
Incr Delay (d2), s/veh	11.4	0.1	0.0	0.5	0.2	0.0	0.3	0.0	0.6	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.8	0.0	1.7	1.0	0.0	0.6	0.0	1.4	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	12.3	11.3	15.0	6.7	0.0	15.6	0.0	10.3	16.0	0.0	0.0
LnGrp LOS	C	B	B	B	A		B	A	B	B	A	A
Approach Vol, veh/h		145			842	A		351			135	
Approach Delay, s/veh		13.2			12.0			11.6			16.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	15.2		10.9	4.7	24.7		10.9				
Change Period (Y+Rc), s	5.4	5.1		4.9	4.4	* 5.4		4.9				
Max Green Setting (Gmax), s	40.0	50.0		40.0	25.0	* 50		40.0				
Max Q Clear Time (g_c+I1), s	7.8	4.4		4.9	2.2	6.1		3.6				
Green Ext Time (p_c), s	1.0	0.4		0.5	0.0	1.5		1.5				

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	7	17	1	2	3	8	269	5	13	345	12
Future Vol, veh/h	6	7	17	1	2	3	8	269	5	13	345	12
Conflicting Peds, #/hr	2	0	4	11	0	9	4	0	11	9	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	7	18	1	2	3	8	280	5	14	359	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	564	710	201	532	714	163	376	0	0	296	0	0
Stage 1	398	398	-	310	310	-	-	-	-	-	-	-
Stage 2	166	312	-	222	404	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	408	357	806	430	355	853	1179	-	-	1262	-	-
Stage 1	599	601	-	675	658	-	-	-	-	-	-	-
Stage 2	820	656	-	760	598	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	393	344	795	398	342	837	1175	-	-	1249	-	-
Mov Cap-2 Maneuver	393	344	-	398	342	-	-	-	-	-	-	-
Stage 1	592	590	-	663	646	-	-	-	-	-	-	-
Stage 2	801	644	-	716	587	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	12.3	0.2	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1175	-	-	526	502	1249	-	-
HCM Lane V/C Ratio	0.007	-	-	0.059	0.012	0.011	-	-
HCM Control Delay (s)	8.1	0	-	12.3	12.3	7.9	0.1	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

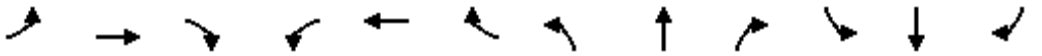
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	28	5	2	7	9	278	2	3	343	8
Future Vol, veh/h	5	2	28	5	2	7	9	278	2	3	343	8
Conflicting Peds, #/hr	5	0	4	8	0	9	4	0	8	9	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	2	32	6	2	8	10	320	2	3	394	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	600	761	215	562	764	179	408	0	0	331	0	0
Stage 1	410	410	-	350	350	-	-	-	-	-	-	-
Stage 2	190	351	-	212	414	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	385	334	790	410	332	833	1147	-	-	1225	-	-
Stage 1	589	594	-	639	631	-	-	-	-	-	-	-
Stage 2	794	631	-	770	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	370	325	780	380	323	819	1142	-	-	1215	-	-
Mov Cap-2 Maneuver	370	325	-	380	323	-	-	-	-	-	-	-
Stage 1	580	589	-	627	618	-	-	-	-	-	-	-
Stage 2	768	618	-	728	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	12.4	0.3	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	630	502	1215	-	-
HCM Lane V/C Ratio	0.009	-	-	0.064	0.032	0.003	-	-
HCM Control Delay (s)	8.2	0	-	11.1	12.4	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	151	19	16	77	128	14	198	21	206	221	25
Future Volume (veh/h)	11	151	19	16	77	128	14	198	21	206	221	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	172	20	18	88	61	16	225	22	234	251	22
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	303	34	125	316	679	402	377	37	429	794	69
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.23	0.23	0.23	0.24	0.24	0.24
Sat Flow, veh/h	49	1582	177	144	1647	1547	1781	1671	163	1781	3297	286
Grp Volume(v), veh/h	204	0	0	106	0	61	16	0	247	234	134	139
Grp Sat Flow(s),veh/h/ln	1808	0	0	1791	0	1547	1781	0	1835	1781	1777	1807
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.0	5.2	4.9	2.7	2.7
Cycle Q Clear(g_c), s	4.4	0.0	0.0	2.1	0.0	1.0	0.3	0.0	5.2	4.9	2.7	2.7
Prop In Lane	0.06		0.10	0.17		1.00	1.00		0.09	1.00		0.16
Lane Grp Cap(c), veh/h	435	0	0	441	0	679	402	0	414	429	428	435
V/C Ratio(X)	0.47	0.00	0.00	0.24	0.00	0.09	0.04	0.00	0.60	0.55	0.31	0.32
Avail Cap(c_a), veh/h	1747	0	0	1697	0	1820	2483	0	2557	2483	2476	2518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	0.0	0.0	14.9	0.0	7.2	13.0	0.0	14.9	14.3	13.4	13.4
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.8	1.2	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	0.8	0.0	0.4	0.1	0.0	1.9	1.8	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	0.0	15.0	0.0	7.2	13.0	0.0	15.8	15.4	13.9	13.9
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		204			167			263			507	
Approach Delay, s/veh		16.1			12.2			15.6			14.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		13.2		15.3		13.2				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		7.2		6.4		6.9		4.1				
Green Ext Time (p_c), s		1.2		0.8		2.7		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/04/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	222	12	317	172	39	42	174	574	13	53	20
Future Volume (veh/h)	9	222	12	317	172	39	42	174	574	13	53	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.97		0.98	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	234	2	334	181	0	44	183	604	14	56	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	17	407	340	502	688		151	505	724	132	418	46
Arrive On Green	0.01	0.22	0.22	0.15	0.37	0.00	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	1870	1561	3456	1870	1585	195	1590	1555	137	1315	145
Grp Volume(v), veh/h	9	234	2	334	181	0	227	0	604	77	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1561	1728	1870	1585	1785	0	1555	1597	0	0
Q Serve(g_s), s	0.2	5.4	0.0	4.4	3.3	0.0	0.0	0.0	9.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	5.4	0.0	4.4	3.3	0.0	4.5	0.0	9.2	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.19		1.00	0.18		0.09
Lane Grp Cap(c), veh/h	17	407	340	502	688		656	0	724	596	0	0
V/C Ratio(X)	0.54	0.57	0.01	0.67	0.26		0.35	0.00	0.83	0.13	0.00	0.00
Avail Cap(c_a), veh/h	923	1938	1618	2865	1938		1538	0	1519	1310	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.8	16.9	14.8	19.5	10.7	0.0	12.8	0.0	11.3	11.7	0.0	0.0
Incr Delay (d2), s/veh	9.5	0.5	0.0	0.6	0.2	0.0	0.3	0.0	2.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	0.0	1.5	1.1	0.0	1.7	0.0	4.7	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	17.4	14.8	20.1	10.8	0.0	13.1	0.0	13.9	11.8	0.0	0.0
LnGrp LOS	C	B	B	C	B		B	A	B	B	A	A
Approach Vol, veh/h		245			515	A		831			77	
Approach Delay, s/veh		17.9			16.8			13.7			11.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.4	15.6		20.2	4.9	23.2		20.2				
Change Period (Y+Rc), s	5.4	5.1		4.9	4.4	* 5.4		4.9				
Max Green Setting (Gmax), s	40.0	50.0		40.0	25.0	* 50		40.0				
Max Q Clear Time (g_c+I1), s	6.4	7.4		3.4	2.2	5.3		11.2				
Green Ext Time (p_c), s	0.6	0.8		0.3	0.0	0.8		4.1				

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	14	15	5	6	16	11	593	22	39	329	15
Future Vol, veh/h	8	14	15	5	6	16	11	593	22	39	329	15
Conflicting Peds, #/hr	20	0	19	14	0	15	19	0	14	15	0	19
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	14	15	5	6	16	11	605	22	40	336	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	791	1107	214	927	1103	349	370	0	0	642	0	0
Stage 1	443	443	-	653	653	-	-	-	-	-	-	-
Stage 2	348	664	-	274	450	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	280	209	791	223	210	647	1185	-	-	939	-	-
Stage 1	564	574	-	423	462	-	-	-	-	-	-	-
Stage 2	641	456	-	709	570	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	243	189	763	189	189	626	1164	-	-	926	-	-
Mov Cap-2 Maneuver	243	189	-	189	189	-	-	-	-	-	-	-
Stage 1	545	533	-	411	449	-	-	-	-	-	-	-
Stage 2	595	443	-	628	530	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.2	17.2	0.2	1.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	292	322	926	-	-
HCM Lane V/C Ratio	0.01	-	-	0.129	0.086	0.043	-	-
HCM Control Delay (s)	8.1	0.1	-	19.2	17.2	9.1	0.2	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.1	-	-

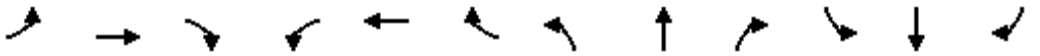
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	8	39	18	14	40	14	579	5	3	332	12
Future Vol, veh/h	11	8	39	18	14	40	14	579	5	3	332	12
Conflicting Peds, #/hr	18	0	12	6	0	14	12	0	6	12	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	8	41	19	15	42	15	603	5	3	346	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	734	1027	210	843	1031	334	377	0	0	620	0	0
Stage 1	377	377	-	648	648	-	-	-	-	-	-	-
Stage 2	357	650	-	195	383	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	308	233	796	257	232	662	1178	-	-	956	-	-
Stage 1	616	614	-	425	464	-	-	-	-	-	-	-
Stage 2	633	463	-	788	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	259	221	773	227	220	643	1158	-	-	945	-	-
Mov Cap-2 Maneuver	259	221	-	227	220	-	-	-	-	-	-	-
Stage 1	593	601	-	412	450	-	-	-	-	-	-	-
Stage 2	552	449	-	725	597	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	18	0.3	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1158	-	-	449	351	945	-	-
HCM Lane V/C Ratio	0.013	-	-	0.135	0.214	0.003	-	-
HCM Control Delay (s)	8.1	0.1	-	14.3	18	8.8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.8	0	-	-



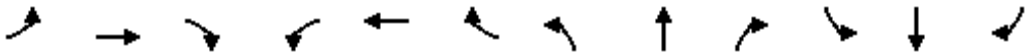
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	159	21	12	148	305	36	376	17	175	212	44
Future Volume (veh/h)	21	159	21	12	148	305	36	376	17	175	212	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	161	19	12	149	172	36	380	16	177	214	32
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	319	35	87	378	677	500	500	21	393	679	99
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.28	0.28	0.28	0.22	0.22	0.22
Sat Flow, veh/h	91	1505	167	54	1785	1545	1781	1778	75	1781	3077	451
Grp Volume(v), veh/h	201	0	0	161	0	172	36	0	396	177	122	124
Grp Sat Flow(s),veh/h/ln	1763	0	0	1839	0	1545	1781	0	1853	1781	1777	1750
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	3.6	0.8	0.0	10.0	4.4	2.9	3.1
Cycle Q Clear(g_c), s	5.0	0.0	0.0	3.8	0.0	3.6	0.8	0.0	10.0	4.4	2.9	3.1
Prop In Lane	0.10		0.09	0.07		1.00	1.00		0.04	1.00		0.26
Lane Grp Cap(c), veh/h	451	0	0	465	0	677	500	0	521	393	392	386
V/C Ratio(X)	0.45	0.00	0.00	0.35	0.00	0.25	0.07	0.00	0.76	0.45	0.31	0.32
Avail Cap(c_a), veh/h	1414	0	0	1483	0	1554	2083	0	2167	2083	2078	2047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	0.0	17.4	0.0	9.3	13.5	0.0	16.9	17.3	16.7	16.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.1	0.0	0.0	1.4	0.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	1.5	0.0	1.7	0.3	0.0	3.9	1.7	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	0.0	17.6	0.0	9.4	13.6	0.0	18.3	18.2	17.2	17.3
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		201			333			432			423	
Approach Delay, s/veh		18.2			13.4			17.9			17.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.3		15.8		16.2		15.8				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		12.0		7.0		6.4		5.8				
Green Ext Time (p_c), s		2.0		0.9		2.3		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/19/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	118	7	459	265	35	19	53	232	28	79	15
Future Volume (veh/h)	13	118	7	459	265	35	19	53	232	28	79	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	137	1	534	308	0	22	62	270	33	92	10
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	470	397	751	881		153	222	579	151	186	18
Arrive On Green	0.02	0.25	0.25	0.22	0.47	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	1870	1579	3456	1870	1585	272	1494	1579	266	1250	121
Grp Volume(v), veh/h	15	137	1	534	308	0	84	0	270	135	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1579	1728	1870	1585	1766	0	1579	1638	0	0
Q Serve(g_s), s	0.3	2.4	0.0	5.8	4.2	0.0	0.0	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.3	2.4	0.0	5.8	4.2	0.0	1.6	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.26		1.00	0.24		0.07
Lane Grp Cap(c), veh/h	27	470	397	751	881		375	0	579	354	0	0
V/C Ratio(X)	0.55	0.29	0.00	0.71	0.35		0.22	0.00	0.47	0.38	0.00	0.00
Avail Cap(c_a), veh/h	1107	2324	1962	3435	2324		1789	0	1914	1665	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.7	12.2	11.3	14.6	6.7	0.0	15.3	0.0	9.8	15.8	0.0	0.0
Incr Delay (d2), s/veh	6.2	0.1	0.0	0.5	0.2	0.0	0.3	0.0	0.6	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.8	0.0	1.7	1.0	0.0	0.6	0.0	1.5	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	12.3	11.3	15.0	6.9	0.0	15.6	0.0	10.3	16.0	0.0	0.0
LnGrp LOS	C	B	B	B	A		B	A	B	B	A	A
Approach Vol, veh/h		153			842	A		354			135	
Approach Delay, s/veh		13.6			12.1			11.6			16.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	15.2		10.9	5.0	24.3		10.9				
Change Period (Y+Rc), s	5.4	5.1		4.9	4.4	* 5.4		4.9				
Max Green Setting (Gmax), s	40.0	50.0		40.0	25.0	* 50		40.0				
Max Q Clear Time (g_c+I1), s	7.8	4.4		4.9	2.3	6.2		3.6				
Green Ext Time (p_c), s	1.0	0.4		0.5	0.0	1.5		1.5				

Intersection Summary		
HCM 6th Ctrl Delay		12.5
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	6	13	17	1	2	3	8	271	6	28	345	12
Future Vol, veh/h	6	13	17	1	2	3	8	271	6	28	345	12
Conflicting Peds, #/hr	2	0	4	11	0	9	4	0	11	9	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	14	18	1	2	3	8	282	6	29	359	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	595	743	201	568	746	164	376	0	0	299	0	0
Stage 1	428	428	-	312	312	-	-	-	-	-	-	-
Stage 2	167	315	-	256	434	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	388	342	806	406	340	852	1179	-	-	1259	-	-
Stage 1	575	583	-	673	656	-	-	-	-	-	-	-
Stage 2	818	654	-	726	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	369	325	795	366	323	836	1175	-	-	1246	-	-
Mov Cap-2 Maneuver	369	325	-	366	323	-	-	-	-	-	-	-
Stage 1	568	564	-	661	644	-	-	-	-	-	-	-
Stage 2	799	642	-	666	560	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	12.6	0.2	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1175	-	-	464	480	1246	-	-
HCM Lane V/C Ratio	0.007	-	-	0.081	0.013	0.023	-	-
HCM Control Delay (s)	8.1	0	-	13.4	12.6	8	0.1	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.1	-	-

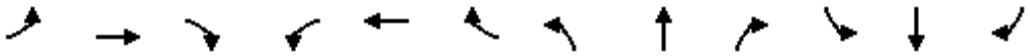
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	28	5	6	9	9	279	2	3	343	8
Future Vol, veh/h	5	2	28	5	6	9	9	279	2	3	343	8
Conflicting Peds, #/hr	5	0	4	8	0	9	4	0	8	9	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	2	32	6	7	10	10	321	2	3	394	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	603	762	215	563	765	180	408	0	0	332	0	0
Stage 1	410	410	-	351	351	-	-	-	-	-	-	-
Stage 2	193	352	-	212	414	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	383	333	790	409	332	832	1147	-	-	1224	-	-
Stage 1	589	594	-	639	631	-	-	-	-	-	-	-
Stage 2	790	630	-	770	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	363	324	780	380	323	818	1142	-	-	1214	-	-
Mov Cap-2 Maneuver	363	324	-	380	323	-	-	-	-	-	-	-
Stage 1	580	589	-	627	618	-	-	-	-	-	-	-
Stage 2	756	617	-	728	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	13.1	0.3	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	627	468	1214	-	-
HCM Lane V/C Ratio	0.009	-	-	0.064	0.049	0.003	-	-
HCM Control Delay (s)	8.2	0	-	11.1	13.1	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-



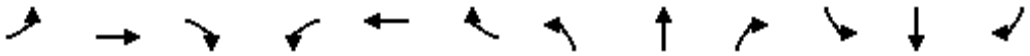
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	151	19	16	77	129	14	198	21	206	221	25
Future Volume (veh/h)	11	151	19	16	77	129	14	198	21	206	221	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	172	20	18	88	63	16	225	22	234	251	22
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	303	34	125	316	679	402	377	37	429	794	69
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.23	0.23	0.23	0.24	0.24	0.24
Sat Flow, veh/h	49	1582	177	144	1647	1547	1781	1671	163	1781	3297	286
Grp Volume(v), veh/h	204	0	0	106	0	63	16	0	247	234	134	139
Grp Sat Flow(s),veh/h/ln	1808	0	0	1791	0	1547	1781	0	1835	1781	1777	1807
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.0	5.2	4.9	2.7	2.7
Cycle Q Clear(g_c), s	4.4	0.0	0.0	2.1	0.0	1.0	0.3	0.0	5.2	4.9	2.7	2.7
Prop In Lane	0.06		0.10	0.17		1.00	1.00		0.09	1.00		0.16
Lane Grp Cap(c), veh/h	435	0	0	441	0	679	402	0	414	429	428	435
V/C Ratio(X)	0.47	0.00	0.00	0.24	0.00	0.09	0.04	0.00	0.60	0.55	0.31	0.32
Avail Cap(c_a), veh/h	1747	0	0	1697	0	1819	2483	0	2557	2483	2476	2518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	0.0	0.0	14.9	0.0	7.2	13.0	0.0	14.9	14.3	13.4	13.4
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.8	1.2	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	0.8	0.0	0.5	0.1	0.0	1.9	1.8	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	0.0	15.0	0.0	7.2	13.0	0.0	15.8	15.5	13.9	13.9
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		204			169			263			507	
Approach Delay, s/veh		16.1			12.1			15.6			14.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		13.2		15.3		13.2				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		7.2		6.4		6.9		4.1				
Green Ext Time (p_c), s		1.2		0.8		2.7		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/19/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	222	12	327	172	39	42	174	577	13	53	20
Future Volume (veh/h)	9	222	12	327	172	39	42	174	577	13	53	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.97		0.98	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	234	2	344	181	0	44	183	607	14	56	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	17	413	345	515	701		152	504	729	132	418	46
Arrive On Green	0.01	0.22	0.22	0.15	0.38	0.00	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	1870	1561	3456	1870	1585	195	1591	1555	136	1317	145
Grp Volume(v), veh/h	9	234	2	344	181	0	227	0	607	77	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1561	1728	1870	1585	1785	0	1555	1598	0	0
Q Serve(g_s), s	0.2	5.3	0.0	4.5	3.2	0.0	0.0	0.0	8.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	5.3	0.0	4.5	3.2	0.0	4.5	0.0	8.9	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.19		1.00	0.18		0.09
Lane Grp Cap(c), veh/h	17	413	345	515	701		656	0	729	596	0	0
V/C Ratio(X)	0.54	0.57	0.01	0.67	0.26		0.35	0.00	0.83	0.13	0.00	0.00
Avail Cap(c_a), veh/h	936	1966	1641	2978	1966		1560	0	1544	1328	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.5	16.5	14.5	19.1	10.3	0.0	12.6	0.0	11.0	11.6	0.0	0.0
Incr Delay (d2), s/veh	9.5	0.5	0.0	0.6	0.2	0.0	0.3	0.0	2.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.9	0.0	1.5	1.0	0.0	1.6	0.0	4.6	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	17.0	14.5	19.7	10.4	0.0	12.9	0.0	13.6	11.6	0.0	0.0
LnGrp LOS	C	B	B	B	B		B	A	B	B	A	A
Approach Vol, veh/h		245			525	A		834			77	
Approach Delay, s/veh		17.5			16.5			13.4			11.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	15.6		20.0	4.8	22.7		20.0				
Change Period (Y+Rc), s	4.9	* 5.1		4.9	4.4	4.9		4.9				
Max Green Setting (Gmax), s	41.0	* 50		40.0	25.0	50.0		40.0				
Max Q Clear Time (g_c+I1), s	6.5	7.3		3.4	2.2	5.2		10.9				
Green Ext Time (p_c), s	0.6	0.8		0.3	0.0	0.8		4.1				

Intersection Summary		
HCM 6th Ctrl Delay		14.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	8	23	15	5	6	16	11	596	24	61	329	15
Future Vol, veh/h	8	23	15	5	6	16	11	596	24	61	329	15
Conflicting Peds, #/hr	20	0	19	14	0	15	19	0	14	15	0	19
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	23	15	5	6	16	11	608	24	62	336	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	836	1156	214	980	1151	351	370	0	0	647	0	0
Stage 1	487	487	-	657	657	-	-	-	-	-	-	-
Stage 2	349	669	-	323	494	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	260	195	791	204	197	645	1185	-	-	934	-	-
Stage 1	531	549	-	420	460	-	-	-	-	-	-	-
Stage 2	640	454	-	663	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	220	170	763	160	172	624	1164	-	-	921	-	-
Mov Cap-2 Maneuver	220	170	-	160	172	-	-	-	-	-	-	-
Stage 1	513	494	-	408	447	-	-	-	-	-	-	-
Stage 2	594	441	-	557	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.6	18.5	0.2	1.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	240	294	921	-	-
HCM Lane V/C Ratio	0.01	-	-	0.196	0.094	0.068	-	-
HCM Control Delay (s)	8.1	0.1	-	23.6	18.5	9.2	0.3	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.3	0.2	-	-

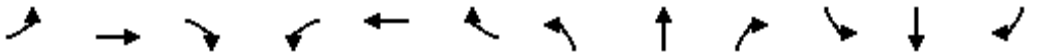
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	8	39	19	21	43	14	581	5	3	332	12
Future Vol, veh/h	11	8	39	19	21	43	14	581	5	3	332	12
Conflicting Peds, #/hr	18	0	12	6	0	14	12	0	6	12	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	8	41	20	22	45	15	605	5	3	346	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	739	1029	210	845	1033	335	377	0	0	622	0	0
Stage 1	377	377	-	650	650	-	-	-	-	-	-	-
Stage 2	362	652	-	195	383	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	306	232	796	256	231	661	1178	-	-	955	-	-
Stage 1	616	614	-	424	463	-	-	-	-	-	-	-
Stage 2	629	462	-	788	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	249	220	773	226	219	642	1158	-	-	944	-	-
Mov Cap-2 Maneuver	249	220	-	226	219	-	-	-	-	-	-	-
Stage 1	593	601	-	411	449	-	-	-	-	-	-	-
Stage 2	536	448	-	725	597	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	19.4	0.3	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1158	-	-	443	336	944	-	-
HCM Lane V/C Ratio	0.013	-	-	0.136	0.257	0.003	-	-
HCM Control Delay (s)	8.1	0.1	-	14.4	19.4	8.8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	159	21	12	148	307	36	376	17	176	212	44
Future Volume (veh/h)	21	159	21	12	148	307	36	376	17	176	212	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	161	19	12	149	174	36	380	16	178	214	32
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	319	35	87	378	677	500	500	21	393	679	99
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.28	0.28	0.28	0.22	0.22	0.22
Sat Flow, veh/h	91	1505	167	54	1785	1545	1781	1778	75	1781	3077	451
Grp Volume(v), veh/h	201	0	0	161	0	174	36	0	396	178	122	124
Grp Sat Flow(s),veh/h/ln	1763	0	0	1839	0	1545	1781	0	1853	1781	1777	1750
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	3.7	0.8	0.0	10.0	4.4	2.9	3.1
Cycle Q Clear(g_c), s	5.0	0.0	0.0	3.8	0.0	3.7	0.8	0.0	10.0	4.4	2.9	3.1
Prop In Lane	0.10		0.09	0.07		1.00	1.00		0.04	1.00		0.26
Lane Grp Cap(c), veh/h	451	0	0	465	0	677	500	0	521	393	392	386
V/C Ratio(X)	0.45	0.00	0.00	0.35	0.00	0.26	0.07	0.00	0.76	0.45	0.31	0.32
Avail Cap(c_a), veh/h	1414	0	0	1483	0	1554	2083	0	2167	2083	2078	2047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	0.0	17.4	0.0	9.3	13.5	0.0	16.9	17.3	16.7	16.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.1	0.0	0.0	1.4	0.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	1.5	0.0	1.7	0.3	0.0	3.9	1.7	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	0.0	17.6	0.0	9.4	13.6	0.0	18.3	18.2	17.2	17.3
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		201			335			432			424	
Approach Delay, s/veh		18.2			13.3			17.9			17.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.3		15.8		16.2		15.8				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		12.0		7.0		6.4		5.8				
Green Ext Time (p_c), s		2.0		0.9		2.3		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/04/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	120	10	470	270	40	20	60	252	30	80	20
Future Volume (veh/h)	18	120	10	470	270	40	20	60	252	30	80	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	126	3	495	284	0	21	63	265	32	84	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	477	403	712	860		152	227	564	153	181	25
Arrive On Green	0.02	0.26	0.26	0.21	0.46	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	1870	1579	3456	1870	1585	255	1511	1579	266	1201	164
Grp Volume(v), veh/h	19	126	3	495	284	0	84	0	265	129	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1579	1728	1870	1585	1766	0	1579	1632	0	0
Q Serve(g_s), s	0.4	2.1	0.1	5.3	3.8	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.4	2.1	0.1	5.3	3.8	0.0	1.6	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.25		1.00	0.25		0.10
Lane Grp Cap(c), veh/h	34	477	403	712	860		379	0	564	359	0	0
V/C Ratio(X)	0.56	0.26	0.01	0.69	0.33		0.22	0.00	0.47	0.36	0.00	0.00
Avail Cap(c_a), veh/h	1123	2358	1991	3485	2358		1823	0	1919	1682	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.3	11.8	11.0	14.6	6.8	0.0	15.0	0.0	9.9	15.4	0.0	0.0
Incr Delay (d2), s/veh	5.3	0.1	0.0	0.5	0.2	0.0	0.3	0.0	0.6	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	0.0	1.6	0.9	0.0	0.6	0.0	1.4	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	11.9	11.0	15.0	7.0	0.0	15.3	0.0	10.5	15.6	0.0	0.0
LnGrp LOS	C	B	B	B	A		B	A	B	B	A	A
Approach Vol, veh/h		148			779	A		349			129	
Approach Delay, s/veh		13.5			12.1			11.6			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	15.2		10.9	5.2	23.6		10.9				
Change Period (Y+Rc), s	5.4	5.1		4.9	4.4	* 5.4		4.9				
Max Green Setting (Gmax), s	40.0	50.0		40.0	25.0	* 50		40.0				
Max Q Clear Time (g_c+I1), s	7.3	4.1		4.7	2.4	5.8		3.6				
Green Ext Time (p_c), s	0.9	0.4		0.5	0.0	1.4		1.4				

Intersection Summary		
HCM 6th Ctrl Delay		12.5
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	10	20	10	10	10	10	280	10	20	350	20
Future Vol, veh/h	10	10	20	10	10	10	10	280	10	20	350	20
Conflicting Peds, #/hr	2	0	4	11	0	9	4	0	11	9	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	10	21	10	10	10	10	292	10	21	365	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	602	755	208	569	760	171	390	0	0	313	0	0
Stage 1	422	422	-	328	328	-	-	-	-	-	-	-
Stage 2	180	333	-	241	432	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	383	336	798	405	334	843	1165	-	-	1244	-	-
Stage 1	580	587	-	659	646	-	-	-	-	-	-	-
Stage 2	804	642	-	741	581	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	355	321	787	367	319	827	1161	-	-	1231	-	-
Mov Cap-2 Maneuver	355	321	-	367	319	-	-	-	-	-	-	-
Stage 1	572	572	-	646	633	-	-	-	-	-	-	-
Stage 2	766	629	-	685	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	14.2	0.3	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1161	-	-	472	424	1231	-	-
HCM Lane V/C Ratio	0.009	-	-	0.088	0.074	0.017	-	-
HCM Control Delay (s)	8.1	0	-	13.4	14.2	8	0.1	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.1	-	-

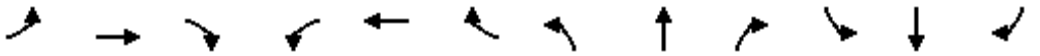
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	10	30	10	10	10	10	290	10	10	350	10
Future Vol, veh/h	10	10	30	10	10	10	10	290	10	10	350	10
Conflicting Peds, #/hr	5	0	4	8	0	9	4	0	8	9	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	11	32	11	11	11	11	305	11	11	368	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	590	748	203	562	748	176	384	0	0	325	0	0
Stage 1	401	401	-	342	342	-	-	-	-	-	-	-
Stage 2	189	347	-	220	406	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	391	339	804	410	339	837	1171	-	-	1231	-	-
Stage 1	597	599	-	646	637	-	-	-	-	-	-	-
Stage 2	795	633	-	762	596	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	365	327	794	371	327	823	1165	-	-	1220	-	-
Mov Cap-2 Maneuver	365	327	-	371	327	-	-	-	-	-	-	-
Stage 1	587	589	-	634	624	-	-	-	-	-	-	-
Stage 2	757	620	-	705	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	14	0.3	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1165	-	-	522	431	1220	-	-
HCM Lane V/C Ratio	0.009	-	-	0.101	0.073	0.009	-	-
HCM Control Delay (s)	8.1	0	-	12.7	14	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	160	20	20	80	130	20	200	30	210	230	30
Future Volume (veh/h)	20	160	20	20	80	130	20	200	30	210	230	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	168	19	21	84	63	21	211	28	221	242	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	297	32	134	312	682	401	362	48	428	779	80
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.22	0.22	0.22	0.24	0.24	0.24
Sat Flow, veh/h	95	1528	163	176	1604	1547	1781	1610	214	1781	3242	331
Grp Volume(v), veh/h	208	0	0	105	0	63	21	0	239	221	131	136
Grp Sat Flow(s),veh/h/ln	1787	0	0	1780	0	1547	1781	0	1824	1781	1777	1796
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	1.0	0.4	0.0	5.0	4.6	2.6	2.7
Cycle Q Clear(g_c), s	4.5	0.0	0.0	2.1	0.0	1.0	0.4	0.0	5.0	4.6	2.6	2.7
Prop In Lane	0.10		0.09	0.20		1.00	1.00		0.12	1.00		0.18
Lane Grp Cap(c), veh/h	439	0	0	446	0	682	401	0	410	428	427	431
V/C Ratio(X)	0.47	0.00	0.00	0.24	0.00	0.09	0.05	0.00	0.58	0.52	0.31	0.31
Avail Cap(c_a), veh/h	1717	0	0	1674	0	1814	2475	0	2535	2475	2469	2496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	0.0	0.0	14.8	0.0	7.2	13.1	0.0	14.9	14.2	13.5	13.5
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.8	1.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.8	0.0	0.5	0.1	0.0	1.9	1.7	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	0.0	14.9	0.0	7.2	13.2	0.0	15.7	15.3	13.9	13.9
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		208			168			260			488	
Approach Delay, s/veh		16.1			12.0			15.5			14.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		13.3		15.3		13.3				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		7.0		6.5		6.6		4.1				
Green Ext Time (p_c), s		1.2		0.9		2.6		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/04/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	230	20	330	180	40	50	180	594	20	60	30
Future Volume (veh/h)	19	230	20	330	180	40	50	180	594	20	60	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.97		0.98	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	242	3	347	189	0	53	189	625	21	63	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	398	332	512	666		165	501	745	144	364	75
Arrive On Green	0.02	0.21	0.21	0.15	0.36	0.00	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1781	1870	1560	3456	1870	1585	234	1530	1556	170	1110	228
Grp Volume(v), veh/h	20	242	3	347	189	0	242	0	625	99	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1560	1728	1870	1585	1764	0	1556	1508	0	0
Q Serve(g_s), s	0.6	5.8	0.1	4.7	3.6	0.0	0.0	0.0	9.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	5.8	0.1	4.7	3.6	0.0	4.9	0.0	9.8	1.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.22		1.00	0.21		0.15
Lane Grp Cap(c), veh/h	34	398	332	512	666		667	0	745	582	0	0
V/C Ratio(X)	0.59	0.61	0.01	0.68	0.28		0.36	0.00	0.84	0.17	0.00	0.00
Avail Cap(c_a), veh/h	901	1891	1578	2796	1891		1486	0	1494	1217	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.1	17.6	15.4	19.9	11.4	0.0	12.8	0.0	11.3	11.8	0.0	0.0
Incr Delay (d2), s/veh	6.0	0.6	0.0	0.6	0.2	0.0	0.3	0.0	2.6	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.1	0.0	1.7	1.2	0.0	1.8	0.0	5.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	18.2	15.4	20.5	11.6	0.0	13.2	0.0	13.9	11.9	0.0	0.0
LnGrp LOS	C	B	B	C	B		B	A	B	B	A	A
Approach Vol, veh/h		265			536	A		867			99	
Approach Delay, s/veh		19.0			17.4			13.7			11.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.7	15.6		21.1	5.3	23.0		21.1				
Change Period (Y+Rc), s	5.4	5.1		4.9	4.4	* 5.4		4.9				
Max Green Setting (Gmax), s	40.0	50.0		40.0	25.0	* 50		40.0				
Max Q Clear Time (g_c+I1), s	6.7	7.8		3.9	2.6	5.6		11.8				
Green Ext Time (p_c), s	0.6	0.8		0.5	0.0	0.9		4.4				

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	20	20	10	10	20	20	600	30	40	340	20
Future Vol, veh/h	10	20	20	10	10	20	20	600	30	40	340	20
Conflicting Peds, #/hr	20	0	19	14	0	15	19	0	14	15	0	19
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	20	20	10	10	20	20	612	31	41	347	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	829	1156	222	968	1151	357	386	0	0	658	0	0
Stage 1	458	458	-	683	683	-	-	-	-	-	-	-
Stage 2	371	698	-	285	468	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	263	195	782	208	197	639	1169	-	-	926	-	-
Stage 1	552	565	-	405	447	-	-	-	-	-	-	-
Stage 2	622	440	-	698	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	219	173	754	167	175	618	1148	-	-	913	-	-
Mov Cap-2 Maneuver	219	173	-	167	175	-	-	-	-	-	-	-
Stage 1	527	523	-	388	429	-	-	-	-	-	-	-
Stage 2	560	422	-	604	519	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.7	20.8	0.3	1.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1148	-	-	266	268	913	-	-
HCM Lane V/C Ratio	0.018	-	-	0.192	0.152	0.045	-	-
HCM Control Delay (s)	8.2	0.1	-	21.7	20.8	9.1	0.2	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.5	0.1	-	-

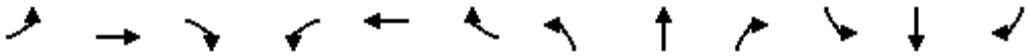
Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	10	40	20	20	50	20	590	10	10	340	20
Future Vol, veh/h	20	10	40	20	20	50	20	590	10	10	340	20
Conflicting Peds, #/hr	18	0	12	6	0	14	12	0	6	12	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	10	42	21	21	52	21	615	10	10	354	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	781	1082	218	888	1087	343	393	0	0	637	0	0
Stage 1	403	403	-	674	674	-	-	-	-	-	-	-
Stage 2	378	679	-	214	413	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	285	216	786	238	215	653	1162	-	-	943	-	-
Stage 1	595	598	-	410	452	-	-	-	-	-	-	-
Stage 2	616	449	-	768	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	201	764	204	200	634	1142	-	-	932	-	-
Mov Cap-2 Maneuver	225	201	-	204	200	-	-	-	-	-	-	-
Stage 1	568	579	-	394	434	-	-	-	-	-	-	-
Stage 2	514	431	-	695	574	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	20.5	0.4	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	366	325	932	-	-
HCM Lane V/C Ratio	0.018	-	-	0.199	0.288	0.011	-	-
HCM Control Delay (s)	8.2	0.1	-	17.3	20.5	8.9	0.1	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	1.2	0	-	-



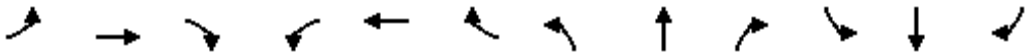
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	170	30	20	150	310	40	380	20	180	220	50
Future Volume (veh/h)	30	170	30	20	150	310	40	380	20	180	220	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	172	27	20	152	182	40	384	19	182	222	38
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	313	46	98	384	687	505	500	25	383	647	108
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.28	0.28	0.28	0.22	0.22	0.22
Sat Flow, veh/h	124	1400	204	97	1715	1547	1781	1763	87	1781	3009	503
Grp Volume(v), veh/h	229	0	0	172	0	182	40	0	403	182	129	131
Grp Sat Flow(s),veh/h/ln	1728	0	0	1812	0	1547	1781	0	1851	1781	1777	1736
Q Serve(g_s), s	0.9	0.0	0.0	0.0	0.0	4.0	0.9	0.0	10.6	4.7	3.2	3.4
Cycle Q Clear(g_c), s	6.0	0.0	0.0	4.2	0.0	4.0	0.9	0.0	10.6	4.7	3.2	3.4
Prop In Lane	0.13		0.12	0.12		1.00	1.00		0.05	1.00		0.29
Lane Grp Cap(c), veh/h	464	0	0	481	0	687	505	0	524	383	382	373
V/C Ratio(X)	0.49	0.00	0.00	0.36	0.00	0.26	0.08	0.00	0.77	0.48	0.34	0.35
Avail Cap(c_a), veh/h	1344	0	0	1412	0	1511	2020	0	2099	2020	2015	1969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	0.0	17.5	0.0	9.4	13.9	0.0	17.4	18.2	17.6	17.6
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.1	0.0	0.0	1.5	1.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	1.7	0.0	1.8	0.3	0.0	4.2	1.9	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	0.0	17.7	0.0	9.5	13.9	0.0	18.9	19.1	18.1	18.2
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		229			354			443			442	
Approach Delay, s/veh		18.5			13.5			18.4			18.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.9		16.7		16.3		16.7				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		12.6		8.0		6.7		6.2				
Green Ext Time (p_c), s		2.1		1.0		2.4		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			17.3									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/28/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	120	10	470	270	40	20	60	254	30	80	20
Future Volume (veh/h)	25	120	10	470	270	40	20	60	254	30	80	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	126	3	495	284	0	21	63	267	32	84	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	477	403	712	849		152	227	564	153	181	25
Arrive On Green	0.03	0.26	0.26	0.21	0.45	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	1870	1579	3456	1870	1585	255	1511	1579	266	1201	164
Grp Volume(v), veh/h	26	126	3	495	284	0	84	0	267	129	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1579	1728	1870	1585	1766	0	1579	1631	0	0
Q Serve(g_s), s	0.6	2.1	0.1	5.3	3.9	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.6	2.1	0.1	5.3	3.9	0.0	1.6	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.25		1.00	0.25		0.10
Lane Grp Cap(c), veh/h	45	477	403	712	849		379	0	564	359	0	0
V/C Ratio(X)	0.58	0.26	0.01	0.69	0.33		0.22	0.00	0.47	0.36	0.00	0.00
Avail Cap(c_a), veh/h	1123	2358	1991	3485	2358		1823	0	1919	1681	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.1	11.8	11.0	14.6	7.0	0.0	15.0	0.0	9.9	15.4	0.0	0.0
Incr Delay (d2), s/veh	4.4	0.1	0.0	0.5	0.2	0.0	0.3	0.0	0.6	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	0.0	1.6	0.9	0.0	0.6	0.0	1.4	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	11.9	11.0	15.0	7.2	0.0	15.3	0.0	10.5	15.6	0.0	0.0
LnGrp LOS	C	B	B	B	A		B	A	B	B	A	A
Approach Vol, veh/h		155			779	A		351			129	
Approach Delay, s/veh		13.8			12.2			11.6			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	15.2		10.9	5.4	23.4		10.9				
Change Period (Y+Rc), s	5.4	5.1		4.9	4.4	* 5.4		4.9				
Max Green Setting (Gmax), s	40.0	50.0		40.0	25.0	* 50		40.0				
Max Q Clear Time (g_c+I1), s	7.3	4.1		4.7	2.6	5.9		3.6				
Green Ext Time (p_c), s	0.9	0.4		0.5	0.0	1.4		1.5				

Intersection Summary		
HCM 6th Ctrl Delay	12.5	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	12	20	10	10	10	10	282	11	47	342	20
Future Vol, veh/h	10	12	20	10	10	10	10	282	11	47	342	20
Conflicting Peds, #/hr	2	0	4	11	0	9	4	0	11	9	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	13	21	10	10	10	10	294	11	49	356	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	650	805	204	625	810	173	381	0	0	316	0	0
Stage 1	469	469	-	331	331	-	-	-	-	-	-	-
Stage 2	181	336	-	294	479	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	354	315	803	369	312	840	1174	-	-	1241	-	-
Stage 1	544	559	-	656	644	-	-	-	-	-	-	-
Stage 2	803	640	-	690	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	320	292	792	325	289	824	1170	-	-	1228	-	-
Mov Cap-2 Maneuver	320	292	-	325	289	-	-	-	-	-	-	-
Stage 1	536	528	-	643	631	-	-	-	-	-	-	-
Stage 2	765	627	-	616	523	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	15.1	0.3	1.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1170	-	-	430	387	1228	-	-
HCM Lane V/C Ratio	0.009	-	-	0.102	0.081	0.04	-	-
HCM Control Delay (s)	8.1	0	-	14.3	15.1	8.1	0.2	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-	-

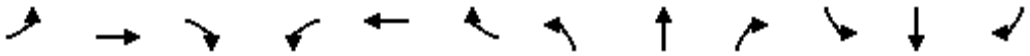
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	10	30	10	14	12	10	291	10	10	350	10
Future Vol, veh/h	10	10	30	10	14	12	10	291	10	10	350	10
Conflicting Peds, #/hr	5	0	4	8	0	9	4	0	8	9	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	11	32	11	15	13	11	306	11	11	368	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	593	749	203	563	749	177	384	0	0	326	0	0
Stage 1	401	401	-	343	343	-	-	-	-	-	-	-
Stage 2	192	348	-	220	406	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	389	339	804	409	339	835	1171	-	-	1230	-	-
Stage 1	597	599	-	646	636	-	-	-	-	-	-	-
Stage 2	791	633	-	762	596	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	359	327	794	371	327	821	1165	-	-	1219	-	-
Mov Cap-2 Maneuver	359	327	-	371	327	-	-	-	-	-	-	-
Stage 1	587	589	-	634	623	-	-	-	-	-	-	-
Stage 2	746	620	-	705	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	14.3	0.3	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1165	-	-	520	427	1219	-	-
HCM Lane V/C Ratio	0.009	-	-	0.101	0.089	0.009	-	-
HCM Control Delay (s)	8.1	0	-	12.7	14.3	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	160	20	20	80	131	20	200	30	210	230	30
Future Volume (veh/h)	20	160	20	20	80	131	20	200	30	210	230	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	168	19	21	84	64	21	211	28	221	242	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	297	32	134	312	682	401	362	48	428	779	80
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.22	0.22	0.22	0.24	0.24	0.24
Sat Flow, veh/h	95	1528	163	176	1604	1547	1781	1610	214	1781	3242	331
Grp Volume(v), veh/h	208	0	0	105	0	64	21	0	239	221	131	136
Grp Sat Flow(s),veh/h/ln	1787	0	0	1780	0	1547	1781	0	1824	1781	1777	1796
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	1.1	0.4	0.0	5.0	4.6	2.6	2.7
Cycle Q Clear(g_c), s	4.5	0.0	0.0	2.1	0.0	1.1	0.4	0.0	5.0	4.6	2.6	2.7
Prop In Lane	0.10		0.09	0.20		1.00	1.00		0.12	1.00		0.18
Lane Grp Cap(c), veh/h	439	0	0	446	0	682	401	0	410	428	427	431
V/C Ratio(X)	0.47	0.00	0.00	0.24	0.00	0.09	0.05	0.00	0.58	0.52	0.31	0.31
Avail Cap(c_a), veh/h	1717	0	0	1674	0	1814	2475	0	2535	2475	2469	2496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	0.0	0.0	14.8	0.0	7.2	13.1	0.0	14.9	14.2	13.5	13.5
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.8	1.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.8	0.0	0.5	0.1	0.0	1.9	1.7	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	0.0	14.9	0.0	7.2	13.2	0.0	15.7	15.3	13.9	13.9
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		208			169			260			488	
Approach Delay, s/veh		16.1			12.0			15.5			14.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		13.3		15.3		13.3				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		7.0		6.5		6.6		4.1				
Green Ext Time (p_c), s		1.2		0.9		2.6		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Scott St & N Harbor Dr

03/28/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	230	20	340	180	40	50	180	597	20	60	30
Future Volume (veh/h)	19	230	20	340	180	40	50	180	597	20	60	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.97		0.98	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	242	3	358	189	0	53	189	628	21	63	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	35	397	331	523	670		165	499	747	143	362	74
Arrive On Green	0.02	0.21	0.21	0.15	0.36	0.00	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1781	1870	1560	3456	1870	1585	234	1530	1556	170	1109	228
Grp Volume(v), veh/h	20	242	3	358	189	0	242	0	628	99	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1560	1728	1870	1585	1764	0	1556	1507	0	0
Q Serve(g_s), s	0.6	5.8	0.1	4.9	3.6	0.0	0.0	0.0	9.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	5.8	0.1	4.9	3.6	0.0	5.0	0.0	9.8	1.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.22		1.00	0.21		0.15
Lane Grp Cap(c), veh/h	35	397	331	523	670		664	0	747	579	0	0
V/C Ratio(X)	0.58	0.61	0.01	0.68	0.28		0.36	0.00	0.84	0.17	0.00	0.00
Avail Cap(c_a), veh/h	898	1885	1573	2787	1885		1481	0	1495	1212	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.1	17.7	15.4	19.9	11.4	0.0	12.9	0.0	11.3	11.9	0.0	0.0
Incr Delay (d2), s/veh	5.6	0.6	0.0	0.6	0.2	0.0	0.3	0.0	2.6	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.1	0.0	1.7	1.2	0.0	1.8	0.0	5.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	18.3	15.4	20.5	11.5	0.0	13.3	0.0	13.9	12.0	0.0	0.0
LnGrp LOS	C	B	B	C	B		B	A	B	B	A	A
Approach Vol, veh/h		265			547	A		870			99	
Approach Delay, s/veh		19.1			17.4			13.7			12.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.9	15.6		21.1	5.4	23.2		21.1				
Change Period (Y+Rc), s	5.4	5.1		4.9	4.4	* 5.4		4.9				
Max Green Setting (Gmax), s	40.0	50.0		40.0	25.0	* 50		40.0				
Max Q Clear Time (g_c+I1), s	6.9	7.8		3.9	2.6	5.6		11.8				
Green Ext Time (p_c), s	0.6	0.8		0.5	0.0	0.9		4.4				

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	25	20	10	10	20	20	603	32	74	332	20
Future Vol, veh/h	10	25	20	10	10	20	20	603	32	74	332	20
Conflicting Peds, #/hr	20	0	19	14	0	15	19	0	14	15	0	19
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	26	20	10	10	20	20	615	33	76	339	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	893	1223	218	1041	1217	359	378	0	0	663	0	0
Stage 1	520	520	-	687	687	-	-	-	-	-	-	-
Stage 2	373	703	-	354	530	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	236	178	786	184	180	638	1177	-	-	922	-	-
Stage 1	507	530	-	403	446	-	-	-	-	-	-	-
Stage 2	620	438	-	636	525	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	188	150	758	136	152	617	1156	-	-	909	-	-
Mov Cap-2 Maneuver	188	150	-	136	152	-	-	-	-	-	-	-
Stage 1	484	466	-	386	428	-	-	-	-	-	-	-
Stage 2	559	420	-	514	461	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.5	23.7	0.3	1.9
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1156	-	-	223	233	909	-	-
HCM Lane V/C Ratio	0.018	-	-	0.252	0.175	0.083	-	-
HCM Control Delay (s)	8.2	0.1	-	26.5	23.7	9.3	0.3	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.6	0.3	-	-

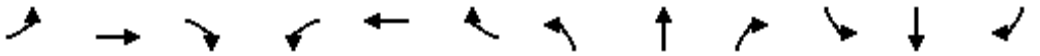
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	10	40	21	27	53	20	592	10	10	340	20
Future Vol, veh/h	20	10	40	21	27	53	20	592	10	10	340	20
Conflicting Peds, #/hr	18	0	12	6	0	14	12	0	6	12	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	10	42	22	28	55	21	617	10	10	354	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	786	1084	218	890	1089	344	393	0	0	639	0	0
Stage 1	403	403	-	676	676	-	-	-	-	-	-	-
Stage 2	383	681	-	214	413	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	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	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	283	216	786	237	214	652	1162	-	-	941	-	-
Stage 1	595	598	-	409	451	-	-	-	-	-	-	-
Stage 2	611	448	-	768	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	216	201	764	204	199	633	1142	-	-	930	-	-
Mov Cap-2 Maneuver	216	201	-	204	199	-	-	-	-	-	-	-
Stage 1	568	579	-	393	433	-	-	-	-	-	-	-
Stage 2	498	431	-	695	574	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.5	22.2	0.4	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	360	313	930	-	-
HCM Lane V/C Ratio	0.018	-	-	0.203	0.336	0.011	-	-
HCM Control Delay (s)	8.2	0.1	-	17.5	22.2	8.9	0.1	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	1.4	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	170	30	20	150	312	40	380	20	181	220	50
Future Volume (veh/h)	30	170	30	20	150	312	40	380	20	181	220	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	172	27	20	152	185	40	384	19	183	222	38
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	313	46	98	384	687	505	500	25	383	647	108
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.28	0.28	0.28	0.22	0.22	0.22
Sat Flow, veh/h	124	1400	204	97	1715	1547	1781	1763	87	1781	3009	503
Grp Volume(v), veh/h	229	0	0	172	0	185	40	0	403	183	129	131
Grp Sat Flow(s),veh/h/ln	1727	0	0	1812	0	1547	1781	0	1851	1781	1777	1736
Q Serve(g_s), s	0.9	0.0	0.0	0.0	0.0	4.0	0.9	0.0	10.6	4.8	3.2	3.4
Cycle Q Clear(g_c), s	6.0	0.0	0.0	4.2	0.0	4.0	0.9	0.0	10.6	4.8	3.2	3.4
Prop In Lane	0.13		0.12	0.12		1.00	1.00		0.05	1.00		0.29
Lane Grp Cap(c), veh/h	463	0	0	482	0	687	505	0	524	383	382	373
V/C Ratio(X)	0.49	0.00	0.00	0.36	0.00	0.27	0.08	0.00	0.77	0.48	0.34	0.35
Avail Cap(c_a), veh/h	1343	0	0	1412	0	1510	2020	0	2099	2020	2015	1969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	0.0	17.5	0.0	9.5	13.9	0.0	17.4	18.2	17.6	17.6
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.1	0.0	0.0	1.5	1.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	1.7	0.0	1.8	0.3	0.0	4.2	1.9	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	0.0	17.7	0.0	9.5	13.9	0.0	18.9	19.2	18.1	18.2
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		229			357			443			443	
Approach Delay, s/veh		18.5			13.5			18.4			18.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.9		16.7		16.3		16.7				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		60.0		40.0		60.0		40.0				
Max Q Clear Time (g_c+I1), s		12.6		8.0		6.8		6.2				
Green Ext Time (p_c), s		2.1		1.0		2.4		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			17.3									
HCM 6th LOS			B									

Appendix C

Detailed Trip Generation Table

LAND USE	RATE	DAILY	AM PEAK HOUR			PM PEAK HOUR		
		RATE	IN %	OUT%	% of Daily	IN %	OUT%	% of Daily
Motel	per room	9.0	40%	60%	8%	40%	60%	9%
Hotel	per room	10.0	60%	40%	6%	60%	40%	8%

LAND USE	QUANTITY	UNIT	DAILY	AM PEAK HOUR			PM PEAK HOUR		
			TRIPS	IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed Uses									
Hotel	95	rooms	950	34	23	57	46	30	76
Existing Uses									
Motel	40	rooms	(360)	(12)	(17)	(29)	(13)	(19)	(32)
Net New Trips									
Net New Trips			590	22	6	28	33	11	44

Source: San Diego Municipal Code Trip Generation Manual

LAND USE	DRIVEWAY [1] [2] VEHICLE TRIP RATE	CUMULATIVE [8] VEHICLE TRIP RATE	PEAK HOUR AND IN/OUT RATIO	
			AM (IN:OUT)	PM (IN:OUT)
LODGING [3]				
Hotel (w/convention facilities/restaurant)	10 trips/room; 300 trips/acre	10 trips/room; 300 trips/acre	6% (6:4)	8% (6:4)
Motel	9 trips/room; 200 trips/acre	9 trips/room; 200 trips/acre	8% (4:6)	9% (4:6)
Resort Hotel	8 trips/room; 100 trips/acre	8 trips/room; 100 trips/acre	5% (6:4)	7% (6:4)