APPENDIX D

City of Oceanside General Plan Update Transportation Impact Study and Traffic Operations Analysis (CR Associates)

CITY OF OCEANSIDE

GENERAL PLAN UPDATE

TRANSPORTATION IMPACT STUDY & TRAFFIC OPERATIONS ANALYSIS

MAY 2024

Prepared For

CITY OF OCEANSIDE

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Table of Contents

Appendices

List of Figures

List of Tables

1.0 Introduction

This technical report documents the Transportation Impact Study (TIS) and Traffic Operations Analysis (TOA) conducted as part of the City of Oceanside's General Plan Update (Oceanside GPU), in support of the Integrated Mobility Element (IM). The IM – previously referred to as the Circulation Element – is one of the required "elements" or chapters that will go into the Oceanside GPU.

The TIS is a VMT-based analysis that serves to identify and document potential transportation impacts related to the proposed land uses and mobility networks of the Oceanside GPU and its No Project Alternative (the currently adopted General Plan), and recommend improvements/mitigation measures, if applicable. The TOA is a Level of Service (LOS)-based analysis that serves to document vehicular traffic operations of the Oceanside GPU, including LOS analyses of the proposed Mobility Element roadway network and key intersections, as well as LOS analyses of freeway/highway segments within the vicinity of the City of Oceanside.

1.1 Background

Oceanside is situated in northwestern San Diego County, bordered by Marine Corps Base Camp Pendleton to the north, the City of Carlsbad to the south, the City of Vista and the unincorporated San Diego County community of Bonsall to the east, and the Pacific Ocean to the west. The coastal location defines the City's western edge. Similarly, Marine Corps Base Camp Pendleton creates a firm edge to the north, with limited public connections. **Figure 1.1** displays the City's location within the region.

Oceanside encompasses approximately 42 square miles and is home to a diverse population of more than 175,000 residents. A diverse and well-integrated transportation system serves the City, consisting of streets, regional freeways and highways, public transit services, pedestrian infrastructure, and bicycle facilities.

1.2 Project Description

The Oceanside GPU includes an update to the currently adopted General Plan to address future growth and development in the City of Oceanside. **Table 1.1** summarizes key City of Oceanside land uses for the Base Year, the currently adopted General Plan, and the Oceanside GPU.

Table 1.1 - Land Use Summary

Land Use	2016 Base Year	2050 Adopted General Plan	2050 Oceanside GPU
Dwelling Units	66,592	71,360	84,150
Retail (sf)	16,830,159	17,330,988	17,831,816
Office (sf)	814,230	1,928,100	1,990,359
Industrial (sf)	10,504,727	15,983,425	16,799,481
Hotel (rooms)	2,704	3,834	4,964

Source: Dyett & Bhatia (2024); CR Associates (2024)

Notes:
sf = square feet
[1] Land uses provided in this summary table reflect the primary vehicular traffic generating uses within the City of Oceanside. Land uses not included in this table include parks and recreational uses, open space, transportation/utilities (e.g. airport runways, transit stop facilities, etc.), and vacant areas.

Between the Base Year and the Oceanside GPU, all of the land uses would increase. Dwelling units would increase moderately by 26% while commercial retail would only increase by 6%. Office uses would more than double, increasing significantly by 144%. Industrial and hotel uses would also increase significantly by 60% and 84%, respectively.

The Oceanside GPU, compared to the Adopted General Plan, would increase all land uses. Retail, office, and industrial land uses would increase by 5% or less, while dwelling units would increase moderately by 18% and hotel uses would increase moderately by 29%.

1.3 Report Organization

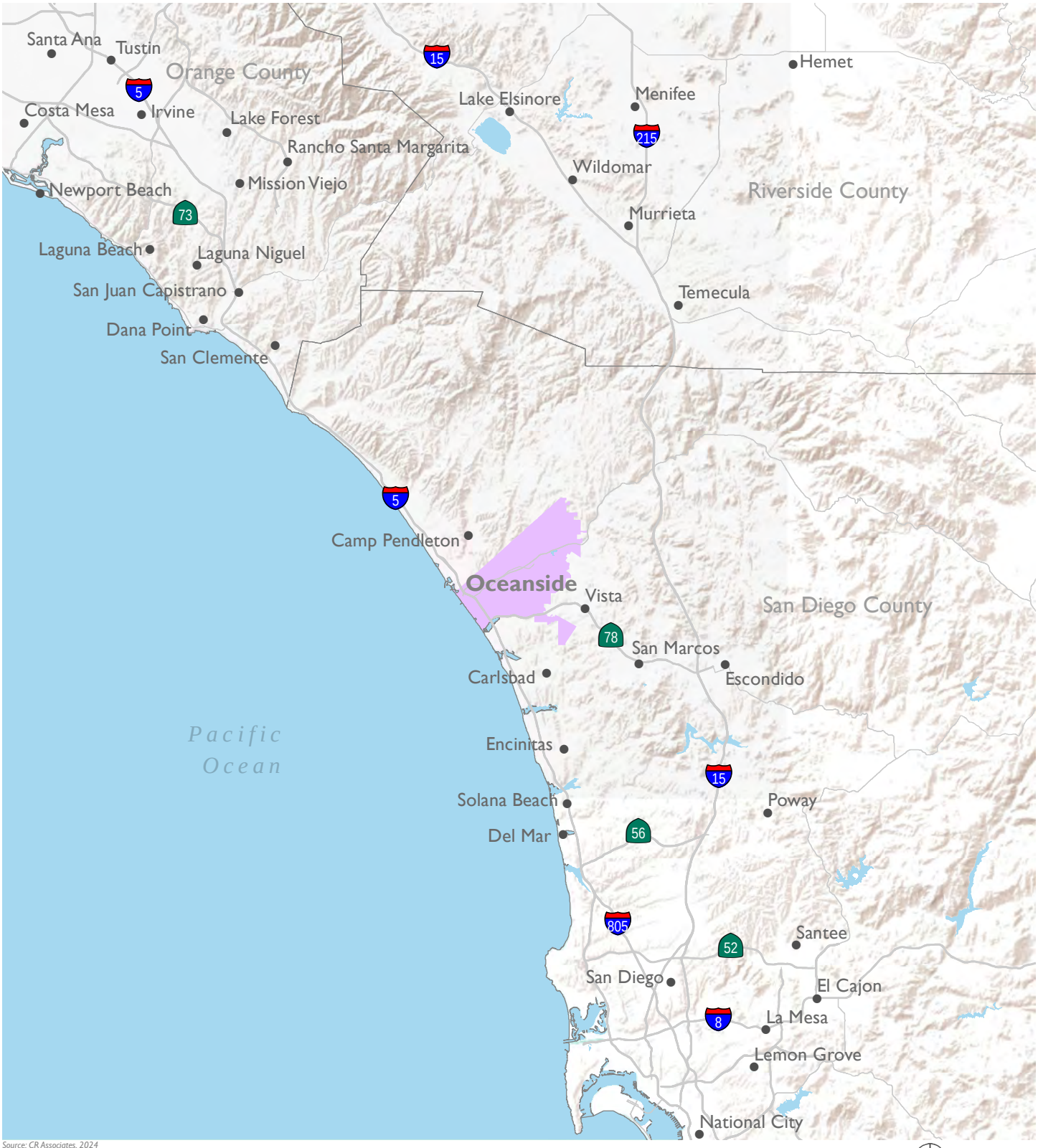
The analysis herein is based on the revised (January 2023) State of California Environmental Quality Act (CEQA) Guidelines and the City of Oceanside's Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (August 2020) (Oceanside TIAG).

Following this introductory chapter, the remainder of this TIS is organized into the following chapters:

2.0 ***Transportation Impact Study (VMT Analysis)*** – This chapter discusses the VMT analysis and potential CEQA transportation impacts of the Oceanside GPU and its No Project Alternative (the currently adopted General Plan).

3.0 ***Traffic Operations Analysis (LOS Analysis)*** – This chapter summarizes the vehicular operations of the Oceanside GPU.

Figure 1.1: Regional Location



Source: CR Associates, 2024

0 3½ 7 14

Miles

Map Date: 6/14/2021

2.0 Transportation Impact Study (VMT Analysis)

The TIS serves to identify and document potential CEQA transportation impacts related to the Oceanside GPU and the No Project Alternative (the currently adopted General Plan), and recommend improvements/mitigation measures, as necessary.

2.1 Study Scenarios

SANDAG's regional Activity-Based Model (ABM) was customized for the City of Oceanside study area and utilized to model and evaluate three (3) study scenarios, including base year (2016) and two (2) future year alternatives, as follows:

- ***Base Year (2016)*** – establishes the existing baseline VMT within the project study area based on the SANDAG Series 14 ABM2+ Regional Model Base Year (2016) calibrated for the City of Oceanside.
- ***Oceanside GPU*** – represents the buildout of the Oceanside GPU land uses and mobility networks, which were developed in collaboration with community members, City staff, and the project consultant team.
- ***No Project Alternative (Adopted General Plan)*** – represents the growth the City of Oceanside may possibly see based on the current General Plan land uses and mobility network as they apply today.

All study scenarios were modeled using the calibrated *SANDAG Series 14 ABM2+ Regional Model – City of Oceanside General Plan Update Model* (the "Model"). The Model assumed forecasted growth of the City of Oceanside proposed land uses and transportation improvements.

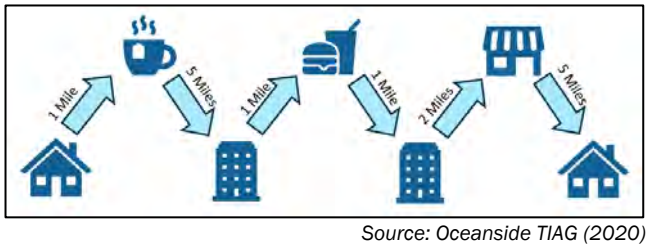
This report has been prepared in accordance with the City's compliance with SB 743 legislation specified by the Governor's Office of Planning (OPR). SB 743 removes traffic LOS as a metric for determining significant environmental impacts for transportation and replaces it with VMT as the primary measure of transportation impacts.

For the purpose of the transportation impact study, Plan-to-Ground analysis was conducted by comparing the Oceanside GPU and its No Project Alternative (Adopted General Plan) to Base Year (2016), which is representative of baseline conditions.

2.2 Analysis and Methodology Thresholds

This section describes the CEQA transportation impact analysis methodology that was prepared in accordance with the City's compliance with the SB 743 legislation and the California Environmental Quality Act (CEQA) project review process.

VMT, or vehicle miles traveled, refers to the distance a vehicle travels from each origin to destination. The following graphic demonstrates how VMT is derived. In the example to the right, there is a total of 15 vehicle miles traveled.



Source: Oceanside TIAG (2020)

VMT Metrics

The following definitions describe how VMT is referred to, calculated, and accounted for in this CEQA impact analysis:

- ***VMT per Capita*** includes all vehicle-based person trips grouped and summed to the home location of individuals who are drivers or passengers on each trip. It includes home-based and non-home-based trips. The VMT for each home is then summed for all homes in a particular census tract and divided by the population of that census tract to arrive at VMT per Capita.
- ***VMT per Employee*** includes all vehicle-based person trips grouped and summed to the work location of individuals on the trip. This includes all trips made by employees (commute-portion only) with a job in Oceanside. The VMT for each work location is then summed for all work locations in a particular census tract and divided by the number of employees of that census tract to arrive at VMT per Employee.
- ***Total Retail VMT*** is the sum of all vehicle trips generated by retail uses in the community multiplied by their associated trip lengths.
- ***Transportation Projects (VMT)*** that are included in a General Plan or Community Plan should be analyzed at the general plan/community plan level because the change to a roadway configuration affects the VMT efficiency of the City's VMT per Capita and VMT per employee. The impacts or lack thereof due to the roadway configuration(s) are already accounted for in the VMT per Capita and VMT per employee. VMT Analysis for roadways projects can be best considered at regional, citywide, and community levels prior to the consideration of individual projects. The *Institute of Transportation Engineers (ITE) San Diego Regional Guidelines (May 2019)*, recommend that projects included in the citywide or community plan may be presumed to have less than significant VMT impacts.

  Furthermore, this does not preclude the lead CEQA agency from conducting additional analyses in the future; instead, it encourages the lead CEQA agency to view the general plan update holistically rather than compartmentally.

Determination of Significant Impact

The City of Oceanside utilizes the Institute of Transportation Engineers (ITE) *San Diego Regional Guidelines (May 2019)* to establish thresholds and methodology for VMT analysis. These guidelines state that a significant transportation impact would occur if the Project exceeded the thresholds for City of Oceanside's compliance with SB 743 legislation, as identified in **Table 2.1.**

Table 2.1 - Thresholds for Significant VMT Impacts by Land Use Type

Category[1]	VMT Metric	Significant Transportation VMT Impact Threshold
Residential	VMT per Capita	Below 85% regional average[2] VMT per Capita
Employment	VMT per Employee	Below 85% regional average[2] VMT per Employee
Retail	Retail VMT	Zero net increase in VMT generated by retail uses
Transportation Project	N/A	Already reflected in the VMT per Resident/Capita efficiency

Source: Oceanside TIAG (2020)

Notes:
[1] The thresholds included in this table are for the pertinent land use types of the Oceanside GPU. Other land use thresholds (e.g. hotel, institutional, mixed-use, etc.) have been excluded as those thresholds are more land use specific and for project-level analyses.
[2] The regional average is determined using the Base Year (2016) of the current version of the SANDAG Regional Travel Demand Model (Series 14, version 13.3.2) that has been calibrated for the City of Oceanside.

Per the Oceanside TIAG, projects that exceed the significance thresholds are considered significant and will require mitigation. For example, if the residential component of the Oceanside GPU is identified to be above 85% of the regional average VMT per Resident, mitigation measures would be required to reduce its VMT impact. Projects that are unable to mitigate to a less than significant level of impact must provide a detailed statement of overriding considerations in accordance with CEQA Guidelines Sections 15091 and 15093.

2.3 VMT Analysis: Oceanside GPU

This section focuses on whether there will be a significant impact if the Oceanside GPU land uses would, in total, exceed the land use thresholds for the respective VMT.

To establish a baseline understanding, SANDAG's regional ABM2+ Regional Model was customized for the City of Oceanside study area and calibrated at the local level. For the Oceanside GPU, the 2016 forecast was calibrated using detailed land use inputs for the Oceanside study area. In addition, the local transportation network was refined to better match ground conditions in 2016. By refining land use and network assumptions, a Base Year scenario was developed that closely matched baseline conditions in 2016. With the calibrated base year model as a foundation, the Oceanside GPU and its No Project Alternative (Adopted General Plan) were developed with a buildout year of 2050. These scenarios provide the relevant metrics for the VMT analysis.

Employment/Residential

Table 2.2 presents the City of Oceanside VMT per Capita and VMT per Employee metrics for the San Diego Regional Base Year and Oceanside GPU. The VMT reports for Base Year are included in **Appendix A**. The VMT reports for the Oceanside GPU are included in **Appendix B**.

Table 2.2 - Oceanside GPU VMT Efficiency Metrics

VMT Metric	Regional Base Year (2016)	Oceanside GPU (2050)	% of Regional Base Year	VMT Impact Threshold	Significant Impact?
	A	B	B/A		
VMT per Capita	19.0	15.6	82.1%	85.0%	No
VMT per Employee	19.1	10.3	53.9%	85.0%	No

Source: CR Associates (2024)

Under Base Year conditions, the San Diego region has an average VMT per Capita of 19.0 and average VMT per employee of 19.1. The City of Oceanside currently has an average VMT per Capita of 18.0 and average VMT per Employee of 13.4. By 2050, with the buildout of the Oceanside GPU, which includes the proposed active transportation network and roadway network, the VMT efficiency of the City of Oceanside substantially improves to 15.6 for VMT per Capita and 10.3 for VMT per Employee. As a result, both VMT metrics under Oceanside GPU fall below the VMT impact thresholds of 85% of the regional base year. Therefore, *the Oceanside GPU transportation impacts for residential and employment land uses would be less than significant*.

Retail

Although retail for Oceanside GPU is projected to increase, the retail is considered to be local-serving retail that will serve mainly the City of Oceanside. OPR's technical advisory suggests that new local-

serving retail development shortens trips and reduces VMT by improving retail destination proximity and redistributing existing trips rather than creating new trips. Therefore, the *Oceanside GPU transportation impacts for retail land uses would be less than significant.*

Transportation

As mentioned previously, the effects due to roadway configurations are already accounted for in the VMT per Capita and VMT per Employee. In other words, the miles traveled by residents and employees are directly correlated to the transportation network available to travel through. Additionally, as recommended by ITE Guidelines, transportation projects included in citywide or community plans may be presumed to have less than significant VMT impacts. Therefore, *the Oceanside GPU transportation impacts for its transportation projects would be less than significant.*

2.4 No Project Alternative (Adopted General Plan)

This chapter discusses potential VMT impacts under the No Project Alternative (Adopted General Plan), which represents the currently adopted General Plan without the Oceanside GPU's proposed land use and mobility network modifications.

The California Environmental Quality Act (CEQA) mandates consideration and analysis of alternatives to the Oceanside GPU. According to CEQA Guidelines, the range of alternatives "shall include those that could feasibly accomplish most of the basic purposes of the project and could avoid or substantially lessen one or more of the significant impacts" (CEQA Guidelines Section 15126.6 (d)(2)). The purpose of evaluating the No Project Alternative is to allow decision makers to compare the outcomes of approving the Oceanside GPU with the potential impacts of maintaining the currently adopted General Plan. The No Project Alternative represents what would reasonably be expected to occur in the foreseeable future if the Oceanside GPU were not adopted. The No Project Alternative would consist of the adopted General Plan's land use designations and the currently adopted mobility network as they apply today. Table 1.1, shown previously, summarizes the buildout under the No Project Alternative compared to the Base Year and Oceanside GPU.

Table 2.3 presents the City of Oceanside resident and employee VMT efficiency metrics for No Project Alternative conditions. The VMT Reports for this alternative are included in **Appendix C**.

Table 2.3 - Oceanside No Project VMT Efficiency Metrics for Transportation Impact Analysis

VMT Metric	Regional Base Year (2016)	No Project Alternative (2050)	% of Regional Base Year	VMT Impact Threshold	Significant Impact?
VMT per Capita	19.0	16.2	85.3%	85.0%	Yes
VMT per Employee	19.1	10.5	55.0%	85.0%	No

Source: SANDAG (2023); CR Associates (2024)

As shown, the No Project Alternative is projected to have an average VMT per Capita of 16.2 and an average VMT per Employee of 10.5. The VMT per Capita would exceed the 85% threshold while the VMT per Employee would fall below the 85% threshold. Therefore, since the VMT per Capita would exceed the VMT impact threshold of 85%, *the No Project Alternative would result in a significant transportation impact for its residential land uses*.

3.0 Traffic Operations Analysis (LOS Analysis)

This chapter describes the Mobility Element roadways, key study intersections, and freeways that support Oceanside's vehicular mobility, including an assessment of physical characteristics and level of service (LOS) conditions.

3.1 Analysis Methodology

Vehicular operational evaluations consist of roadway segment analyses, peak hour intersection analyses, and peak hour freeway/state highway segment analyses. The City of Oceanside jurisdictional limits were used as the general study area boundaries for the vehicular analyses. The study area selection for each analysis is further detailed within the respective subsection.

Roadway segment and intersection vehicular operational analyses followed the Oceanside VMT Guidelines. Operational performance is described in terms of level of Service (LOS), a measure for vehicular operations based on traffic flow characteristics.

Table 3.1 describes the characteristics of each LOS category, which range from LOS A – approximating free flow conditions, to LOS F – approximating the most congested flow. The quantitative methodologies for determining the LOS for each analysis type are described within the respective subsection.

Table 3.1 - Vehicular Level of Service Definitions

LOS	Characteristics
A	Represents the best operating conditions and is considered free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
B	Represents reasonably free-flowing conditions, but with some influence by others.
C	Represents constrained constant flow below speed limits, with additional attention required by the drivers to maintain safe operations. Comfort and convenience levels of the driver decline noticeably.
D	Represents traffic operations approaching unstable flow with high passing demand and passing capacity near zero, characterized by drivers being severely restricted in maneuverability.
E	Represents unstable flow near capacity. LOS E often changes to LOS F very quickly because of disturbances (road conditions, accidents, etc.) in traffic flow.
F	Represents the worst conditions with heavily congested flow and traffic demand exceeding capacity, characterized by stop-and-go waves, poor travel time, low comfort and convenience, and increased accident exposure.

Source: Highway Capacity Manual, Transportation Research Board (2016)

3.1.1 Roadway Segment Level of Service

Roadway segment LOS categories are based on theoretical daily vehicular capacity thresholds, which are influenced by a roadway's functional classification and its lane and median geometry. Existing or forecasted average daily traffic (ADT) volumes are compared to these thresholds to determine the LOS of a roadway segment.

The City of Oceanside utilizes a system of six classifications to identify the type of service each facility is intended to provide. The classifications are supported by design guidelines that indicate the characteristics of each facility.

Expressway – An Expressway is designed to provide express direct travel through the City with four to six lanes in each direction. Expressways are divided highways with raised medians and fully controlled access at intersections. Grade separation of intersections can help improve multimodal safety and optimize Expressway operations. Expressways are constructed and maintained by Caltrans.

Prime Arterial – A Prime Arterial is designed to provide regional, sub-regional, and intra-city travel. They typically have six lanes of travel, raised and landscaped medians, shoulders for emergency parking and bike facilities, and restricted access (e.g., fewer intersections, no driveways). On-street parking is prohibited.

Major Arterial – A Major Arterial is designed to provide intra-city and sub-regional connectivity, and provide some property access in select areas. Driveways interfacing with these roads may have certain restrictions to ensure proper roadway functions. They typically have four or six lanes of travel, raised, landscaped, or striped medians, and shoulders for emergency parking and bike facilities. Left-turn movements are typically protected along Major Arterials.

Secondary Collector – A Secondary Collector is designed for intra-city travel as a link between arterial and collector roadways. They are commonly lined with driveways providing direct access to abutting properties; however, that is not its primary purpose. The typical design features include four travel lanes with a center two-way left-turn lane or left-turn pockets, and bike facilities. On-street parking may be present.

Collector – A Collector is designed to connect local streets with the adjacent arterial street network. These are usually two travel lanes with or without a center two-way left-turn lane and may include bicycle facilities. On-street parking may be present. Collector streets frequently have driveways, which provide direct access to abutting properties (although the desire is to limit access where possible to reduce potential conflicts). A Collector can also be a two-lane one-way street, such as the one-way couplet on Mission Avenue between Coast Highway and Clementine Street and Seagaze Drive between Coast Highway and Clementine Street.

Local Street – Local Streets are low capacity, low speed streets whose main purpose is to provide direct access to abutting properties. Local Streets typically do not provide or encourage vehicular connectivity beyond providing access to the nearest intersecting higher capacity roadway (most often, these are Collectors). The typical design standards include the provision of two travel lanes, parking lanes on both sides of the street, and direct driveway access.

Table 3.2 presents the roadway segment capacity thresholds, which are based on the Oceanside VMT Guidelines. LOS A through D operations are regarded as acceptable performance for Mobility Element roadway segments in the City of Oceanside.

Table 3.2 - City of Oceanside Mobility Element Roadway Classification LOS & Vehicular Capacity

Class	Lanes	Cross Section[2]	Level of Service (LOS)[1]				
			A	B	C	D	E
Expressway	6	102/160 122/200	0 to 29,999	30,000 to 41,999	42,000 to 59,999	60,000 to 69,999	70,000 to 79,999
Expressway	4	102/160 122/200	0 to 24,999	25,000 to 34,999	35,000 to 49,999	50,000 to 54,999	55,000 to 59,999
Prime Arterial	6	104/124	0 to 24,999	25,000 to 34,999	35,000 to 49,999	50,000 to 54,999	55,000 to 59,999
6-Lane Major Arterial	6	104/124	0 to 19,999	20,000 to 27,999	28,000 to 39,999	40,000 to 44,999	45,000 to 49,999
5-Lane Major Arterial[3]	5	102/122	0 to 17,499	17,500 to 24,499	24,500 to 34,999	35,000 to 39,999	40,000 to 44,999
4-Lane Major Arterial	4	80/100	0 to 14,999	15,000 to 20,999	21,000 to 29,999	30,000 to 34,999	35,000 to 39,999
Secondary Collector (4 lanes with 2-way left turn lane)	4	64/84	0 to 9,999	10,000 to 13,999	14,000 to 19,999	20,000 to 24,999	25,000 to 29,999
Secondary Collector (4 lanes without 2-way left-turn lane, with left turn pockets	4	54/74, 60/80	0 to 8,999	9,000 to 12,999	13,000 to 17,999	18,000 to 21,999	22,000 to 24,999
Collector (commercial fronting, 2- lanes with 2-way left turn lane)[4]	2	50/70	0 to 4,999	5,000 to 6,999	7,000 to 9,999	10,000 to 12,999	13,000 to 14,999
Collector (residential streets in the Circulation Element or industrial fronting)	2	40/60, 50/70	0 to 3,999	4,000 to 5,499	5,500 to 7,499	7,500 to 8,999	9,000 to 9,999
Collector (One-Way)[5]	2	-	0 to 7,499	7,500 to 9,499	9,500 to 12,499	12,500 to 14,999	15,000 to 17,499
Local Street (residential streets NOT in the Circulation Element	2	36/56, 40/60	–	–	2,200	–	–

Source: Oceanside VMT Guidelines (2020)

Notes:
[1] Roadway segments with a daily volume greater than the LOS E threshold operate at LOS F
[2] Cross sections are listed as curd-to-curb width/total right of way width, in feet.
[3] Vandegrift Boulevard is the only Circulation Element roadway designated as a 5-lane Major Arterial. It is not intended that other roadways be built to 5-lane Major Arterial standards.
[4] This capacity will also be assumed for a two-lane one-way collector.
[5] LOS thresholds obtained from the *City of San Diego Transportation Study Manual (2020)*.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical and operational attributes. Often, a roadway segment that is analyzed to be LOS E or F based on theoretical capacity is found to operate acceptably in practice or vice versa. In such cases, HCM intersection analysis may be utilized to provide a more accurate indication of LOS.

3.1.2 Peak Hour Intersection Level of Service

Signalized Intersections

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in the *2016 Highway Capacity Manual* (HCM 6). This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (seconds/vehicle).

The HCM 6 methodology sets 1,900 passenger-cars per hour per land (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g., through and right-turn movements sharing the same lane). The computerized analysis of intersection operations was performed utilizing Synchro 11 traffic analysis software by Trafficware.

The following assumptions were utilized in conducting all intersection LOS analyses:

- Each signalized intersection assumed 10 pedestrian crossing signal activations per leg/signal phase per hour, an estimate that is more conservative than the default Synchro 11 value of 5.
- A 3% heavy vehicle factor was applied for all study area intersections. 3% is a standard assumption in HCM methodologies.
- A Peak Hour Factor (PHF) of 0.95 was utilized for all study area intersections.
- Signal timings were optimized by adjusting cycle lengths and splits for uncoordinated signals and splits only (maintaining existing cycle lengths) for coordinated signals.

Table 3.3 presents the signalized intersection average control delay per vehicle thresholds and describes the operational characteristics of each LOS category. LOS A through D operations are regarded as acceptable performance for signalized Mobility Element intersections in the City of Oceanside.

Table 3.3 - Signalized Intersection LOS Thresholds and Characteristics

LOS	Average Control Delay Per Vehicle (seconds)	LOS Characteristics
A	<10.0	Occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable, or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	10.1 – 20.0	Occurs when the volume-to-capacity ratio is low and either progression is highly favorable, or the cycle length is short. More vehicles stop than with LOS A.
C	20.1 – 35.0	Occurs when progression is favorable, or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	35.1 – 55.0	Occurs when the volume-to-capacity ratio is high and either progression is ineffective, or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	55.1 – 80.0	Occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	>80.0	Occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board (2016)

Unsignalized Intersections

Unsignalized intersections, including two-way and all-way stop controlled intersections, were analyzed using the HCM 6 unsignalized intersection analysis methodology, and utilizing the Synchro 11 traffic analysis software. The LOS for an all-way stop-controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. For side-street stop-controlled (SSSC) intersections, LOS is determined by the computed or measured control delay and is defined for each minor movement. Control delay and LOS for the "worst" movement are reported, as opposed to average intersection LOS and delay. **Table 3.4** presents the level of service operations thresholds for unsignalized intersections. LOS A through D operations are regarded as acceptable performance for unsignalized Mobility Element intersections in the City of Oceanside.

Table 3.4 - Unsignalized Intersection LOS Thresholds

Level of Service	Average Control Delay Per Vehicle (seconds)
A	<10.0
B	10.1 – 15.0
C	15.1 – 25.0
D	25.1 – 35.0
E	35.1 – 50.0
F	>50.0

Source: Highway Capacity Manual, Transportation Research Board (2016)

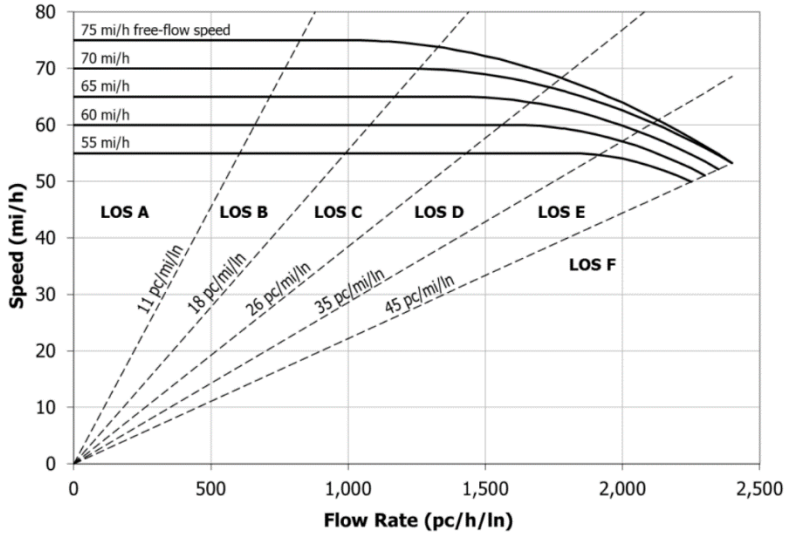
3.1.3 Freeway/Highway Level of Service

Freeway level of service analysis is based upon procedures developed by the *Highway Capacity Manual 2010* (HCM 2010). The procedure for calculating freeway LOS involves estimating the vehicle speed (mi/h) and density/flow (pc/mi/ln).

HCS7 software, developed by McTrans, was used to calculate both the vehicle speed and density/flow along the study area freeway segments. The HCS7 software required the following inputs to complete the calculations:

- Average Annual Daily Traffic (AADT) –
- K (peak hour percentage) – Caltrans Traffic Census 2018 AADT Volumes Report.
- D (directional split) – Caltrans Traffic Census 2018 AADT Volumes Report.
- $AADT_{adj}$ – Calcualted using AADT and D values provided by Caltrans using the following equation:
    - $AADT_{adj} = \left(\frac{D}{1-D}\right) \times AADT$
    - Represents the direction in the opposite direction of the Peak Direction
- PHF – Assumed to be a typical value of 0.95.
- P_T – (% Trucks and Buses) – Caltrans Traffic Census 2018 AADT Truck Volumes Report
- P_R – (%RVs) – Assumed to be 0, HCM 6 recommends grouping RV volumes with Trucks and Buses as the value is assumed to less than a 5:1 ratio.
- General Terrain – Assumed to be less than 2% grade and therefore Level Terrain (HCM 6 11-16,17)
- f_p – Driver population factor assumed one as traffic is largely commuter traffic.
- E_T – Value of 1.5 as terrain is Level (HCM 6 11-15)
- E_R – Value of 1.2 as terrain is Level (HCM 6 11-15)
- Lane Width – Assumed 12’ maximum value by Google Earth survey.
- Right-Side Clearance – Assumed 6’ maximum value by Google Earth survey.
- Total Ramp Density, TRD – Calculated based on Google Earth survey.
    - Density calculated by total number of on/off ramps in single direction within segment length plus 3 miles in both directions, divided by the total length.
- Base Free-Flow Speed, BFFS – Assumed 75.4 mph (HCM 6 11-11)

Using the calculated freeway speed and density/flow, the LOS is determined using the chart below.



3.2 Modeling and Traffic Volume Forecasting

This section summarizes the travel demand model forecasting process utilized to project the future travel patterns within the City of Oceanside, under buildout of the Oceanside GPU. Oceanside GPU traffic volumes were derived from the SANDAG 2050 Series 14 ABM2+ Regional Travel Demand Model run and calibrated for the City of Oceanside. Section 3.2 describes the Base Year model calibration process and Section 3.3 describes the process used to develop Oceanside GPU volumes.

3.2.4 Base Year Model Calibration

To calibrate the model to better represent existing travel patterns within the City of Oceanside, the Base Year model calibration process included verification and validation of Base Year model land use and roadway network inputs.

Base Year Land Use Verification/Validation

To ensure existing land uses were currently represented in the SANDAG Series 14 ABM2+ Base Year model, land use types, descriptions, and quantities were crosschecked with ground conditions using Google Earth aerial imagery and field verifications.

Base Year Roadway Network Verification/Validation

The SANDAG Series 14 ABM2+ Base Year roadway network was compared to field conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions within the project study area:

- TAZ loading inputs
- Number of lanes for roadways
- Traffic controls
- Posted speed limits
- Signalized intersection geometrics
- Street classification
- Roadway speed limits
- Turn restrictions
- Bicycle facilities
- Multi-use paths

Base Year Ground Count Validation & Adjustment

Historical traffic volumes over the past 10 years were compiled from the City of Oceanside Traffic Count Database and other recent studies to compare to the model output. This database included multiple counts representing the same location on numerous segments, as well as the counts input into the model, and were selected based upon nearby trip generations and traffic patterns along each roadway segment and year of data. If available, counts from 2016 were used (SANDAG Series 14 Base Year), followed by data from 2017, 2018, and finally 2019. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected to be a model input. Adjustments were made as needed to ensure the Base Year model output accurately reflected available traffic count information.

3.2.5 Traffic Volume Forecasting

The Oceanside GPU model was developed by inputting the Oceanside GPU land uses and roadway networks into the calibrated Regional Model Year 2050, with the following adjustments/assumptions:

- Buildout of the Oceanside GPU land uses within the project study area.
- Future roadway network within the study area with the roadway segment functional classifications identified in **Figure 3.1**.
- Future active transportation network within the study area with the bicycle facilities identified in **Figure 3.2**.
- Regional model Year 2050 land uses outside of the study area.
- Regional model Year 2050 roadway and active transportation networks outside of the study area.
- Regional model Year 2050 transit network both inside and outside of the study area.

The model inputs described above were reviewed by the project team and approved by City staff prior to running the model forecasts. Oceanside GPU forecast volumes were reviewed and adjusted by the project team and City staff based on a comparison between the Base Year 2016 traffic volumes and historic counts. **Figure 3.3** shows the projected ADT under Oceanside GPU conditions for all study roadway segments.

Intersection geometrics under Oceanside GPU conditions reflect the roadway segment functional classifications and bicycle facilities, shown previously. **Figure 3.4** displays the intersection geometrics for the study intersections under Oceanside GPU conditions. Intersection peak hour turning movement volumes were developed by utilizing the National Cooperative Highway Research Program (NCHRP) Report 255 methodology for estimating intersection turning movements. This methodology describes the use of growth factors, based on the comparison of existing daily roadway segment volumes and estimated daily roadway segment volumes, which are applied to existing peak hour intersection approach and departure volumes. Manual adjustments were also made to ensure that traffic volumes among adjacent intersections were reasonably balanced. **Figure 3.5** shows the projected peak hour intersection turning movement volumes under Oceanside GPU conditions for all study intersections.

Figure 3.1: Planned Roadway Classifications

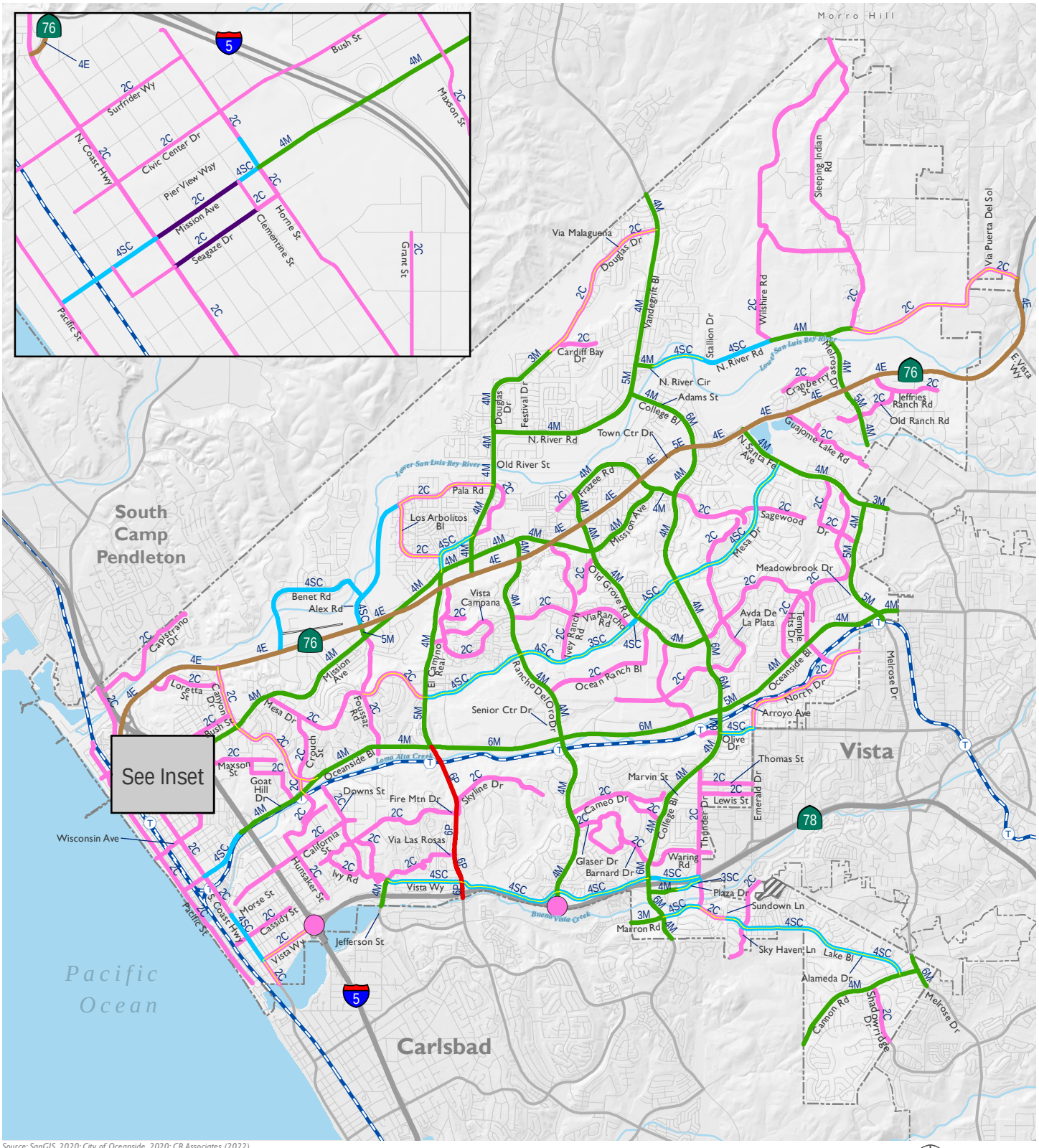
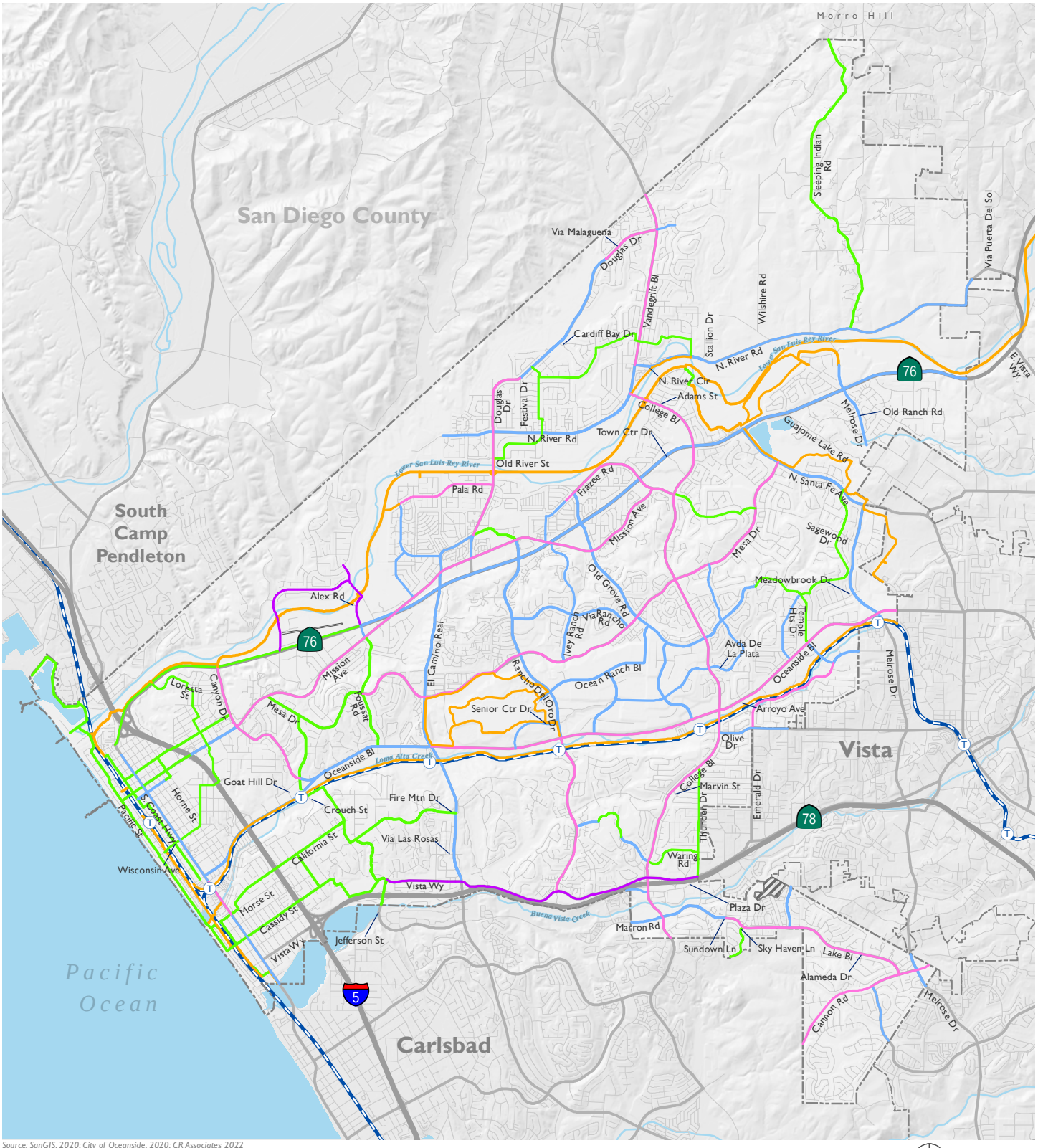


Figure 3.2: Recommended Bicycle Network



Source: SanGIS, 2020; City of Oceanside, 2020; CR Associates 2022

- Transit Stop
- Rail
- City of Oceanside
- Sphere of Influence

Recommended Classifications

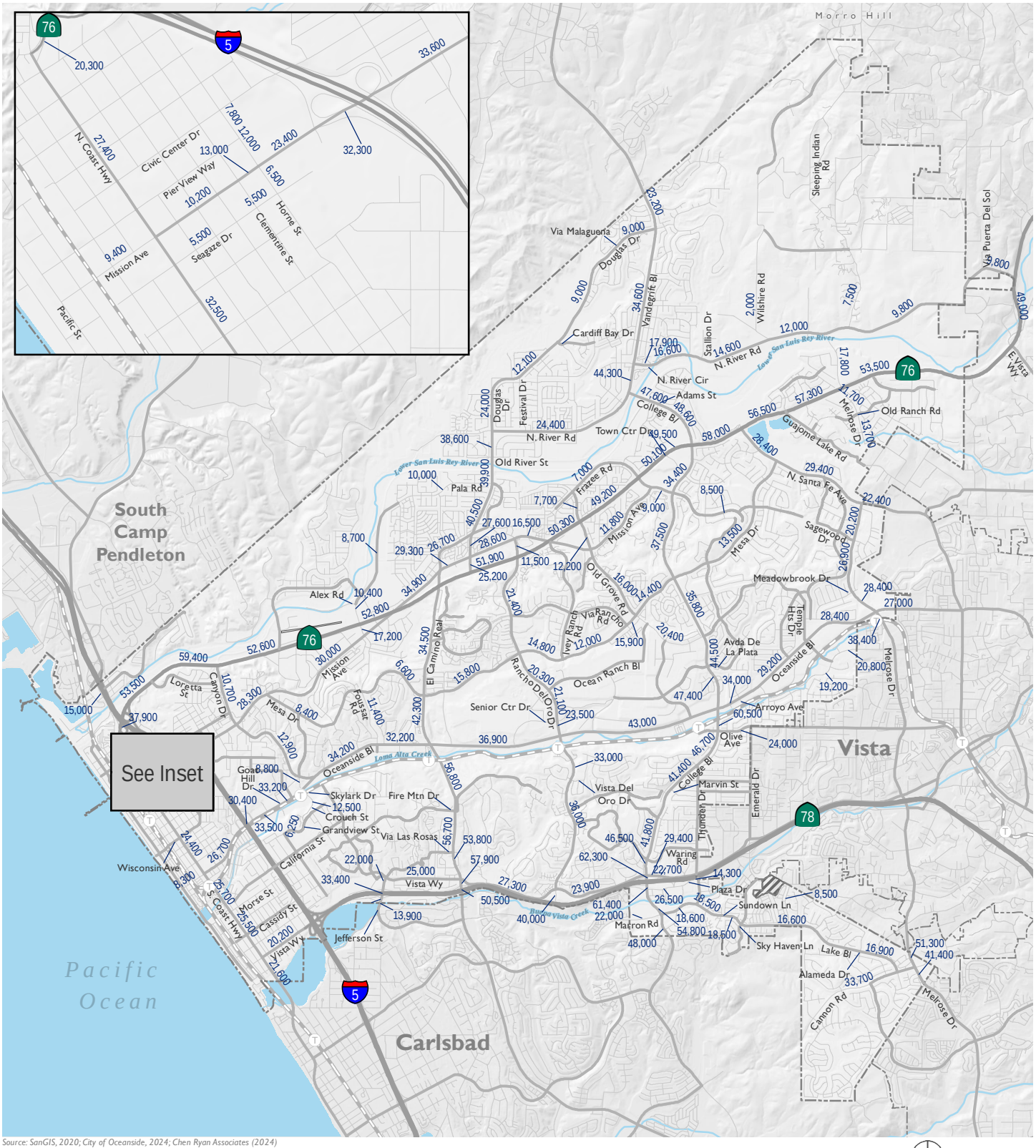
- Class I - Bike Path
- Class II - Bike Lane
- Class III - Bike Route
- Class IV - Cycle Track or Buffered Bike Lane
- Buffered Bike Lane

0 ½ 1 2

Miles

Map Date: 4/24/2024

Figure 3.3: Future Daily Traffic Volumes



Source: SanGIS, 2020; City of Oceanside, 2024; Chen Ryan Associates (2024)

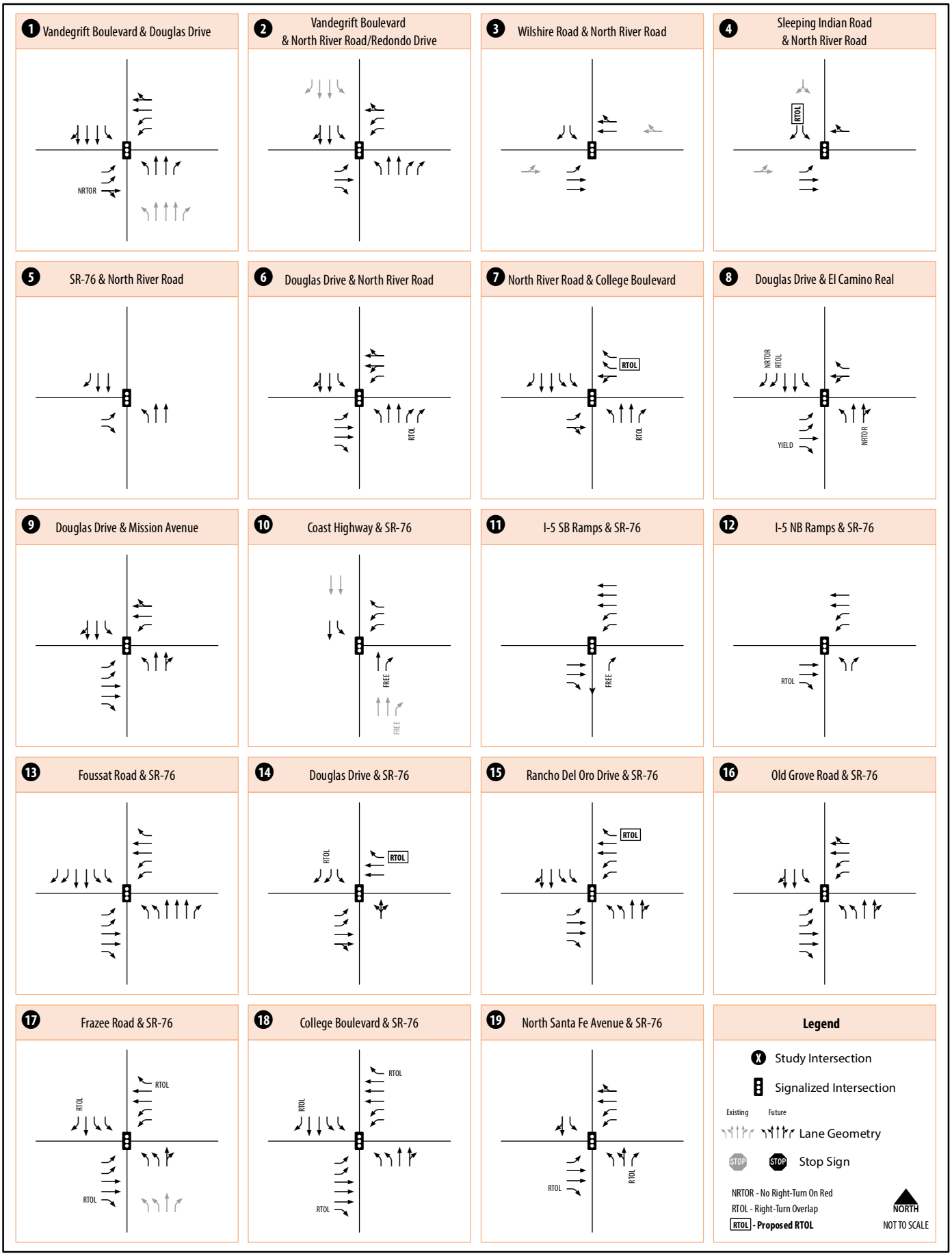


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Figure 3.4
Intersection Geometrics (1 of 3)
Oceanside GPU 2050 Conditions

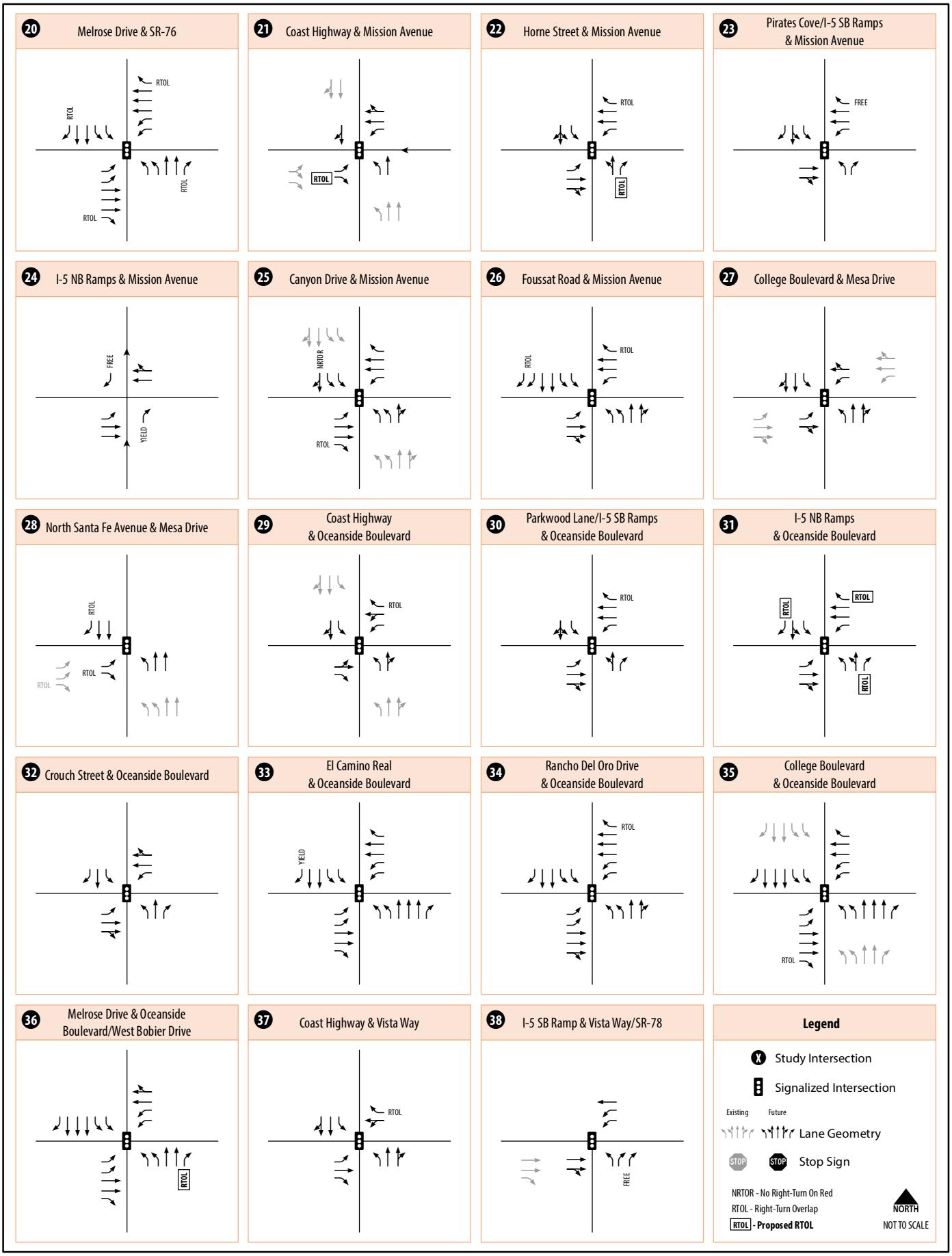

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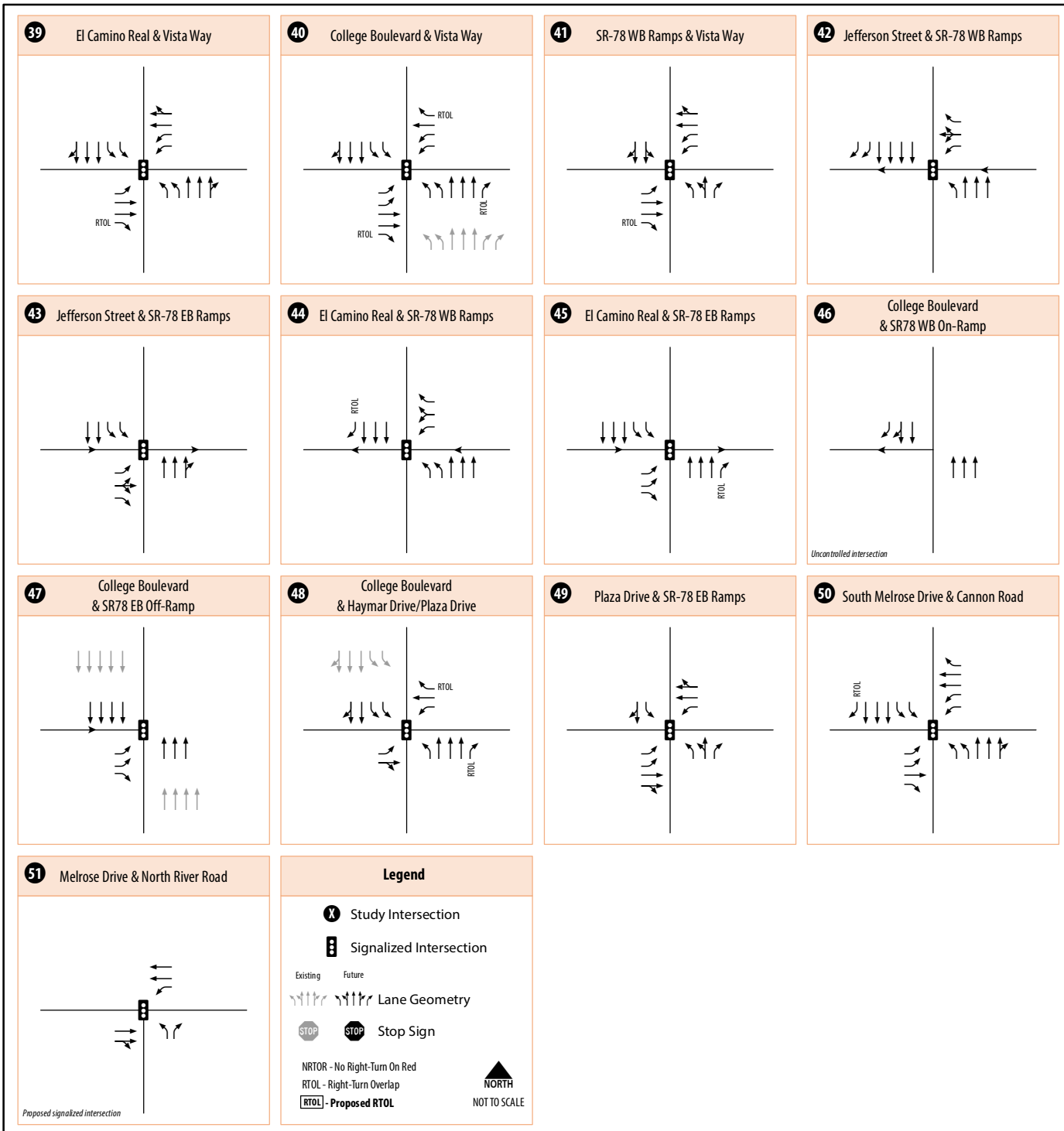
Figure 3.4
Intersection Geometrics (2 of 3)
Oceanside GPU 2050 Conditions



Oceanside General Plan Update
Transportation Impact Study

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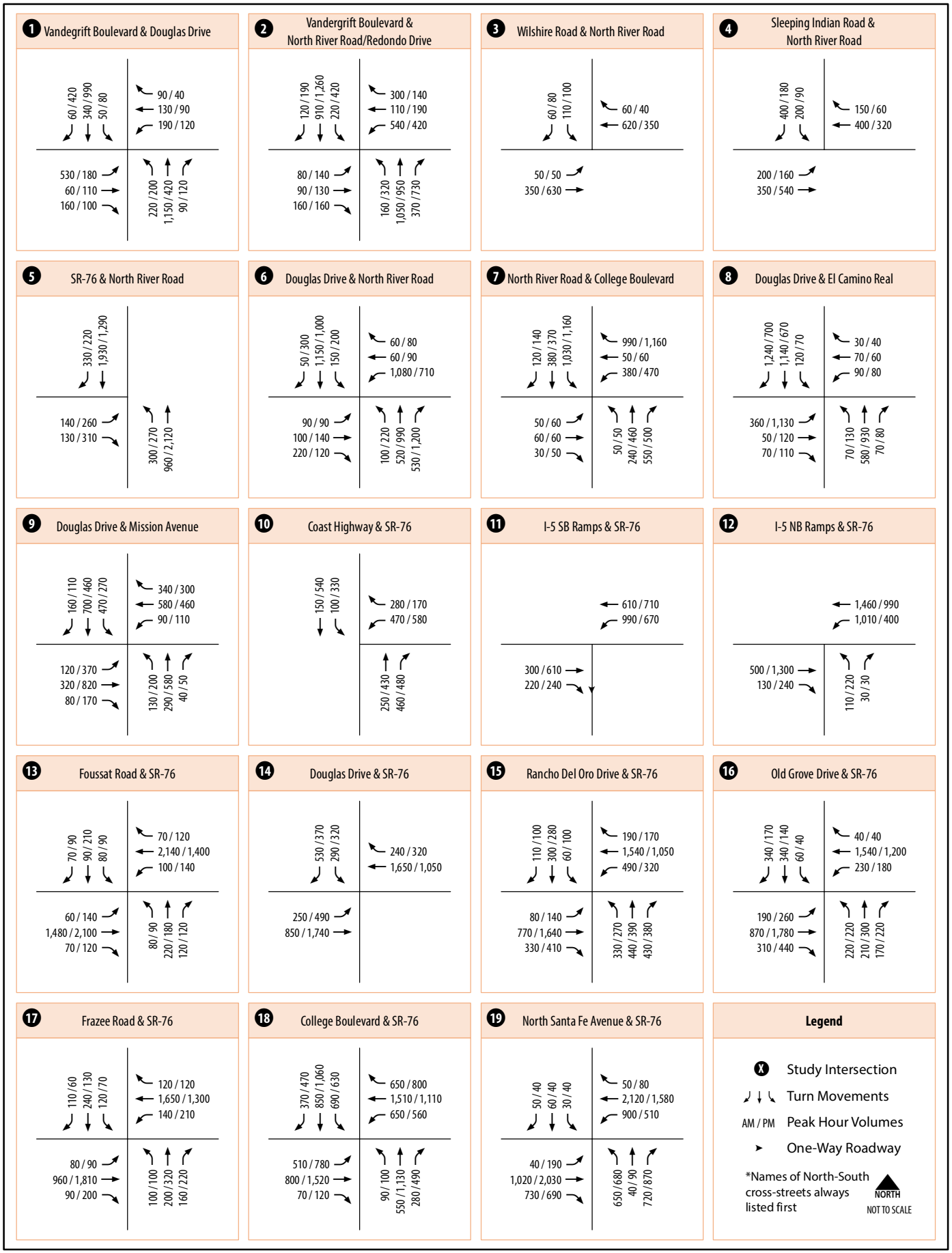
Figure 3.4
Intersection Geometrics (3 of 3)
Oceanside GPU 2050 Conditions



Oceanside General Plan Update
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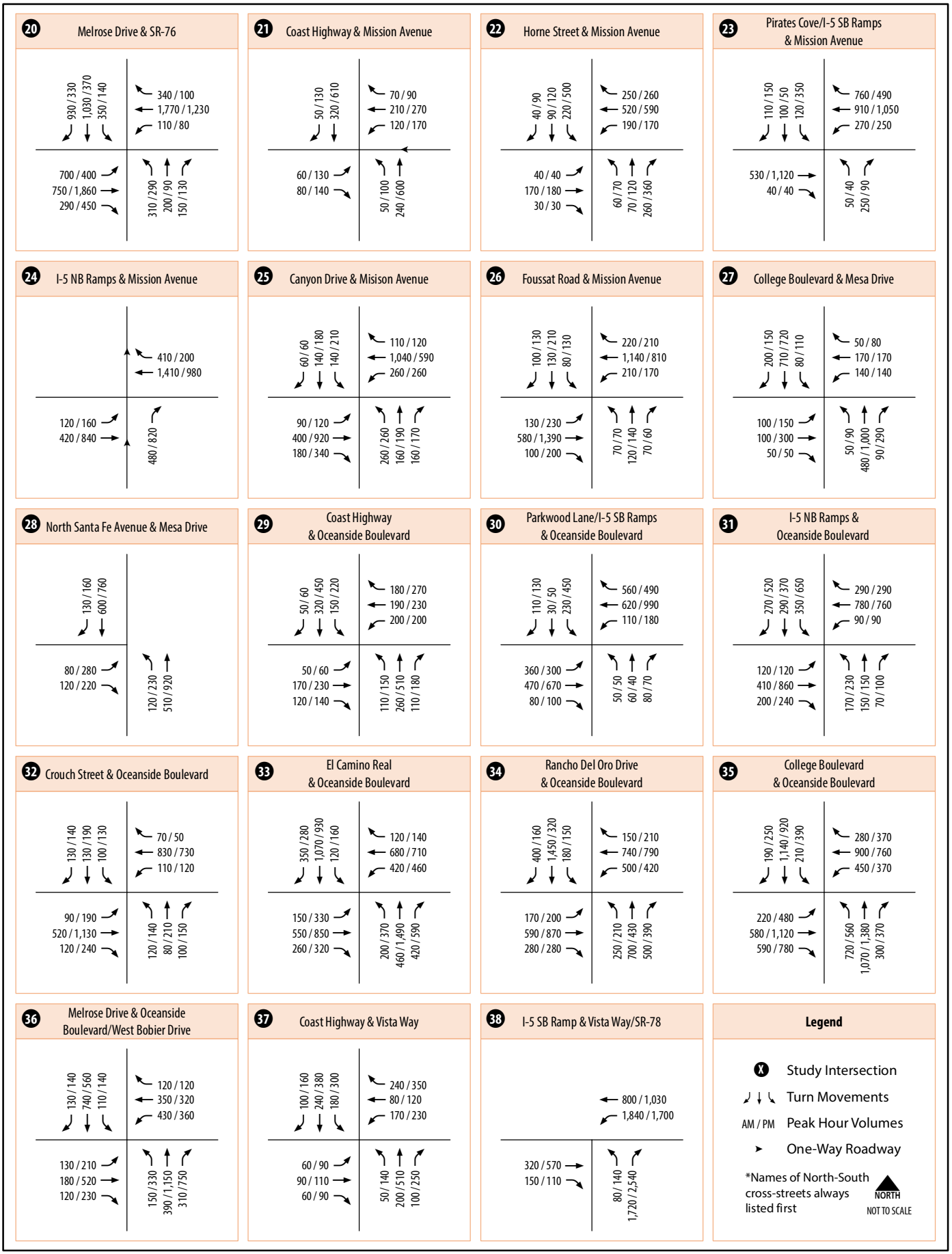
Figure 3.5
AM/PM Peak Intersection Volumes (1 of 3)
Oceanside GPU 2050 Conditions



Oceanside General Plan Update
Transportation Impact Study

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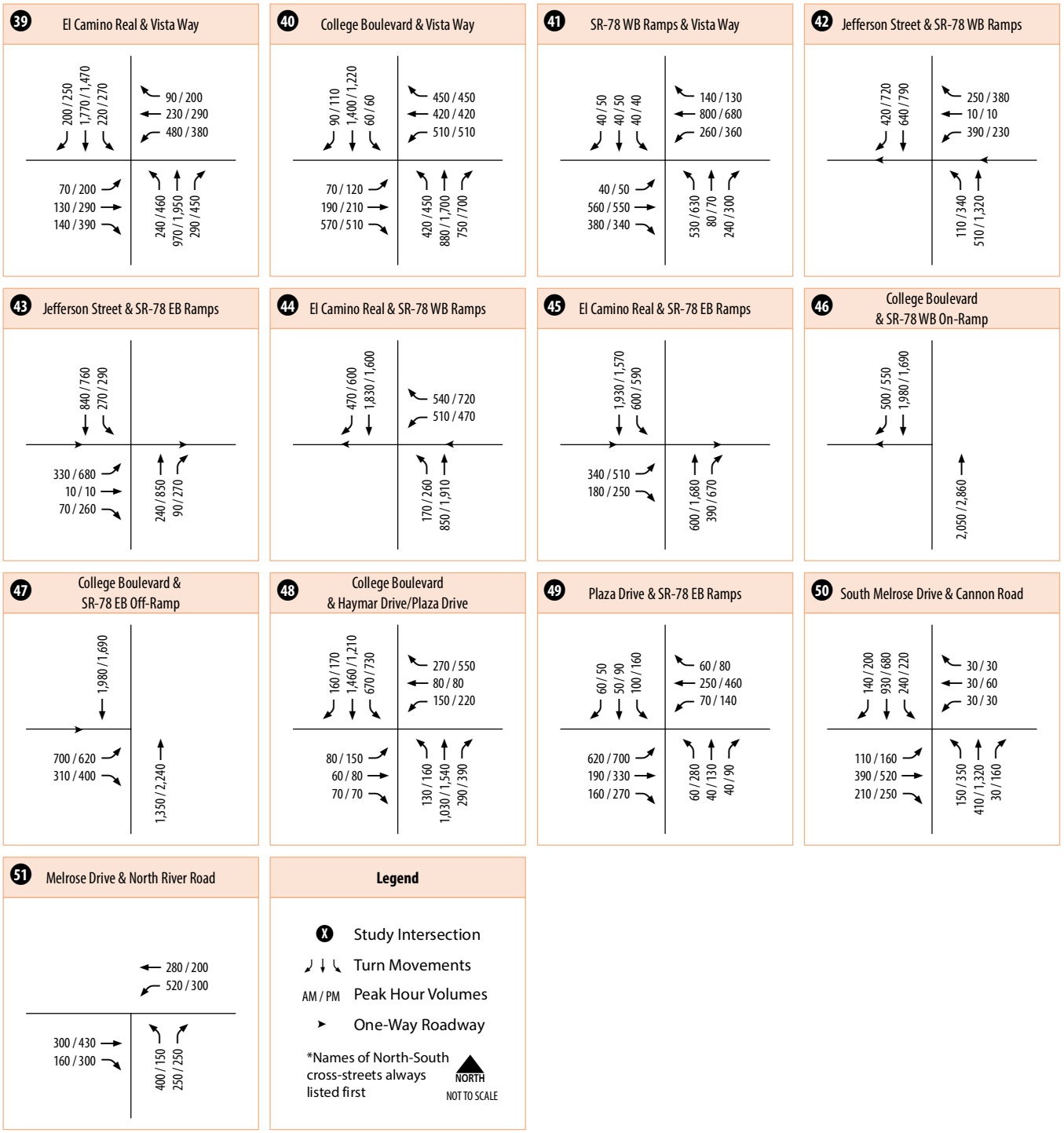
Figure 3.5
AM/PM Peak Intersection Volumes (2 of 3)
Oceanside GPU 2050 Conditions



Oceanside General Plan Update
Transportation Impact Study

C R

Figure 3.5
AM/PM Peak Intersection Volumes (3 of 3)
Oceanside GPU 2050 Conditions

3.3 Traffic Conditions

3.3.6 Roadway Segment LOS Analysis

Table 3.5 presents the Oceanside GPU's roadway classification designations, capacity thresholds, estimated daily traffic volumes, volume to capacity ratios, and resulting levels of service for the 158 study roadway segments. For comparison purposes, level of service information under Existing (June 2021) conditions is also included. Detailed analysis for Existing (2021) conditions can be found in the *City of Oceanside General Plan Update Existing Conditions Report* (June 2021)[1]. **Figure 3.6** presents the Oceanside GPU's roadway segment level of service analysis results.

As shown, all of the Oceanside GPU's Mobility Element roadway segments are anticipated to operate at LOS D or better, with the exception of the following forty-four (44) roadway segments:

S-4. Coast Highway (North), between Northern City Limit and SR-76 - LOS F

S-5. Coast Highway (North), between SR-76 and Mission Avenue - LOS F

S-6. Coast Highway (North), between Mission Avenue and Seagaze Drive - LOS F

S-7. Coast Highway (South), between Seagaze Drive and Wisconsin Avenue - LOS F

S-8. Coast Highway (South), between Wisconsin Avenue and Oceanside Boulevard - LOS F

S-9. Coast Highway (South), between Oceanside Boulevard and Morse Street - LOS F

S-10. Coast Highway (South), between Morse Street and Vista Way - LOS F

S-11. Coast Highway (South), between Vista Way and Southern City Limit - LOS F

S-12. College Boulevard, between N River Road and Adams Street - LOS F

S-13. College Boulevard, between Adams Street and SR-76 - LOS E

S-15. College Boulevard, between Frazee Road and Mesa Drive - LOS E

S-16. College Boulevard, between Mesa Drive and Old Grove Road - LOS E

S-18. College Boulevard, between Avenida De La Plata and Oceanside Boulevard - LOS E

S-19. College Boulevard, between Oceanside Boulevard and Olive Avenue - LOS F

S-20. College Boulevard, between Olive Drive and Thunder Drive - LOS F

S-21. College Boulevard, between Thunder Drive and Marvin Street - LOS F

S-22. College Boulevard, between Marvin Street and Waring Road - LOS F

S-23. College Boulevard, between Waring Road and Vista Way - LOS E

S-24. College Boulevard, between Vista Way and SR-78 EB Off-Ramp - LOS F

S-25. College Boulevard, between SR-78 EB Off-Ramp and Haymar Drive / Plaza Drive - LOS F

S-26. College Boulevard, between Plaza Drive and Lake Boulevard - LOS F

S-27. College Boulevard, between Lake Boulevard and Southern City Limits - LOS F

S-35. Douglas Drive, between N River Road and Old River Street - LOS E

[1] Oceanside Background Report 3 Mobility.pdf

S-36. Douglas Drive, between Old River Street and Pala Road - LOS E

S-37. Douglas Drive, between Pala Road and El Camino Real - LOS F

S-40. El Camino Real, between Douglas Drive and Mission Ave - LOS E

S-42. El Camino Real, between Mesa Drive and Oceanside Boulevard - LOS E

S-43. El Camino Real, between Oceanside Boulevard and Fire Mountain Drive - LOS E

S-44. El Camino Real, between Fire Mountain Drive and Via Las Rosas - LOS E

S-46. El Camino Real, between Vista Way and SR-78 WB Ramps - LOS E

S-51. Foussat Road, between Mission Avenue and Oceanside Boulevard - LOS F

S-62. Lake Boulevard, between Thunder Drive and Sundown Lane - LOS F

S-100. N River Road, between College Boulevard and Vandegrift Boulevard - LOS E

S-111. Oceanside Boulevard, between S Coast Highway and I-5 SB Ramps - LOS F

S-138. Rancho Del Oro Drive, between Vista Del Oro Drive and Vista Way - LOS E

S-139. Rancho Del Oro Drive, between Vista Way and SR-78 - LOS F

S-146. SR-76, between Loretta Street and Canyon Drive - LOS E

S-154. SR-76, between College Boulevard and N Santa Fe Avenue - LOS E

S-155. SR-76, between N Santa Fe Avenue and Guajome Lake Road - LOS E

S-156. SR-76, between Guajome Lake Road and Melrose Drive - LOS E

S-161. Vista Way, between Coast Highway and I-5 SB Ramps - LOS F

S-162. Vista Way, between Jefferson Street and El Camino Real - LOS E

S-163. Vista Way, between El Camino Real and Rancho Del Oro Drive - LOS E

S-165. Vista Way, between College Boulevard and SR-78 WB Ramps - LOS E

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-1	Cannon Road	Western Terminus to Melrose Drive	4-Lane Major Arterial	40,000	13,400	0.34	A	4-Lane Major Arterial	40,000	33,700	0.84	D
S-2	Canyon Drive	SR-76 to Mission Ave	4-Lane Secondary Collector w/o TWLTL	25,000	9,200	0.37	B	2-Lane Collector w/TWLTL	15,000	10,700	0.71	D
S-3	Canyon Drive	Mission Avenue to Oceanside Boulevard	2-Lane Collector w/TWLTL	15,000	8,100	0.54	C	2-Lane Collector w/TWLTL	15,000	12,900	0.86	D
S-4	Coast Highway (N)	Northern City Limit to SR-76	2-Lane Collector w/o TWLTL	10,000	12,000	1.20	**F**	2-Lane Collector w/o TWLTL	10,000	15,000	1.50	**F**
S-5	Coast Highway (N)	SR-76 to Mission Avenue	4-Lane Secondary Collector w/o TWLTL	25,000	18,300	0.73	D	2-Lane Collector w/o TWLTL	10,000	27,400	2.74	**F**
S-6	Coast Highway (N)	Mission Avenue to Seagaze Drive	4-Lane Secondary Collector w/o TWLTL	25,000	24,300	0.97	**E**	2-Lane Collector w/o TWLTL	10,000	32,500	3.25	**F**
S-7	Coast Highway (S)	Seagaze Drive to Wisconsin Avenue	4-Lane Secondary Collector w/o TWLTL	25,000	24,300	0.97	**E**	2-Lane Collector w/o TWLTL	10,000	32,500	3.25	**F**
S-8	Coast Highway (S)	Wisconsin Avenue to Oceanside Boulevard	4-Lane Secondary Collector w/o TWLTL	25,000	22,100	0.88	**E**	2-Lane Collector w/o TWLTL	10,000	24,400	2.44	**F**
S-9	Coast Highway (S)	Oceanside Boulevard to Morse Street	2-Lane Collector w/TWLTL	15,000	20,400	1.36	**F**	2-Lane Collector w/o TWLTL	10,000	25,700	2.57	**F**
S-10	Coast Highway (S)	Morse Street to Vista Way	4-Lane Secondary Collector w/o TWLTL	25,000	19,600	0.78	D	4-Lane Secondary Collector w/o TWLTL	25,000	25,500	1.02	**F**
S-11	Coast Highway (S)	Vista Way to Southern City Limit	2-Lane Collector w/TWLTL	15,000	17,900	1.19	**F**	2-Lane Collector w/TWLTL	15,000	21,600	1.44	**F**
S-12	College Boulevard	N River Road to Adams Street	4-Lane Major Arterial	40,000	46,000	1.15	**F**	4-Lane Major Arterial	40,000	47,600	1.19	**F**
S-13	College Boulevard	Adams Street to SR-76	6 Lane Major Arterial	50,000	46,000	0.92	**E**	6 Lane Major Arterial	50,000	48,600	0.97	**E**
S-14	College Boulevard	SR-76 to Frazee Road	4-Lane Major Arterial	40,000	30,300	0.76	D	4-Lane Major Arterial	40,000	34,400	0.86	D
S-15	College Boulevard	Frazee Road to Mesa Drive	4-Lane Major Arterial	40,000	32,700	0.82	D	4-Lane Major Arterial	40,000	37,500	0.94	**E**
S-16	College Boulevard	Mesa Drive to Old Grove Road	4-Lane Major Arterial	40,000	29,900	0.75	C	4-Lane Major Arterial	40,000	35,800	0.90	**E**
S-17	College Boulevard	Old Grove Road to Avenida De La Plata	4-Lane Major Arterial	40,000	38,300	0.96	**E**	6 Lane Major Arterial	50,000	44,500	0.89	D
S-18	College Boulevard	Avenida De La Plata to Oceanside Boulevard	4-Lane Major Arterial	40,000	38,200	0.96	**E**	6 Lane Major Arterial	50,000	47,400	0.95	**E**

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-19	College Boulevard	Oceanside Boulevard to Olive Avenue	4-Lane Major Arterial	40,000	50,000	1.25	**F**	6 Lane Major Arterial	50,000	60,500	1.21	**F**
S-20	College Boulevard	Olive Drive to Thunder Drive	4-Lane Major Arterial	40,000	36,000	0.90	**E**	4-Lane Major Arterial	40,000	46,700	1.17	**F**
S-21	College Boulevard	Thunder Drive to Marvin Street	4-Lane Major Arterial	40,000	31,800	0.80	D	4-Lane Major Arterial	40,000	41,400	1.04	**F**
S-22	College Boulevard	Marvin Street to Waring Road	4-Lane Major Arterial	40,000	32,800	0.82	D	4-Lane Major Arterial	40,000	41,800	1.05	**F**
S-23	College Boulevard	Waring Road to Vista Way	4-Lane Major Arterial	40,000	44,300	1.11	**F**	6 Lane Major Arterial	50,000	46,500	0.93	**E**
S-24	College Boulevard	Vista Way to SR-78 EB Off-Ramp	5-Lane Major Arterial	45,000	58,500	1.30	**F**	6 Lane Major Arterial	50,000	62,300	1.25	**F**
S-25	College Boulevard	SR-78 EB Off-Ramp to Haymar Drive / Plaza Drive	6 Lane Major Arterial	50,000	55,800	1.12	**F**	6 Lane Major Arterial	50,000	61,400	1.23	**F**
S-26	College Boulevard	Plaza Drive to Lake Boulevard	6 Lane Major Arterial	50,000	40,800	0.82	D	6 Lane Major Arterial	50,000	54,800	1.10	**F**
S-27	College Boulevard	Lake Boulevard to Southern City Limits	4-Lane Major Arterial	40,000	40,500	1.01	**F**	4-Lane Major Arterial	40,000	48,000	1.20	**F**
S-28	Crouch Street	Canyon Drive to Oceanside Boulevard	2-Lane Collector w/TWLTL	15,000	7,100	0.47	C	2-Lane Collector w/TWLTL	15,000	8,800	0.59	C
S-29	Crouch Street	Oceanside Boulevard to Skylark Drive	2-Lane Collector w/TWLTL	15,000	10,900	0.73	D	2-Lane Collector w/TWLTL	15,000	12,500	0.83	D
S-30	Crouch Street	Skylark Drive to Grandview Street	2-Lane Collector w/o TWLTL	10,000	5,450	0.55	B	2-Lane Collector w/o TWLTL	10,000	6,250	0.63	C
S-31	Douglas Drive	Vandegrift Boulevard to Via Malaguena	4-Lane Secondary Collector w/o TWLTL	25,000	7,900	0.32	A	2-Lane Collector w/TWLTL	15,000	9,000	0.6	C
S-32	Douglas Drive	Via Malaguena to Cardiff Bay Drive	2-Lane Major Arterial	20,000	7,900	0.40	B	2-Lane Major Arterial	20,000	9,000	0.45	B
S-33	Douglas Drive	Cardiff Bay Drive to Festival Drive	3-Lane Major Arterial	30,000	10,500	0.35	A	3-Lane Major Arterial	30,000	12,100	0.40	B
S-34	Douglas Drive	Festival Drive to N River Road	4-Lane Major Arterial	40,000	10,500	0.26	A	4-Lane Major Arterial	40,000	24,000	0.60	C
S-35	Douglas Drive	N River Road to Old River Street	4-Lane Major Arterial	40,000	35,100	0.88	**E**	4-Lane Major Arterial	40,000	38,600	0.97	**E**
S-36	Douglas Drive	Old River Street to Pala Road	4-Lane Major Arterial	40,000	33,800	0.85	D	4-Lane Major Arterial	40,000	39,900	1.0	**E**

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-37	Douglas Drive	Pala Road to El Camino Real	4-Lane Major Arterial	40,000	35,000	0.88	**E**	4-Lane Major Arterial	40,000	40,500	1.01	**F**
S-38	Douglas Drive	El Camino Real to Mission Ave	4-Lane Major Arterial	40,000	24,700	0.62	C	4-Lane Major Arterial	40,000	27,600	0.69	C
S-39	Douglas Drive	Mission Avenue to SR-76	4-Lane Major Arterial	40,000	24,700	0.62	C	4-Lane Major Arterial	40,000	25,200	0.63	C
S-40	El Camino Real	Douglas Drive to Mission Ave	4-Lane Secondary Collector w/TWLTL	30,000	22,600	0.75	D	4-Lane Secondary Collector w/TWLTL	30,000	26,700	0.89	**E**
S-41	El Camino Real	Mission Avenue to Mesa Drive	4-Lane Major Arterial	40,000	25,200	0.63	C	4-Lane Major Arterial	40,000	34,500	0.86	D
S-42	El Camino Real	Mesa Drive to Oceanside Boulevard	4-Lane Major Arterial	40,000	38,300	0.96	**E**	5-Lane Major Arterial	45,000	42,300	0.94	**E**
S-43	El Camino Real	Oceanside Boulevard to Fire Mountain Drive	6-Lane Prime Arterial	60,000	42,600	0.71	C	6-Lane Prime Arterial	60,000	56,800	0.95	**E**
S-44	El Camino Real	Fire Mountain Drive to Via Las Rosas	6-Lane Prime Arterial	60,000	42,600	0.71	C	6-Lane Prime Arterial	60,000	56,700	0.95	**E**
S-45	El Camino Real	Via Las Rosas to Vista Way	6-Lane Prime Arterial	60,000	43,700	0.73	C	6-Lane Prime Arterial	60,000	53,800	0.90	D
S-46	El Camino Real	Vista Way to SR-78 WB Ramps	6-Lane Prime Arterial	60,000	52,000	0.87	D	6-Lane Prime Arterial	60,000	57,900	0.97	**E**
S-47	El Camino Real	SR-78 WB Ramps to SR-78 EB Ramps	6-Lane Prime Arterial	60,000	46,900	0.78	C	6-Lane Prime Arterial	60,000	50,500	0.84	D
S-48	Emerald Drive	Lake Boulevard to Sunset Drive	4-Lane Secondary Collector w/TWLTL	30,000	6,724	0.22	A	4-Lane Secondary Collector w/TWLTL	30,000	8,500	0.28	A
S-49	Foussat Road	Pala Road to SR-76	4-Lane Secondary Collector w/o TWLTL	25,000	6,300	0.25	A	4-Lane Secondary Collector w/o TWLTL	25,000	10,400	0.42	B
S-50	Foussat Road	SR-76 to Mission Ave	5-Lane Major Arterial	45,000	10,000	0.22	A	5-Lane Major Arterial	45,000	17,200	0.38	A
S-51	Foussat Road	Mission Avenue to Oceanside Boulevard	2-Lane Collector w/o TWLTL	10,000	7,300	0.73	C	2-Lane Collector w/o TWLTL	10,000	11,400	1.14	**F**
S-52	Frazee Road	Old Grove Road to SR-76	4-Lane Major Arterial	40,000	5,300	0.13	A	4-Lane Major Arterial	40,000	7,000	0.18	A
S-53	Frazee Road	SR-76 to College Boulevard	4-Lane Major Arterial	40,000	6,200	0.16	A	4-Lane Major Arterial	40,000	9,000	0.23	A
S-54	Frazee Road	College Boulevard to Sagewood Drive	2-Lane Collector	10,000	2,500	0.25	A	2-Lane Collector	10,000	8,500	0.85	D

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-55	Horne Street	Civic Center Drive to Pier View Way	2-Lane Collector w/o TWLTL	10,000	5,900	0.59	C	2-Lane Collector w/o TWLTL	10,000	7,800	0.78	D
S-56	Horne Street	Pier View Way to Mission Avenue	4-Lane Secondary Collector w/o TWLTL	25,000	9,400	0.38	B	4-Lane Secondary Collector w/o TWLTL	25,000	12,000	0.48	B
S-57	Horne Street	Mission Avenue to Seagaze Drive	2-Lane Collector w/o TWLTL	10,000	5,000	0.5	B	2-Lane Collector w/o TWLTL	10,000	6,500	0.65	C
S-58	Jefferson Street	Vista Way to SR-78 WB Ramps	4-Lane Major Arterial	40,000	16,200	0.41	B	4-Lane Major Arterial	40,000	22,000	0.55	C
S-59	Jefferson Street	SR-78 WB Ramps to SR-78 EB Ramps	4-Lane Major Arterial	40,000	27,100	0.68	C	4-Lane Major Arterial	40,000	33,400	0.84	D
S-60	Jefferson Street	SR-78 EB Ramps to Southern City Limits	4-Lane Major Arterial	40,000	11,000	0.28	A	4-Lane Major Arterial	40,000	13,900	0.35	A
S-61	Lake Boulevard	College Boulevard to Thunder Drive	4-Lane Secondary Collector w/TWLTL	30,000	14,900	0.50	C	4-Lane Secondary Collector w/TWLTL	30,000	18,600	0.62	C
S-62	Lake Boulevard	Thunder Drive to Sundown Lane	2-Lane Collector w/TWLTL	15,000	14,800	0.99	**E**	2-Lane Collector w/TWLTL	15,000	18,500	1.23	**F**
S-63	Lake Boulevard	Sundown Lane to Sky Haven Lane	4-Lane Secondary Collector w/TWLTL	30,000	14,800	0.49	C	4-Lane Secondary Collector w/TWLTL	30,000	18,500	0.62	C
S-64	Lake Boulevard	Sky Haven Lane to Alameda Drive	4-Lane Secondary Collector w/TWLTL	30,000	13,400	0.45	B	4-Lane Secondary Collector w/TWLTL	30,000	16,600	0.55	C
S-65	Lake Boulevard	Alameda Drive to Cannon Road	4-Lane Secondary Collector w/TWLTL	30,000	13,700	0.46	B	4-Lane Secondary Collector w/TWLTL	30,000	16,900	0.56	C
S-66	Marron Road	Western City Limit to College Boulevard	3-Lane Major Arterial	30,000	13,300	0.44	B	3-Lane Major Arterial	30,000	22,000	0.73	C
S-67	Melrose Drive	Northern terminus to SR-76	4-Lane Major Arterial	40,000	3,900	0.10	A	4-Lane Major Arterial	40,000	17,800	0.45	B
S-68	Melrose Drive	SR-76 to Old Ranch Road	5-Lane Major Arterial	45,000	9,700	0.22	A	5-Lane Major Arterial	45,000	11,700	0.26	A
S-69	Melrose Drive	Old Ranch Road to Spur Avenue	4-Lane Major Arterial	40,000	9,700	0.24	A	4-Lane Major Arterial	40,000	13,700	0.34	A
S-70	Melrose Drive	N Santa Fe Drive to Sagewood Drive	2-Lane Collector w/o TWLTL	10,000	17,800	1.78	**F**	4-Lane Major Arterial	40,000	20,200	0.51	B
S-71	Melrose Drive	Sagewood Drive to Meadowbrook Drive	5-Lane Major Arterial	45,000	18,800	0.42	B	5-Lane Major Arterial	45,000	26,900	0.60	C
S-72	Melrose Drive	Meadowbrook Drive to Oceanside Boulevard	5-Lane Major Arterial	45,000	20,600	0.46	B	5-Lane Major Arterial	45,000	28,400	0.63	C

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-73	Melrose Drive	Oceanside Boulevard to Southern City Limits	5-Lane Major Arterial	45,000	20,200	0.45	B	5-Lane Major Arterial	45,000	38,400	0.85	D
S-74	Melrose Drive	City Limits to Cannon Road	6-Lane Prime Arterial	60,000	32,084	0.53	B	6-Lane Prime Arterial	60,000	51,300	0.86	D
S-75	Melrose Drive	Cannon Road to City Limits	6-Lane Prime Arterial	60,000	34,896	0.58	B	6-Lane Prime Arterial	60,000	41,400	0.69	C
S-76	Mesa Drive	Mission Avenue to Foussat Road	2-Lane Collector w/o TWLTL	10,000	4,400	0.44	B	2-Lane Collector w/o TWLTL	10,000	8,400	0.84	D
S-77	Mesa Drive	Foussat Road to El Camino Real	2-Lane Collector w/TWLTL	15,000	5,400	0.36	B	2-Lane Collector w/TWLTL	15,000	6,600	0.44	B
S-78	Mesa Drive	El Camino Real to Rancho Del Oro Drive	4-Lane Secondary Collector w/TWLTL	30,000	14,800	0.49	C	4-Lane Secondary Collector w/TWLT L	30,000	15,800	0.53	C
S-79	Mesa Drive	Rancho Del Oro Drive to Ivey Ranch Road	4-Lane Secondary Collector w/TWLTL	30,000	12,800	0.43	B	4-Lane Secondary Collector w/TWLTL	30,000	14,800	0.49	C
S-80	Mesa Drive	Ivey Ranch Road to Via Rancho Road	3-Lane Secondary Collector w/TWLTL	22,500	11,000	0.49	C	3-Lane Secondary Collector w/TWLTL	22,500	12,000	0.53	C
S-81	Mesa Drive	Via Rancho Road to Old Grove Road	4-Lane Secondary Collector w/o TWLTL	25,000	14,300	0.57	C	4-Lane Secondary Collector w/o TWLTL	25,000	15,900	0.64	C
S-82	Mesa Drive	Old Grove Road to College Boulevard	4-Lane Secondary Collector w/TWLTL	30,000	12,700	0.42	B	4-Lane Secondary Collector w/TWLTL	30,000	14,400	0.48	C
S-83	Mesa Drive	College Boulevard to N Santa Fe Drive	4-Lane Secondary Collector w/TWLTL	30,000	11,200	0.37	B	4-Lane Secondary Collector w/TWLTL	30,000	13,500	0.45	B
S-84	Mission Avenue	N Pacific Street to N Coast Highway	4-Lane Secondary Collector w/o TWLTL	25,000	8,500	0.34	A	4-Lane Secondary Collector w/o TWLTL	25,000	9,400	0.38	B
S-85	Mission Avenue	N Coast Highway to N Clementine Street	2-Ln Collector (One-Way)[1]	17,500	10,000	0.57	C	2-Ln Collector (One-Way)[1]	17,500	10,200	0.58	C
S-86	Mission Avenue	N Clementine Street to Horne Street	4-Lane Secondary Collector w/o TWLTL	25,000	10,000	0.40	B	4-Lane Secondary Collector w/o TWLTL	25,000	13,000	0.52	C
S-87	Mission Avenue	Horne Street to I-5 SB Ramps	4-Lane Major Arterial	40,000	22,300	0.56	C	4-Lane Major Arterial	40,000	23,400	0.59	C
S-88	Mission Avenue	I-5 SB Ramps to I-5 NB Ramps	4-Lane Major Arterial	40,000	28,900	0.72	C	4-Lane Major Arterial	40,000	32,300	0.81	D
S-89	Mission Avenue	I-5 NB Ramps to Canyon Drive	4-Lane Major Arterial	40,000	28,900	0.72	C	4-Lane Major Arterial	40,000	33,600	0.84	D
S-90	Mission Avenue	Canyon Drive to Mesa Drive	4-Lane Major Arterial	40,000	24,000	0.60	C	4-Lane Major Arterial	40,000	28,300	0.71	C

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-91	Mission Avenue	Mesa Drive to Foussat Road	4-Lane Major Arterial	40,000	22,900	0.57	C	4-Lane Major Arterial	40,000	30,000	0.75	D
S-92	Mission Avenue	Foussat Road to El Camino Real	4-Lane Major Arterial	40,000	23,800	0.60	C	4-Lane Major Arterial	40,000	34,900	0.87	D
S-93	Mission Avenue	El Camino Real to Douglas Drive	4-Lane Major Arterial	40,000	22,000	0.55	C	4-Lane Major Arterial	40,000	29,300	0.73	C
S-94	Mission Avenue	Douglas Drive to Rancho Del Oro Drive	4-Lane Major Arterial	40,000	25,000	0.63	C	4-Lane Major Arterial	40,000	28,600	0.72	C
S-95	Mission Avenue	Rancho Del Oro Drive to Old Grove Road	4-Lane Major Arterial	40,000	14,200	0.36	A	4-Lane Major Arterial	40,000	16,500	0.41	B
S-96	Mission Avenue	Old Grove Road to Frazee Road	4-Lane Major Arterial	40,000	10,000	0.25	A	4-Lane Major Arterial	40,000	11,800	0.30	A
S-97	North Avenue	Olive Drive to Temple Heights Drive	2-Lane Collector w/TWLTL	15,000	6,779	0.45	B	4-Lane Secondary Collector w/TWLTL	30,000	19,200	0.64	C
S-98	North Avenue	Temple Heights Drive to Melrose Drive	2-Lane Collector w/TWLTL	15,000	4,262	0.28	A	4-Lane Secondary Collector w/TWLTL	30,000	20,800	0.69	D
S-99	N River Road	Douglas Drive to College Boulevard	4-Lane Major Arterial	40,000	23,100	0.58	C	4-Lane Major Arterial	40,000	24,400	0.61	C
S-100	N River Road	College Boulevard to Vandegrift Boulevard	5-Lane Major Arterial	45,000	39,700	0.88	D	5-Lane Major Arterial	45,000	44,300	0.98	**E**
S-101	N River Road	Vandegrift Boulevard to North River Circle	4-Lane Major Arterial	40,000	15,000	0.38	B	4-Lane Major Arterial	40,000	17,900	0.45	B
S-102	N River Road	North River Circle to Stallion Drive	2-Lane Collector w/TWLTL	15,000	14,600	0.97	**E**	4-Lane Secondary Collector w/TWLTL	30,000	16,600	0.55	C
S-103	N River Road	Stallion Drive to Wilshire Road	2-Lane Collector w/o TWLTL	10,000	11,000	1.10	**F**	4-Lane Secondary Collector w/o TWLTL	25,000	14,600	0.58	C
S-104	N River Road	Wilshire Road to Sleeping Indian Road	2-Lane Collector w/o TWLTL	10,000	10,800	1.08	**F**	4-Lane Major Arterial	40,000	12,000	0.30	A
S-105	N River Road	Sleeping Indian Road to Via Puerta Del Sol	2-Lane Collector w/o TWLTL	10,000	8,500	0.85	D	2-Lane Collector w/TWLTL	15,000	9,800	0.65	C
S-106	N River Road	Via Puerta Del Sol to SR-76	2-Lane Collector w/o TWLTL	10,000	8,500	0.85	D	2-Lane Collector w/TWLTL	15,000	9,800	0.65	C
S-107	N Santa Fe Avenue	SR-76 to Mesa Drive	4-Lane Major Arterial	40,000	24,600	0.62	C	4-Lane Major Arterial	40,000	28,400	0.71	C
S-108	N Santa Fe Avenue	Mesa Drive to N Melrose Drive	4-Lane Major Arterial	40,000	26,300	0.66	C	4-Lane Major Arterial	40,000	29,400	0.74	C

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-109	N Santa Fe Avenue	N Melrose Drive to Eastern City Limits	3-Lane Major Arterial	30,000	15,400	0.51	B	3-Lane Major Arterial	30,000	22,400	0.75	C
S-110	Oceanside Boulevard	S Pacific Street to S Coast Highway	2-Lane Collector w/o TWLTL	10,000	5,400	0.54	B	2-Lane Collector w/o TWLTL	10,000	8,300	0.83	D
S-111	Oceanside Boulevard	S Coast Highway to I-5 SB Ramps	4-Lane Secondary Collector w/o TWLTL	25,000	21,700	0.87	D	4-Lane Secondary Collector w/o TWLTL	25,000	26,700	1.07	**F**
S-112	Oceanside Boulevard	I-5 SB Ramps to I-5 NB Ramps	4-Lane Secondary Collector w/o TWLTL	25,000	26,500	1.06	**F**	4-Lane Major Arterial	40,000	30,400	0.76	D
S-113	Oceanside Boulevard	I-5 NB Ramps to Goat Hill Drive	4-Lane Secondary Collector w/TWLTL	30,000	31,300	1.04	**F**	4-Lane Major Arterial	40,000	33,500	0.84	D
S-114	Oceanside Boulevard	Goat Hill Drive to Crouch Street	4-Lane Secondary Collector w/TWLTL	30,000	29,800	0.99	**E**	4-Lane Major Arterial	40,000	33,200	0.83	D
S-115	Oceanside Boulevard	Crouch Street to Foussat Road	4-Lane Secondary Collector w/TWLTL	30,000	31,300	1.04	**F**	4-Lane Major Arterial	40,000	34,200	0.86	D
S-116	Oceanside Boulevard	Foussat Road to El Camino Real	4-Lane Secondary Collector w/TWLTL	30,000	26,500	0.88	**E**	4-Lane Major Arterial	40,000	32,200	0.81	D
S-117	Oceanside Boulevard	El Camino Real to Rancho Del Oro Drive	6-Lane Prime Arterial	60,000	29,900	0.50	B	6 Lane Major Arterial	50,000	36,900	0.74	C
S-118	Oceanside Boulevard	Rancho Del Oro Drive to College Boulevard	6-Lane Prime Arterial	60,000	29,700	0.50	B	6 Lane Major Arterial	50,000	43,000	0.86	D
S-119	Oceanside Boulevard	College Boulevard to Arroyo Avenue	5-Lane Major Arterial	45,000	25,400	0.56	C	5-Lane Major Arterial	45,000	34,000	0.76	C
S-120	Oceanside Boulevard	Arroyo Avenue to Temple Heights Drive	4-Lane Major Arterial	40,000	25,400	0.64	C	4-Lane Major Arterial	40,000	29,200	0.73	C
S-121	Oceanside Boulevard	Temple Heights Drive to N Melrose Drive	4-Lane Major Arterial	40,000	25,400	0.64	C	4-Lane Major Arterial	40,000	28,400	0.71	C
S-122	Oceanside Boulevard	N Melrose Drive to Eastern City Limits	4-Lane Major Arterial	40,000	17,800	0.45	B	4-Lane Major Arterial	40,000	27,000	0.68	C
S-123	Old Grove Road	Frazee Road to SR-76	4-Lane Major Arterial	40,000	7,500	0.19	A	4-Lane Major Arterial	40,000	7,700	0.19	A
S-124	Old Grove Road	SR-76 to Mission Avenue	4-Lane Major Arterial	40,000	10,800	0.27	A	4-Lane Major Arterial	40,000	12,200	0.31	A
S-125	Old Grove Road	Mission Avenue to Mesa Drive	4-Lane Major Arterial	40,000	11,900	0.30	A	4-Lane Major Arterial	40,000	16,000	0.40	B
S-126	Old Grove Road	Mesa Drive to College Boulevard	4-Lane Major Arterial	40,000	15,100	0.38	B	4-Lane Major Arterial	40,000	20,400	0.51	B

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-127	Olive Drive	College Boulevard to Emerald Drive	4-Lane Secondary Collector w/TWLTL	30,000	19,697	0.66	C	4-Lane Secondary Collector w/TWLTL	30,000	24,000	0.80	D
S-128	Pala Road	Foussat Road to Los Arbolitos Boulevard	Does Not Exist Under Existing Conditions					4-Lane Secondary Collector w/TWLTL	30,000	8,700	0.29	A
S-129	Pala Road	Los Arbolitos Boulevard to Douglas Drive	2-Lane Collector w/TWLTL	15,000	3,577	0.24	A	4-Lane Secondary Collector w/TWLTL	30,000	10,000	0.33	B
S-130	Plaza Drive	College Boulevard to SR-78 EB Ramps	4-Lane Major Arterial	40,000	21,000	0.53	C	4-Lane Major Arterial	40,000	26,500	0.66	C
S-131	Plaza Drive	SR-78 EB Ramps to Thunder Drive	3-Lane Secondary Collector w/TWLTL	22,500	13,200	0.59	C	3-Lane Secondary Collector w/TWLTL	22,500	14,300	0.64	C
S-132	Rancho Del Oro Drive	Mission Avenue to SR-76	4-Lane Major Arterial	40,000	8,900	0.22	A	4-Lane Major Arterial	40,000	11,500	0.29	A
S-133	Rancho Del Oro Drive	SR-76 to Mesa Drive	4-Lane Major Arterial	40,000	16,100	0.40	B	4-Lane Major Arterial	40,000	21,400	0.54	C
S-134	Rancho Del Oro Drive	Mesa Drive to Ocean Ranch Boulevard	4-Lane Major Arterial	40,000	15,100	0.38	B	4-Lane Major Arterial	40,000	20,300	0.51	B
S-135	Rancho Del Oro Drive	Ocean Ranch Boulevard to Senior Center Drive	4-Lane Major Arterial	40,000	17,200	0.43	B	4-Lane Major Arterial	40,000	21,100	0.53	C
S-136	Rancho Del Oro Drive	Senior Center Drive to Oceanside Boulevard	4-Lane Major Arterial	40,000	18,200	0.46	B	4-Lane Major Arterial	40,000	23,500	0.59	C
S-137	Rancho Del Oro Drive	Oceanside Boulevard to Vista Del Oro Drive	4-Lane Major Arterial	40,000	13,400	0.34	A	4-Lane Major Arterial	40,000	33,000	0.83	D
S-138	Rancho Del Oro Drive	Vista Del Oro Drive to Vista Way	4-Lane Major Arterial	40,000	13,400	0.34	A	4-Lane Major Arterial	40,000	36,000	0.90	**E**
S-139	Rancho Del Oro Drive	Vista Way to SR-78	Does Not Exist Under Existing Conditions					4-Lane Major Arterial	40,000	40,000	1.00	**F**
S-140	Seagaze Drive	S Coast Highway to S Clementine Street	2-Ln Collector (One-Way)[1]	17,500	4,400	0.25	A	2-Ln Collector (One-Way)[1]	17,500	5,500	0.31	A
S-141	Seagaze Drive	S Clementine Street to Horne Street	2-Lane Collector w/o TWLTL	10,000	4,400	0.44	B	2-Lane Collector w/o TWLTL	10,000	5,500	0.55	C
S-142	Sleeping Indian Road	Northern City Limit to N River Road	2-Lane Collector w/o TWLTL	10,000	2,200	0.22	A	2-Lane Collector w/o TWLTL	10,000	7,500	0.75	D
S-143	SR-76	N Coast Highway to I-5 SB Ramps	4-Lane Expressway	60,000	17,400	0.29	A	4-Lane Expressway	60,000	20,300	0.34	A
S-144	SR-76	I-5 SB Ramps to I-5 NB Ramps	4-Lane Expressway	60,000	33,800	0.56	B	4-Lane Expressway	60,000	37,900	0.63	C

Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-145	SR-76	I-5 NB Ramps to Loretta Street	4-Lane Expressway	60,000	53,000	0.88	D	4-Lane Expressway	60,000	53,500	0.89	D
S-146	SR-76	Loretta Street to Canyon Drive	4-Lane Expressway	60,000	53,000	0.88	D	4-Lane Expressway	60,000	59,400	0.99	**E**
S-147	SR-76	Canyon Drive to Foussat Road	4-Lane Expressway	60,000	51,000	0.85	D	4-Lane Expressway	60,000	52,600	0.88	D
S-148	SR-76	Foussat Road to Douglas Drive	4-Lane Expressway	60,000	51,000	0.85	D	4-Lane Expressway	60,000	52,800	0.88	D
S-149	SR-76	Douglas Drive to Rancho Del Oro Drive	4-Lane Expressway	60,000	47,500	0.79	C	4-Lane Expressway	60,000	51,900	0.87	D
S-150	SR-76	Rancho Del Oro Drive to Old Grove Road	4-Lane Expressway	60,000	44,000	0.73	C	4-Lane Expressway	60,000	50,300	0.84	D
S-151	SR-76	Old Grove Road to Frazee Road	4-Lane Expressway	60,000	47,000	0.78	C	4-Lane Expressway	60,000	49,200	0.82	C
S-152	SR-76	Frazee Road to Town Center Drive	4-Lane Expressway	60,000	47,000	0.78	C	4-Lane Expressway	60,000	50,100	0.84	D
S-153	SR-76	Town Center Drive to College Boulevard	5-Lane Expressway	66,667	47,000	0.71	C	5-Lane Expressway	66,667	49,500	0.74	C
S-154	SR-76	College Boulevard to N Santa Fe Avenue	4-Lane Expressway	60,000	47,500	0.79	C	4-Lane Expressway	60,000	58,000	0.97	**E**
S-155	SR-76	N Santa Fe Avenue to Guajome Lake Road	4-Lane Expressway	60,000	51,000	0.85	D	4-Lane Expressway	60,000	56,500	0.94	**E**
S-156	SR-76	Guajome Lake Road to Melrose Drive	4-Lane Expressway	60,000	51,000	0.85	D	4-Lane Expressway	60,000	57,300	0.96	**E**
S-157	SR-76	Melrose Drive to East Vista Way	4-Lane Expressway	60,000	51,000	0.85	D	4-Lane Expressway	60,000	53,500	0.89	D
S-158	SR-76	East Vista Way to N River Road	4-Lane Expressway	60,000	39,500	0.66	C	4-Lane Expressway	60,000	49,000	0.82	C
S-159	Vandegrift Boulevard	Northern City Limit to Douglas Drive	5-Lane Major Arterial	45,000	21,700	0.48	B	4-Lane Major Arterial	40,000	23,200	0.58	C
S-160	Vandegrift Boulevard	Douglas Drive to N River Road	5-Lane Major Arterial	45,000	28,500	0.63	C	4-Lane Major Arterial	40,000	34,600	0.87	D
S-161	Vista Way	Coast Highway to I-5 SB Ramps	2-Lane Collector w/TWLTL	15,000	18,000	1.20	**F**	2-Lane Collector w/TWLTL	15,000	20,200	1.35	**F**
S-162	Vista Way	Jefferson Street to El Camino Real	4-Lane Secondary Collector w/TWLTL	30,000	23,200	0.77	D	4-Lane Secondary Collector w/TWLTL	30,000	25,000	0.83	**E**

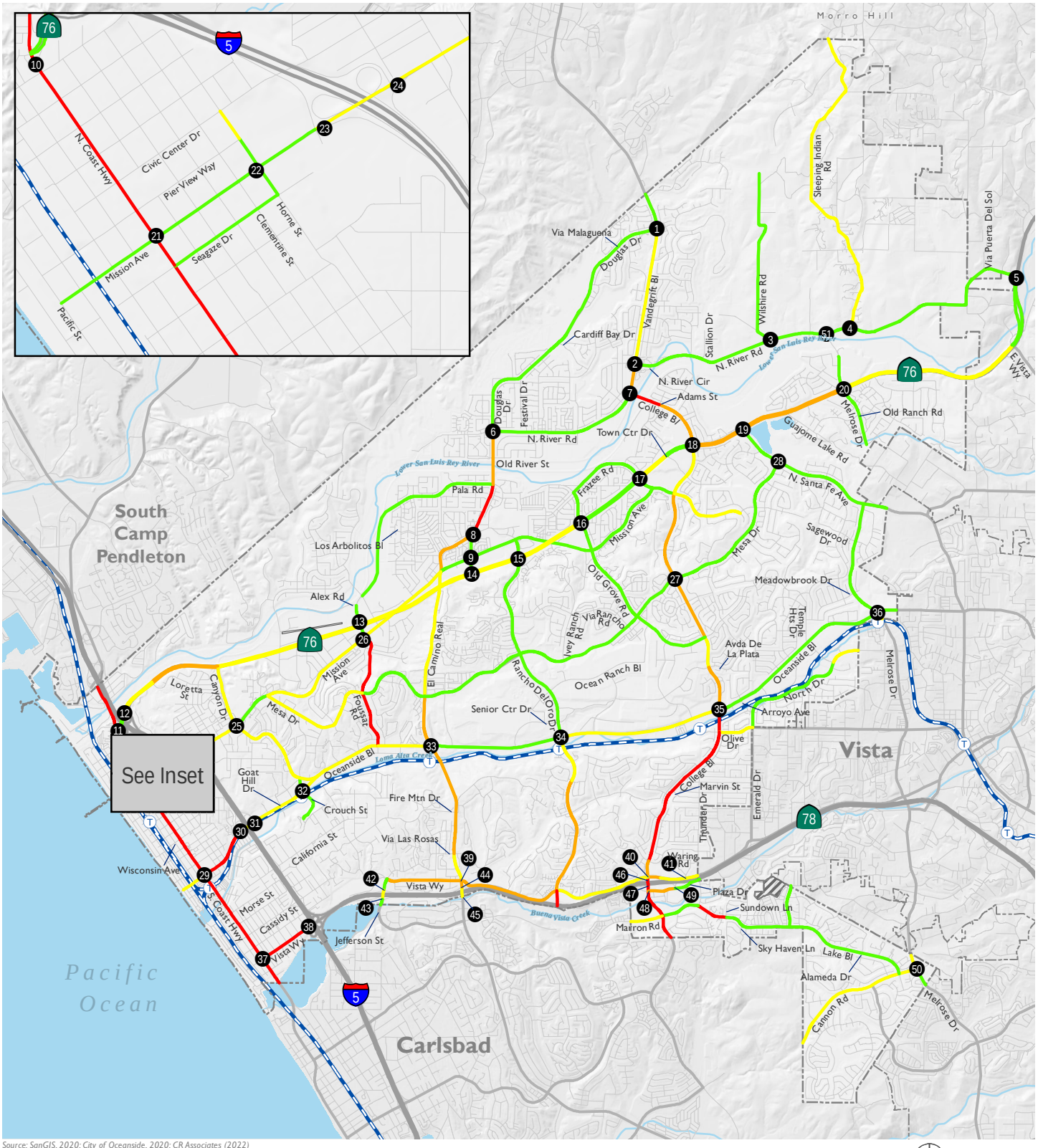
Table 3.5 - Roadway Segment LOS Results

#	Roadway	Segment	Existing					Oceanside GPU				
			Classification	Roadway Capacity	ADT	V/C	LOS	Classification	Roadway Capacity	ADT	V/C	LOS
S-163	Vista Way	El Camino Real to Rancho Del Oro Drive	4-Lane Secondary Collector w/TWLTL	30,000	25,500	0.85	**E**	4-Lane Secondary Collector w/TWLTL	30,000	27,300	0.91	**E**
S-164	Vista Way	Rancho Del Oro Drive to College Boulevard	4-Lane Secondary Collector w/TWLTL	30,000	24,600	0.82	D	4-Lane Secondary Collector w/TWLTL	30,000	23,900	0.80	D
S-165	Vista Way	College Boulevard to SR-78 WB Ramps	4-Lane Secondary Collector w/o TWLTL	25,000	28,300	1.13	**F**	4-Lane Secondary Collector w/TWLTL	30,000	29,400	0.98	**E**
S-166	Vista Way	SR-78 WB Ramps to Thunder Drive	4-Lane Secondary Collector w/TWLTL	30,000	19,000	0.63	C	4-Lane Secondary Collector w/TWLTL	30,000	22,700	0.76	D
S-167	Wilshire Road	Northern Terminus to N River Road	2-Lane Collector w/o TWLTL	10,000	1,700	0.17	A	2-Lane Collector w/o TWLTL	10,000	2,000	0.20	A

Source: CR Associates (2024)

Notes:
[1] Mission Avenue and Seagaze Drive are a one-way couplet between Coast Highway and Clementine Street. Roadway capacity obtained from the LOS thresholds in the City of San Diego Transportation Study Manual (2022).
Bold letter indicates LOS E or F.
DNE = Does Not Exist.
N/A = Not Applicable.

Figure 3.6: Future Roadway Level of Service



Source: SanGIS, 2020; City of Oceanside, 2020; CR Associates (2022)

- Transit Stop
- Rail
- City of Oceanside
- Sphere of Influence

Roadway Level of Service

- A - C
- D
- E
- F
- # Study Intersections

0 ½ 1 2
Miles
Map Date: 3/11/2024

3.3.7 Intersection LOS Analysis

Table 3.6 presents the traffic control types, peak hour intersection delays, and peak hour LOS results for the fifty-one (51) study intersections. Intersection LOS calculation worksheets are provided in **Appendix D**. For comparison purposes, level of service information under Existing (2021) is also included. Detailed analysis for Existing (2021) conditions can be found in the *City of Oceanside General Plan Update Existing Conditions Report* (June 2021). **Figure 3.7** presents the Oceanside GPU's intersection level of service analysis results.

As shown, all of the Oceanside GPU's study intersections are anticipated to operate at LOS D or better, with the exception of the following eighteen (18) intersections:

I-2. North River Road & North Redondo Drive & Vandegrift Boulevard – LOS F (PM)

I-6. Douglas Drive & North River Road – LOS E (AM/PM)

I-7. College Boulevard & North River Road – LOS E (AM/PM)

I-13. Foussat Rd & SR-76 – LOS F (AM/PM)

I-14. Douglas Drive & SR-76 – LOS F (AM)

I-15. Rancho Del Oro Drive & SR-76 – LOS F (AM/PM)

I-16. Old Grove Rd & SR-76 – LOS E (AM)

I-17. Frazee Rd & SR-76 – LOS E (AM/PM)

I-18. College Boulevard & SR-76 – LOS F (AM/PM)

I-19. North Santa Fe Avenue & SR-76 – LOS F (AM/PM)

I-20. Melrose Drive & SR-76 – LOS F (AM)

I-24. I-5 NB Ramps & Mission Avenue – LOS F (PM)

I-26. Foussat Rd & Mission Ave – LOS F (AM)

I-29. Coast Highway & Oceanside Boulevard – LOS E (PM)

I-33. El Camino Real & Oceanside Boulevard – LOS E (PM)

I-34. Rancho Del Oro Drive & Oceanside Boulevard – LOS E (AM)

I-35. College Boulevard & Oceanside Boulevard – LOS E (PM)

I-39. El Camino Real & Vista Way – LOS E (PM)

Table 3.6 - Peak Hour Intersection LOS Results

ID	Intersection	Peak Hour	Traffic Control	Existing Conditions		Oceanside GPU		Δ Delay
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
I-1	Vandegrift Boulevard & Douglas Drive	AM	Signal	31.7	C	45.9	D	14.2
		PM		25.4	C	40.3	D	14.9
I-2	North River Road & North Redondo Drive & Vandegrift Boulevard	AM	Signal	37.5	D	49.2	D	11.7
		PM		48.9	D	91.1	**F**	42.2
I-3	North River Road & Wilshire Road	AM	Signal	13.6	B	8.4	A	-5.2
		PM		13.7	B	7.2	A	-6.5
I-4	North River Road & Sleeping Indian Road	AM	Signal	13.9	B	17.1	B	3.2
		PM		14.3	B	9.7	A	-4.6
I-5	SR-76 & North River Road	AM	Signal	21.8	C	35.9	D	14.1
		PM		17.2	B	25.2	C	8.0
I-6	Douglas Drive & North River Road	AM	Signal	47.1	D	71.9	**E**	24.8
		PM		35.4	D	61.8	**E**	26.4
I-7	College Boulevard & North River Road	AM	Signal	46.8	D	56.9	**E**	10.1
		PM		57.5	**E**	76.5	**E**	19.0
I-8	Douglas Drive & El Camino Real	AM	Signal	21.4	C	27.7	C	6.3
		PM		29.2	C	47.4	D	18.2
I-9	Douglas Drive & Mission Avenue	AM	Signal	37.0	D	48.8	D	11.8
		PM		36.4	D	49.9	D	13.5
I-10	Coast Highway & SR-76	AM	Signal	5.6	A	10.7	B	5.1
		PM		6.2	A	22.9	C	16.7
I-11	I-5 SB Ramps & SR-76	AM	Signal	19.5	B	11.7	B	-7.8
		PM		20.2	C	19.7	B	-0.5
I-12	I-5 NB Ramps & SR-76	AM	Signal	25.0	C	38.3	D	13.3
		PM		15.8	B	20.5	C	4.7
I-13	Foussat Rd & SR-76	AM	Signal	227.0	**F**	205.6	**F**	-21.4
		PM		160.2	**F**	160.4	**F**	0.2
I-14	Douglas Drive & SR-76	AM	Signal	182.2	F	143.9	**F**	-38.3
		PM		10.5	B	11.6	B	1.1
I-15	Rancho Del Oro Drive & SR-76	AM	Signal	101.2	**F**	82.5	**F**	-18.7
		PM		77.7	**E**	70.7	**E**	-7.0
I-16	Old Grove Rd & SR-76	AM	Signal	66.7	**E**	67.8	**E**	1.1
		PM		43.9	D	47.5	D	3.6
I-17	Frazee Rd & SR-76	AM	Signal	44.2	D	64.9	**E**	20.7
		PM		76.0	**E**	79.9	**E**	3.9
I-18	College Boulevard & SR-76	AM	Signal	135.8	**F**	132.9	**F**	-2.9
		PM		116.9	**F**	111.6	**F**	-5.3

Table 3.6 - Peak Hour Intersection LOS Results

ID	Intersection	Peak Hour	Traffic Control	Existing Conditions		Oceanside GPU		Δ Delay
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
I-19	North Santa Fe Avenue & SR-76	AM	Signal	64.8	**E**	98.4	**F**	33.6
		PM		157.5	**F**	145.1	**F**	-12.4
I-20	Melrose Drive & SR-76	AM	Signal	73.5	**E**	82.2	**F**	8.7
		PM		42.0	D	47.7	D	5.7
I-21	Coast Highway & Mission Avenue	AM	Signal	17.2	B	24.3	C	7.1
		PM		25.5	C	38.1	D	12.6
I-22	Horne Street & Mission Avenue	AM	Signal	27.6	C	23.7	C	-3.9
		PM		48.6	D	41.8	D	-6.8
I-23	Pirates Cove/I-5 SB Ramps & Mission Avenue	AM	Signal	11.2	B	11.9	B	0.7
		PM		13.8	B	19.4	B	5.6
I-24	I-5 NB Ramps & Mission Avenue	AM	TWSC	18.7	C	17.7	C	-1.0
		PM		188.0	**F**	239.0	**F**	51.0
I-25	Canyon Drive & Mission Avenue	AM	Signal	29.5	C	40.0	D	10.5
		PM		32.8	C	47.6	D	14.8
I-26	Foussat Rd & Mission Ave	AM	Signal	97.5	**F**	103.5	**F**	6.0
		PM		29.0	C	44.3	D	15.3
I-27	College Boulevard & Mesa Drive	AM	Signal	34.2	C	37.6	D	3.4
		PM		39.5	D	42.9	D	3.4
I-28	N Santa Fe Avenue & Mesa Drive	AM	Signal	16.5	B	17.3	B	0.8
		PM		24.5	C	35.7	D	11.2
I-29	Coast Highway & Oceanside Boulevard	AM	Signal	19.3	B	30.1	C	10.8
		PM		24.3	C	64.4	**E**	40.1
I-30	Parkwood Lane/I-5 SB Ramps & Oceanside Boulevard	AM	Signal	33.9	C	38.9	D	5.0
		PM		26.9	C	39.8	D	12.9
I-31	Oceanside Boulevard & I-5 NB Ramps	AM	Signal	41.4	D	44.7	D	3.3
		PM		38.1	D	54.2	D	16.1
I-32	Crouch Street & Oceanside Boulevard	AM	Signal	29.6	C	34.9	D	5.3
		PM		32.0	C	37.7	D	5.7
I-33	El Camino Real & Oceanside Boulevard	AM	Signal	39.6	D	49.9	D	10.3
		PM		44.5	D	61.7	**E**	17.2
I-34	Rancho Del Oro Drive & Oceanside Boulevard	AM	Signal	56.2	**E**	70.8	**E**	14.6
		PM		25.8	C	50.4	D	24.6
I-35	College Boulevard & Oceanside Boulevard	AM	Signal	54.6	D	53.0	D	-1.6
		PM		60.8	**E**	60.1	**E**	-0.7
I-36	Melrose Drive & Oceanside Boulevard/W Bobier Drive	AM	Signal	26.1	C	28.7	C	2.6
		PM		30.4	C	49.9	D	19.5

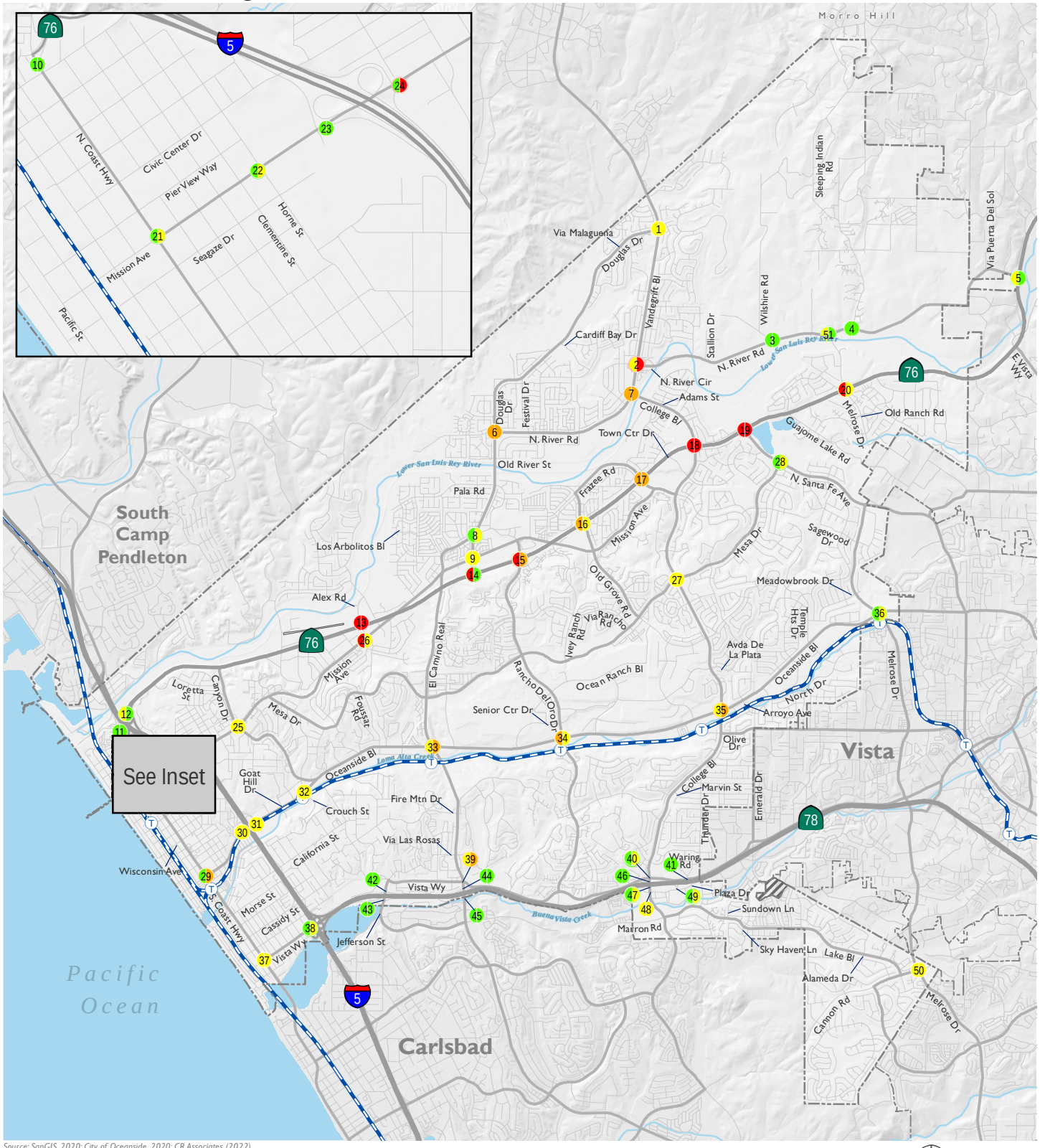
Table 3.6 - Peak Hour Intersection LOS Results

ID	Intersection	Peak Hour	Traffic Control	Existing Conditions		Oceanside GPU		Δ Delay
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
I-37	Coast Highway & Vista Way	AM	Signal	18.6	B	32.8	D	14.2
		PM		26.2	C	41.3	D	15.1
I-38	I-5 SB Ramp & Vista Way/SR-78	AM	Signal	15.7	B	23.7	C	8.0
		PM		19.5	B	35.5	D	16.0
I-39	El Camino Real & Vista Way	AM	Signal	37.9	D	54.0	D	16.1
		PM		59.2	**E**	74.4	**E**	15.2
I-40	College Boulevard & Vista Way	AM	Signal	70.2	**E**	25.9	C	-44.3
		PM		45.5	D	37.3	D	-8.2
I-41	SR-78 WB Ramps & Vista Way	AM	Signal	19.4	B	32.9	C	13.5
		PM		23.3	C	34.8	C	11.5
I-42	SR-78 WB Ramps & Jefferson Street	AM	Signal	18.5	B	18.8	B	0.3
		PM		14.0	B	17.3	B	3.3
I-43	Jefferson Street & SR-78 EB Ramps	AM	Signal	11.8	B	12.0	B	0.2
		PM		22.4	C	24.3	C	1.9
I-44	El Camino Real & SR-78 WB Ramps	AM	Signal	17.6	B	22.2	C	4.6
		PM		29.8	C	30.8	C	1.0
I-45	El Camino Real & SR-78 EB Ramps	AM	Signal	18.5	B	19.2	C	0.7
		PM		28.0	C	28.3	C	0.3
I-46	College Boulevard & SR78 WB On-Ramp	AM	Uncontrolled	0.0	A	0.0	A	0.0
		PM		0.0	A	0.0	A	0.0
I-47	College Boulevard & SR78 EB Off-Ramp	AM	Signal	10.1	B	12.1	B	2.0
		PM		28.2	C	38.1	D	9.9
I-48	College Boulevard & Haymar Drive/Plaza Drive	AM	Signal	24.3	C	47.0	D	22.7
		PM		30.7	C	49.9	D	19.2
I-49	Plaza Drive & SR-78 EB Ramps	AM	Signal	21.5	C	27.0	C	5.5
		PM		28.6	C	37.7	D	9.1
I-50	S Melrose Drive & Cannon Road	AM	Signal	21.7	C	37.5	D	15.8
		PM		45.2	D	46.2	D	1.0
I-51	Melrose Drive & N River Road (New Intersection)	AM	Signal	N/A	N/A	33.0	D	N/A
		PM		N/A	N/A	26.4	C	N/A

Source: CR Associates (2024)

Notes:
Bold letter indicates LOS E or F.
N/A = Not Applicable

Figure 3.7: Future AM/PM Peak Hour Intersection Level of Service



Source: SanGIS, 2020; City of Oceanside, 2020; CR Associates (2022)

3.3.8 Freeway/Highway LOS Analysis

Table 3.7 presents the freeway level of service analysis results for the seven (7) segments of I-5 freeway and five (5) segments of SR-78 freeway located within the vicinity of the City of Oceanside. Detailed freeway LOS analysis inputs and calculations are provided in **Appendix E**. HCS software worksheets are provided in **Appendix F**. For comparison purposes, level of service information under Existing (2021) is also included. Detailed analysis for Existing (2021) conditions can be found in the *City of Oceanside General Plan Update Existing Conditions Report* (June 2021).

As shown, all of the Oceanside GPU's study freeway/highway segments are anticipated to operate at LOS D or better. It should be noted that although freeway volumes for all study segments increased, compared to Existing (2021) conditions, the Oceanside GPU assumes I-5 and SR-78 would both have High Occupancy Vehicle (HOV) lanes, increasing the capacity of the freeway/highway systems.

Table 3.7 - Freeway/Highway Segment LOS Results

Freeway	Segment	Peak Hour	Direction	ADT	Oceanside GPU				Existing Conditions		
					Peak Hour Volume	Average Speed (mph)	Density	LOS	Average Speed (mph)	Density	LOS
I-5	Northern City Limit to SR-76	AM	NB	171,000	6,505	63.9	29.7	D	65.2	27.8	D
			SB		5,157	68.2	22.2	C	68.7	20.9	C
		PM	NB		5,053	68.5	21.5	C	68.8	20.5	C
			SB		6,284	65.1	28.1	D	66.0	26.5	D
I-5	SR-76 to Mission Avenue	AM	NB	174,000	6,619	65.1	27.4	D	64.2	28.7	D
			SB		5,247	68.2	20.6	C	67.9	21.5	C
		PM	NB		5,142	68.2	20.3	C	68.0	21.1	C
			SB		6,395	65.9	26.1	D	65.1	27.4	D
I-5	Mission Avenue to Oceanside Boulevard	AM	NB	174,000	6,619	65.1	26.4	D	28.6	28.6	D
			SB		5,247	67.3	20.3	C	67.1	21.6	C
		PM	NB		6,122	66.3	24.0	C	65.4	25.8	C
			SB		5,223	67.3	20.3	C	67.1	21.5	C
I-5	Oceanside Boulevard to California Street	AM	NB	209,000	7,951	59.8	34.3	D	56.9	38.5	**E**
			SB		6,303	65.4	25.0	C	64.5	27.0	D
		PM	NB		7,353	62.4	30.4	D	60.3	33.6	D
			SB		6,274	65.4	25.0	C	64.5	26.8	D
I-5	California Street to Cassidy Street	AM	NB	210,000	7,989	59.4	34.9	D	56.6	38.9	**E**
			SB		6,333	65.4	25.0	C	64.4	27.1	D
		PM	NB		7,388	62.1	30.9	D	60.1	33.9	D
			SB		6,304	65.4	25.0	C	64.5	27.0	D
I-5	Cassidy Street to Vista Way/SR-78	AM	NB	210,000	8,027	61.0	32.9	D	56.8	39.0	**E**
			SB		6,363	66.1	24.4	C	64.7	27.1	D
		PM	NB		7,423	63.2	29.7	D	60.3	34.0	D
			SB		6,334	66.3	24.0	C	64.8	27.0	D
I-5	Vista Way/SR-78 to Southern City Limits	AM	NB	210,000	8,027	61.0	32.9	D	56.8	39.0	**E**
			SB		6,363	66.4	23.6	C	64.7	27.1	D
		PM	NB		7,423	63.8	28.7	D	60.3	34.0	D
			SB		6,334	66.4	23.6	C	64.8	27.0	D

Table 3.7 - Freeway/Highway Segment LOS Results

Freeway	Segment	Peak Hour	Direction	ADT	Oceanside GPU				Existing Conditions		
					Peak Hour Volume	Average Speed (mph)	Density	LOS	Average Speed (mph)	Density	LOS
SR-78	I-5 to Jefferson Street	AM	EB	120,000	4,643	68.3	21.4	C	66.3	25.7	C
			WB		3,517	68.1	16.2	B	68.1	19.0	C
		PM	EB		5,816	64.9	28.0	D	59.2	36.1	**E**
			WB		3,268	68.1	15.4	B	68.1	17.6	B
SR-78	Jefferson Street to El Camino Real	AM	EB	127,000	3,823	68.1	17.4	B	67.9	20.7	C
			WB		4,826	67.5	22.1	C	65.0	27.3	D
		PM	EB		5,155	66.8	24.0	C	63.3	30.0	D
			WB		4,332	68.0	19.9	C	66.8	23.8	C
SR-78	El Camino Real to College Boulevard	AM	EB	135,000	4,257	69.1	18.4	C	67.8	23.1	C
			WB		5,099	68.2	22.2	C	64.2	29.2	D
		PM	EB		4,531	68.9	19.6	C	66.9	24.9	C
			WB		5,176	68.0	22.7	C	63.8	29.8	D
SR-78	College Boulevard to Eastern City Limits	AM	EB	125,000	3,941	70.1	17.3	B	69.4	20.9	C
			WB		4,721	68.9	21.2	C	66.4	26.1	D
		PM	EB		4,195	70.0	18.5	C	68.7	22.5	C
			WB		4,792	68.9	21.2	C	66.1	26.7	D
SR-78	Eastern City Limits to Emerald Drive	AM	EB	125,000	3,941	68.6	17.4	B	69.0	21.0	C
			WB		4,721	68.9	21.2	C	66.4	26.1	D
		PM	EB		4,195	69.5	18.6	C	68.3	22.6	C
			WB		4,792	68.9	21.2	C	66.1	26.7	D

Source: CR Associates (2024)

Note:
Bold letter indicates LOS E or F.

Appendix A
VMT Report
Base Year (2016)

Mode Share Summary		
Mode	Base Year	
Drive Alone	427,968	45.6%
HOV2	203,879	21.7%
HOV3	216,130	23.0%
Walk	45,996	4.9%
Bike	10,525	1.1%
Transit	12,500	1.3%
Other	20,885	2.2%
Total	937,883	100.0%
Trip Summaries		
Car Trips	847,977	90.4%
Transit Trips	12,500	1.3%
AT Trips	56,521	6.0%

Region	VMT Per Capita
SANDAG	19.03959313
Oceanside	17.97997202

	TAZ	VMT Per Capita
0	13	37.05346137
1	198	32.97316715
2	201	24.30074062
3	220	23.37917179
4	233	23.57394479
5	239	19.58012978
6	242	20.13422736
7	260	20.79013341
8	261	25.82814122
9	263	18.29206788
10	265	21.62364203
11	266	17.40797532
12	268	22.06405165
13	269	19.03019427
14	275	19.40620599
15	276	21.42199642
16	279	17.97246683
17	280	22.84211146
18	296	20.49819173
19	297	15.78222814
20	302	26.55167562
21	305	24.35264591
22	307	19.69441729
23	310	18.38541372
24	311	17.98273879
25	312	17.46548606
26	313	17.18607082
27	320	20.10360616
28	321	20.09473618
29	322	22.12623905
30	328	16.13249323
31	330	21.22412916
32	333	18.96824451
33	334	19.19344404
34	335	18.80675843
35	336	14.01583412
36	339	16.52252624
37	340	16.34311333
38	341	17.92140844
39	343	19.2545931
40	344	25.15053367
41	346	20.31819152
42	349	17.10722449
43	350	19.01695315
44	359	19.46315873
45	364	19.63237995
46	365	18.94101174
47	366	103.6933782
48	368	17.88761277
49	369	18.0067926
50	373	14.20452493
51	377	16.63034386
52	381	17.45495986
53	382	18.11367946
54	385	17.88223174
55	392	17.88519392
56	395	17.97342736
57	396	18.5977953
58	397	19.34703283
59	399	20.46979433
60	400	19.58762834
61	405	17.45580752
62	411	19.60413219
63	413	24.29013325
64	414	17.20718634
65	421	16.83222434
66	422	20.38421004
67	424	19.98306051
68	425	17.79011671
69	428	16.47125484

Region	VMT Per Employee
SANDAG	19.05361573
Oceanside	13.41801797

	TAZ	VMT Per Employee
0	13	14.55173369
1	198	28.22070249
2	201	18.34865568
3	220	11.58690641
4	233	3.915552029
5	239	10.27432548
6	242	16.94368341
7	260	2.08092752
8	263	17.7474767
9	265	5.739549952
10	266	9.335134896
11	268	6.156201676
12	269	5.541186911
14	276	0.91416148
15	279	2.564567224
16	280	3.93404121
17	296	14.48940419
18	297	7.994778601
20	303	15.28468508
21	305	4.27016776
22	306	14.34615647
23	307	0.965333091
24	310	16.29140425
25	311	7.768079358
26	312	12.5656773
27	313	6.780040239
28	316	16.05372585
29	320	4.317418118
30	321	10.87092138
31	322	8.713534371
32	328	11.1875245
33	330	5.700578678
34	333	9.940429836
35	334	4.726130036
36	335	3.196002908
37	336	8.092528189
38	339	13.45656219
39	340	3.806938162
40	341	11.01432538
41	343	5.631256925
42	344	14.53651497
43	346	18.07580465
44	349	5.351059299
45	350	2.632127317
46	359	8.307810227
47	361	25.95211803
48	364	2.771386036
49	365	7.414232509
50	366	12.42345185
51	368	6.620762507
52	369	8.470222248
53	373	11.98324249
54	377	3.405483439
55	378	11.82149255
56	381	10.98181166
57	382	4.850844907
58	385	3.89470197
59	392	14.75106749
60	395	2.442734753
61	396	8.405572556
62	397	5.84084012
63	399	5.116534621
64	400	9.093533723
65	403	18.07908572
66	405	7.871305383
67	410	10.52555563
68	411	4.376122534
69	413	9.713203658
70	414	2.437512292
71	421	7.659215375

70	435	18.1477267
71	444	16.68431947
72	445	13.21096748
73	446	18.1455702
74	449	17.98003983
75	451	21.00340535
76	452	19.07927208
77	453	16.22726248
78	457	17.5221932
79	459	19.88263396
80	466	17.43729571
81	471	16.59645647
82	474	17.32842322
83	482	16.96730226
84	484	17.13458509
85	489	16.05676073
86	494	14.95595547
87	495	17.18154671
88	496	15.86550963
89	497	16.83282916
90	498	7.581788178
91	499	18.41161312
92	503	17.54197134
93	505	17.06041151
94	513	17.71361041
95	514	8.152534554
96	519	9.164157829
97	520	15.35111576
98	521	17.46146153
99	526	17.96823461
100	529	13.6850758
101	531	16.03133558
102	533	14.1023585
103	535	13.15960273
104	539	17.52904961
105	542	17.59914568
106	543	19.8625344
107	544	16.97257057
108	545	16.23545485
109	546	16.02416521
110	548	26.00890078
111	552	16.62050528
112	554	4.426553067
113	561	13.09623553
114	562	21.24109894
115	563	16.04604327
116	566	17.16550924
117	569	14.45479506
118	571	16.64525723
119	573	21.03810236
120	574	13.02782828
121	575	16.73556036
122	577	13.15053387
123	580	12.40596918
124	581	13.24414902
125	584	11.7136534
126	585	9.503910779
127	588	13.97909496
128	589	18.43528275
129	592	14.34627356
130	594	15.40502526
131	598	19.43468394
132	601	18.07294835
133	606	14.18587928
134	607	17.35719196
135	608	15.4463217
136	609	14.1934989
137	612	17.64525312
138	615	17.95100771
139	617	14.85515088
140	618	16.26702144
141	621	15.91282495
142	622	13.91642337
143	626	18.83953553
144	630	19.42632724
145	631	20.67846055
72	422	15.29361421
73	424	16.24999292
74	425	3.767779386
75	427	16.23782439
76	428	16.68739456
77	430	15.6435613
78	434	17.61068027
79	435	13.07285236
80	437	13.58384203
81	441	18.04746893
82	443	14.54135654
83	444	9.640453597
84	445	17.57485214
85	446	3.772710237
86	449	4.741818113
87	451	18.00844647
88	452	2.404664646
89	453	5.289090335
90	457	1.779809052
91	458	15.21656881
92	459	9.852828491
93	463	13.92806346
94	464	11.44302998
95	466	5.330987991
96	469	15.66219997
97	471	1.610197622
98	474	11.32127761
100	484	17.90508361
101	489	3.630395167
102	494	1.274568605
103	495	12.50465486
104	496	12.47141534
105	497	4.983697584
106	498	13.32566179
107	499	10.50965341
108	501	14.58249632
109	502	14.58169759
110	503	8.269142514
111	504	15.42616509
112	505	5.173581457
113	513	15.92877367
114	514	10.92125557
115	519	10.93438537
116	520	15.12034834
117	521	11.78329338
118	524	15.68630567
119	526	8.481938357
120	529	4.534872284
121	531	13.96688225
122	533	9.41027507
123	535	13.48360097
124	539	4.434600113
125	542	5.256321171
126	543	2.996635443
127	544	1.668276797
128	545	5.484193249
129	546	12.06672885
130	548	15.99871037
131	549	12.43923176
132	552	16.75781852
133	553	15.37917357
134	554	16.15079416
135	555	10.73034193
136	561	14.80930083
137	562	6.218611587
138	563	15.9230109
139	566	8.74654428
140	569	5.663863956
141	571	15.45381126
142	572	12.49926524
143	573	11.58972018
144	574	16.0425271
145	575	6.797540275
146	577	7.124156581
147	580	13.21120887
148	581	14.18575654

146	632	19.44091518
147	634	20.71882202
148	635	15.28198885
149	636	15.0666996
150	639	20.67117282
151	640	13.57029957
152	643	13.06372029
153	646	12.22810134
154	648	17.07547156
155	654	16.11462793
156	657	12.02098574
157	658	20.11062517
158	659	20.2194424
159	660	18.20477897
160	664	17.94581549
161	668	16.37323903
162	670	20.5931508
163	674	14.15239445
164	675	19.04496068
165	680	16.68069605
166	684	13.64004509
167	686	19.20455645
168	687	13.62994839
169	690	19.50402241
170	691	13.40172911
171	693	10.50684369
172	694	18.95393585
173	706	15.73809227
174	712	16.07468784
175	717	16.22137741
176	724	16.56528051
177	725	12.08822245
178	726	16.99110696
179	730	18.57118768
180	733	15.81736836
181	737	19.10311761
182	740	26.10358599
183	742	18.20777187
184	749	20.56809977
185	751	19.85689072
186	772	19.00641854
187	792	19.23567691

149	584	10.62075132
150	585	7.090527261
151	588	13.37478998
152	589	14.80377329
153	592	15.4249104
154	594	3.059550456
155	598	4.240112429
156	601	10.62761472
157	603	15.05282391
158	605	14.87877794
159	606	12.68491068
160	607	3.312960113
161	608	11.89566221
162	609	0.625924456
163	612	8.508924178
164	615	7.701979242
165	617	14.97870731
166	618	8.087529673
167	621	14.66109697
168	622	7.38423037
169	626	13.23539149
170	630	3.274619885
171	631	8.011394297
172	632	4.133540141
173	634	6.859113548
174	635	11.466138
175	636	15.85201051
176	639	5.217636006
177	640	14.41226232
179	646	16.16317555
180	648	9.795160637
181	654	15.2944409
182	657	14.43455652
183	658	8.179766987
184	659	14.55938345
185	660	1.509358092
186	664	13.77856336
187	668	16.79526527
188	670	14.57360068
189	674	14.07702732
190	675	12.35274391
191	680	9.444474588
192	683	13.60186201
193	684	2.229243952
194	686	12.81912407
195	687	14.03121595
196	689	14.69275893
197	690	4.354578459
199	693	18.00455507
200	694	1.856675773
201	696	12.92835383
202	702	14.2964318
203	706	3.698905712
204	712	14.40967623
205	717	6.166340436
206	718	15.79737201
207	724	0.963196662
208	725	15.6735767
209	726	3.437847578
210	730	6.479932914
211	733	12.55616915
212	737	10.6594405
213	740	14.0004098
214	742	15.40435704
215	749	13.73965691
216	751	1.687027773
217	758	17.21777088
218	772	9.290730651
219	792	7.14512293

Appendix B
VMT Report
Oceanside GPU

Mode Share Summary		
Mode	Oceanside GPU	
Drive Alone	508,392	42.9%
HOV2	255,593	21.6%
HOV3	226,563	19.1%
Walk	84,396	7.1%
Bike	26,709	2.3%
Transit	54,476	4.6%
Other	27,726	2.3%
Total	1,183,855	100.0%
Trip Summaries		
Car Trips	990,548	83.7%
Transit Trips	54,476	4.6%
AT Trips	111,105	9.4%

Region	VMT Per Capita
SANDAG	16.33069674
Oceanside	15.58871477

	TAZ	VMT Per Capita
0	13	15.29241804
1	198	26.59497683
2	201	29.17207633
3	220	23.43943311
4	233	23.34653714
5	239	18.64662483
6	242	24.99820005
7	260	20.76985604
8	261	24.10905166
9	263	21.94625446
10	265	21.04905236
11	266	16.18806743
12	268	21.17988784
13	269	17.65557399
14	275	21.85587393
15	276	20.73172424
16	279	17.99066318
17	280	20.50441279
18	296	18.82539606
19	297	18.69733084
20	302	23.84875141
21	305	25.09215822
22	307	16.79093926
23	310	18.58289411
24	311	16.87416523
25	312	17.39304494
26	313	18.2173833
27	320	18.5448089
28	321	18.88082711
29	322	19.15118186
30	328	13.63649922
31	330	16.75516711
32	333	15.06019445
33	334	18.91398462
34	335	16.47088169
35	336	11.39733883
36	339	16.22296791
37	340	17.2356102
38	341	17.26893761
39	343	15.60266777
40	344	19.51207657
41	346	18.45794854
42	349	15.19347417
43	350	17.79991512
44	359	18.4606776
45	364	18.02198846
46	365	16.42402984
47	366	14.41290179
48	368	17.0594662
49	369	17.49351721
50	373	15.23398258
51	377	16.06160224
52	381	18.0185625
53	382	16.26935974
54	385	16.62750184
55	392	13.81228956
56	395	16.82940648
57	396	15.64313913
58	397	17.46603442
59	399	20.06341304
60	400	18.93277912
61	405	17.86152602
62	410	21.72233851
63	411	18.8564305
64	413	23.25742184
65	414	18.1089013
66	421	16.12593811
67	422	16.597179
68	424	19.65349212
69	425	15.87958661

Region	VMT Per Employee
SANDAG	14.6143106
Oceanside	10.52700784

	TAZ	VMT Per Employee
0	13	9.923117586
1	198	22.60461168
2	201	6.793842779
3	220	10.03354095
4	233	0.729163104
5	239	8.181104685
6	242	18.0415344
7	260	2.654255925
8	261	9.095163823
9	263	13.51587451
10	265	2.968181646
11	266	7.454810566
12	268	1.789847948
13	269	4.484734248
14	275	14.20277169
16	279	1.399216244
17	280	1.003997689
18	296	12.11845762
19	297	8.675412782
21	303	15.76599026
22	305	2.528074741
23	306	12.59042072
24	307	0.860764356
25	310	12.25292826
26	311	6.126281955
27	312	11.43729474
28	313	2.067082236
29	316	12.04093125
30	320	3.302873842
31	321	8.412344893
32	322	7.95268694
33	328	10.00269446
34	330	1.773023743
35	333	8.914016261
36	334	0.200901144
37	335	1.058018735
38	336	3.92256888
39	339	11.97237845
40	340	0.499683026
41	341	5.30625325
42	343	2.856311377
43	344	17.27863422
44	346	11.6808269
45	349	2.034701757
46	350	0.987799136
47	359	3.314187285
48	361	12.38889775
49	364	1.822353731
50	365	4.590702312
51	366	12.03255905
52	368	5.118757659
53	369	4.72451547
54	373	10.49212532
55	377	2.370303721
56	378	12.54712579
57	381	12.24397176
58	382	2.293459017
59	385	8.632456114
60	392	10.21490208
61	395	1.356209636
62	396	7.033853013
63	397	2.812722175
65	400	4.880801686
66	403	14.52492131
67	405	6.420580412
68	410	10.8822882
69	411	4.826471415
70	412	15.83385931
71	413	11.11586099
72	414	2.931314926

70	428	18.4030536	73	421	4.466969322
71	429	18.3797309	74	422	14.88031545
72	435	16.93651788	75	424	17.77219559
73	444	15.18177632	76	425	0.852633297
74	445	14.76612962	77	427	12.08449757
75	446	16.54091722	78	428	13.98632095
76	449	17.99812912	79	429	1.697240387
77	451	16.84263806	80	430	14.3338043
78	452	15.34600875	81	434	13.7332974
79	453	12.52852027	82	435	5.848980992
80	457	16.30828055	83	437	13.21536364
81	459	19.60378673	84	441	13.01027884
82	466	16.44852634	85	443	15.10274242
83	471	15.63011118	86	444	7.273216667
84	474	17.39656242	87	445	15.52328503
85	482	15.67725643	88	446	2.537033492
86	484	23.31728905	89	449	0.345400434
87	489	17.85984459	90	451	10.25315675
88	494	15.19467761	91	452	3.666282798
89	495	15.96751161	92	453	2.866554318
90	496	16.96646149	93	457	5.080675397
91	497	15.29178784	94	458	13.90664596
92	499	15.78047068	95	459	11.9048729
93	501	15.77305368	96	463	13.80746277
94	503	13.73465628	97	464	11.59911749
95	505	11.04697561	98	466	4.111148157
96	513	10.74077998	99	469	14.37234575
97	514	11.58199811	100	471	0.190870243
98	519	9.942862172	101	474	7.903735693
99	520	7.055521512	102	482	4.243895763
100	521	10.60173159	103	484	14.40317507
101	526	14.35972705	104	489	3.445622275
102	529	13.48934334	105	494	0.862074863
103	531	13.5352108	106	495	8.424442919
104	533	14.72995346	107	496	9.678188793
105	535	12.83160914	108	497	2.258895788
106	539	16.0373302	109	498	11.83428543
107	542	12.62010905	110	499	9.956878947
108	543	14.69345589	111	501	8.89965418
109	544	13.52055314	112	502	11.92044505
110	545	15.42762982	113	503	2.458728631
111	546	13.3041766	114	504	13.89377801
112	548	14.114347	115	505	0.351341305
113	549	17.6237452	116	513	7.303671374
114	552	14.30462917	117	514	10.52971838
115	553	14.91844033	118	519	8.653591145
116	554	15.33276516	119	520	7.240971912
117	555	11.85622213	120	521	6.126058988
118	561	7.496002955	121	524	13.73073114
119	562	14.48601765	122	526	5.556539044
120	563	3.816173509	123	529	3.39175744
121	566	7.437309485	124	531	12.77207267
122	569	12.78822771	125	533	7.776579431
123	571	11.40512181	126	535	11.52292182
124	573	20.59377984	127	539	1.780977435
125	574	11.41584549	128	542	2.256696126
126	575	17.6114363	129	543	1.947745304
127	577	11.9433935	130	544	1.92066395
128	580	9.334982347	131	545	1.284145028
129	581	7.049560744	132	546	7.67411358
130	584	10.24873253	133	548	12.11918572
131	585	9.971763044	134	549	7.39845115
132	588	12.71412972	135	552	9.677185492
133	589	14.66031336	136	553	13.7111946
134	592	12.61466718	137	554	10.60849107
135	594	10.97857799	138	555	11.12908229
136	598	14.51658166	139	561	8.242882399
137	601	8.773275037	140	562	3.990965626
138	603	10.62306704	141	563	10.89717869
139	605	13.0297715	142	566	5.023807583
140	606	8.379284431	143	569	1.114553634
141	607	14.26475164	144	571	7.041554037
142	608	15.70982329	145	572	14.62824562
143	609	10.23851294	146	573	8.216679412
144	612	11.35399353	147	574	9.988704725
145	615	14.80596832	148	575	4.684741502

146	617	8.047733961
147	618	13.70849809
148	621	12.03663777
149	622	7.581398824
150	626	11.83190845
151	630	9.452304932
152	631	16.99017707
153	632	15.81462792
154	634	16.43123143
155	635	7.42165231
156	636	9.572848695
157	639	14.46562514
158	640	13.32473394
159	643	12.12307073
160	646	11.81531709
161	648	15.23445769
162	654	17.071647
163	657	14.02430383
164	658	16.86684803
165	659	19.52141266
166	660	13.5980859
167	664	14.73354535
168	668	11.87179366
169	670	15.05034701
170	674	11.01660783
171	675	15.39929778
172	680	14.82190851
173	683	11.86171242
174	684	12.16346044
175	686	16.10309463
176	687	15.28175298
177	690	15.72441989
178	691	11.4956824
179	693	10.72286992
180	694	18.3904452
181	696	14.82561888
182	706	12.20910838
183	712	8.381908895
184	717	13.2852399
185	724	14.09065405
186	725	12.87194596
187	726	16.11768407
188	730	14.18031649
189	733	15.12566854
190	737	17.97846344
191	740	11.45759202
192	742	14.73831583
193	749	16.06348991
194	751	15.50095397
195	772	17.58996671
196	792	17.59576549

149	577	5.646815143
150	580	11.6002976
151	581	11.66025863
152	584	8.929768393
153	585	3.840509297
154	588	10.07833015
155	589	11.96631878
156	592	8.995396696
157	594	2.662885307
158	598	4.016688782
159	601	11.10005814
160	603	7.266498416
161	605	7.591959497
162	606	4.671771478
163	607	1.823085789
164	608	12.7946118
166	612	5.688612863
167	615	7.10452375
168	617	9.309055837
169	618	3.885198599
170	621	11.88287601
171	622	0.373194088
172	626	8.19981428
173	630	1.266242959
174	631	0.70070328
175	632	2.554940454
176	634	0.508123076
177	635	9.692635358
178	636	12.07044064
179	639	2.257809762
180	640	14.29401003
181	643	0.288085144
182	646	8.498359656
183	648	8.212103973
184	654	13.44030873
185	657	12.92447048
186	658	6.299430665
187	659	10.06859291
188	660	0.971655628
189	664	11.55975987
190	668	10.56738052
191	670	11.43279462
192	674	9.260425286
193	675	5.35530458
194	680	4.916899946
195	683	11.73500118
196	684	2.72378102
197	686	5.158230969
198	687	12.54404237
199	689	13.64466489
200	690	1.171432144
201	691	2.223181
202	693	11.54225079
203	694	4.466177131
204	696	11.13735989
205	702	14.69626135
206	706	0.549564671
207	712	13.66975526
208	717	4.449751625
209	718	15.43149133
210	724	0.544321601
211	725	9.739773014
214	733	11.89718624
215	737	10.3782249
216	740	13.95278285
217	742	10.08176628
218	749	8.694153894
219	751	0.087959021
220	758	16.80686793
221	772	4.890569837
222	792	3.441481739

Appendix C
VMT Report
No Project Alternative (Adopted General Plan)

Mode Share Summary		
Mode	Adopted General Plan	
Drive Alone	416,559	43.1%
HOV2	212,768	22.0%
HOV3	191,278	19.8%
Walk	59,564	6.2%
Bike	7,371	2.1%
Transit	44,272	4.6%
Other	23,256	2.4%
Total	955,068	100.0%
Trip Summaries		
Car Trips	820,605	85.9%
Transit Trips	44,272	4.6%
AT Trips	66,935	7.0%

Region	VMT Per Capita
SANDAG	16.34584126
Oceanside	16.15520562

TAZ		VMT Per Capita
0	13	42.5285161
1	198	29.03495087
2	201	29.42996294
3	220	22.98269612
4	233	23.04908832
5	239	18.52037211
6	242	19.78016749
7	260	20.95672839
8	261	31.13340931
9	263	23.29021908
10	265	19.683165
11	266	16.42430036
12	268	19.55687339
13	269	17.3678465
14	275	20.49379504
15	276	19.36532761
16	279	17.13764345
17	280	22.62307007
18	296	19.38072418
19	297	16.83362212
20	302	19.65941186
21	305	24.25126222
22	307	17.06751111
23	310	17.68738073
24	311	17.12577886
25	312	16.12250013
26	313	16.69541957
27	320	19.84581195
28	321	17.42930705
29	322	19.65494844
30	328	15.92555848
31	330	20.3951096
32	333	15.80423713
33	334	18.83693842
34	335	17.93828929
35	336	14.37863684
36	339	16.12649445
37	340	16.89496487
38	341	17.70801185
39	343	15.81220905
40	344	20.15270362
41	346	19.54649108
42	349	16.622883
43	350	19.55551483
44	359	18.0948971
45	364	19.22204143
46	365	17.16491958
47	366	2.60337395
48	368	17.62887996
49	369	17.82618254
50	373	15.66767199
51	377	16.05985305
52	381	18.75363449
53	382	16.30465358
54	385	15.07380228
55	392	16.42534448
56	395	16.80227921
57	396	15.78185693
58	397	17.09543271
59	399	19.2414301
60	400	18.66426912
61	405	16.66386682
62	410	12.38019369
63	411	17.58098353
64	413	24.51576539
65	414	17.15417927
66	421	15.59328861
67	422	16.46433044
68	424	15.21100909
69	425	15.61410149

Region	VMT Per Employee
SANDAG	14.64866639
Oceanside	10.48262537

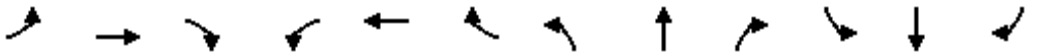
TAZ		VMT Per Employee
0	13	11.07576265
1	198	22.67831897
2	201	2.447967876
3	220	11.6855247
4	233	0.607913675
5	239	4.817198127
6	242	16.82607631
7	260	1.858891843
8	263	17.28350056
9	265	4.794926504
10	266	7.005138229
11	268	3.038910348
12	269	3.512014803
14	276	0.685936391
15	279	1.223718324
16	280	4.670348408
17	296	12.83012074
18	297	8.928257028
20	303	16.0226273
21	305	0.520687238
22	306	13.99423491
24	310	11.23796229
25	311	7.064567529
26	312	10.78295464
27	313	1.593128645
28	316	14.49111325
29	320	2.419538768
30	321	11.16183176
31	322	7.70996545
32	328	8.786074071
33	330	1.329117365
34	333	8.50475068
35	334	0.769477491
36	335	0.512635862
37	336	4.741023025
38	339	10.06338495
39	340	0.632328768
40	341	6.00424973
41	343	2.345274527
42	344	17.17039932
43	346	15.22889999
44	349	5.908888805
45	350	0.917312162
46	359	4.059393766
47	361	12.16780703
48	364	2.680229969
49	365	4.781030869
50	366	16.32703892
51	368	5.35694978
52	369	4.005211287
53	373	10.6598851
54	377	1.395667027
55	378	10.2633439
56	381	13.26870037
57	382	6.519838229
58	385	10.187715
59	392	9.440085385
60	395	1.89622341
61	396	5.136152095
62	397	1.015830556
63	399	1.788237393
64	400	8.225316241
65	403	13.74413936
66	405	3.390730269
67	411	1.862371429
68	413	11.66546223
69	414	0.32259025
70	421	4.40253527
71	422	12.97433045
72	424	17.10695333

70	428	15.51089508
71	429	16.77566771
72	435	16.50956078
73	444	14.55365391
74	445	14.92227188
75	446	14.73851977
76	449	18.00398024
77	451	21.10771654
78	452	16.05833832
79	453	13.53926204
80	457	16.21574421
81	459	13.53539957
82	466	15.2301039
83	471	15.9908159
84	474	16.64726877
85	482	14.43968278
86	484	17.08545672
87	489	16.42543441
88	494	14.29532143
89	495	15.52338111
90	496	15.35344849
91	497	12.44344326
92	499	14.33328328
93	503	14.79915399
94	505	15.63234246
95	513	13.21922677
96	519	12.28835574
97	520	11.83429094
98	521	15.66129313
99	526	14.5454137
100	529	13.64399545
101	531	13.58885541
102	533	13.91773171
103	535	10.8087634
104	539	16.89373565
105	542	10.63421496
106	543	13.83637506
107	544	14.14261875
108	545	13.60226156
109	546	12.08128989
110	548	11.91486089
111	552	11.82554054
112	554	33.0458756
113	561	10.76894445
114	562	18.01409779
115	563	11.46304427
116	566	12.60886481
117	569	11.25479647
118	571	9.623778979
119	573	20.83285448
120	574	9.41138683
121	575	17.17710026
122	577	14.15988756
123	580	12.65699885
124	581	15.3554608
125	584	14.35957029
126	585	9.576723027
127	588	10.45351241
128	589	13.90812374
129	592	10.0084957
130	594	12.63150761
131	598	15.60431329
132	601	12.77801354
133	605	16.08342301
134	606	10.29841825
135	607	14.46596674
136	608	14.24740361
137	609	12.64252192
138	612	13.75794809
139	615	16.7771913
140	617	10.56657658
141	618	14.89141801
142	621	15.98136141
143	622	10.75906066
144	626	16.12705689
145	630	11.600174
73	425	1.204526176
74	427	17.39270779
75	428	12.75117332
77	430	13.14404974
78	434	13.26807996
79	435	9.144210865
80	437	14.70673873
81	441	16.4859728
82	443	15.2853774
83	444	6.791666657
84	445	12.596574
85	446	3.484234457
86	449	2.301944835
87	451	13.54935227
88	452	0.602801344
89	453	0.132809839
90	457	3.048529403
91	458	13.86498574
92	459	8.591666083
93	463	13.28211878
94	464	15.54463424
95	466	5.167175776
96	469	14.30160954
97	471	4.275740507
98	474	7.382084423
99	482	0
100	484	14.41073626
101	489	3.998829873
102	494	1.25606034
103	495	9.120792236
104	496	15.52092569
105	497	1.947286747
106	498	12.05838386
107	499	8.801113911
108	501	12.67066092
109	502	12.33349837
110	503	2.493508225
111	504	14.01700076
112	505	1.756045046
113	513	7.134537064
114	514	10.51084764
115	519	7.627930675
116	520	9.340335137
117	521	6.171328256
118	524	12.71667826
119	526	3.935096869
120	529	5.581493415
121	531	11.50196603
122	533	8.31538575
123	535	12.92069265
124	539	1.908627425
125	542	1.551620718
126	543	0.575922406
127	544	1.708527748
128	545	0.863501281
129	546	9.993175214
130	548	15.48949457
131	549	22.45388655
132	552	9.226841697
133	553	14.31639301
134	554	11.50480187
135	555	18.36970702
136	561	9.087176962
137	562	4.508668581
138	563	11.03430345
139	566	7.535565629
140	569	0.745997587
141	571	11.50227045
142	572	21.97181375
143	573	8.654728237
144	574	10.76892313
145	575	6.289513281
146	577	5.88088557
147	580	10.63492442
148	581	12.38235192
149	584	6.75358131

146	631	18.50402506
147	632	17.44683445
148	634	17.7299468
149	635	10.93650688
150	636	11.64876685
151	639	15.48550532
152	640	14.3560726
153	643	12.91810697
154	646	9.608211974
155	648	15.89059602
156	654	17.25502963
157	657	12.58412073
158	658	15.51140242
159	659	17.04323282
160	660	11.87196425
161	664	14.34691063
162	668	10.46390971
163	670	19.07491652
164	674	9.519854088
165	675	15.38689605
166	680	13.44021982
167	684	13.68163872
168	686	18.18154131
169	687	15.40661982
170	690	17.56422096
171	691	14.18149992
172	693	13.37405386
173	694	18.36488564
174	706	14.25819374
175	712	13.52969318
176	717	14.80630908
177	724	15.25722464
178	725	12.37019114
179	726	15.36693143
180	730	14.81538584
181	733	14.00267462
182	737	18.44629984
183	740	43.0166919
184	742	13.40375868
185	749	14.2614605
186	751	16.27484017
187	772	17.5068891
188	792	17.20967061

150	585	1.372213163
151	588	8.361306018
152	589	11.83575228
153	592	10.66912733
154	594	1.451937775
155	598	0.735502937
156	601	11.86785851
157	603	11.74510495
158	605	11.1466003
159	606	8.467421071
160	607	4.246218006
161	608	13.45048601
162	609	0.365762145
163	612	6.555691511
164	615	6.983387252
165	617	8.954356504
166	618	4.010438885
167	621	13.58198125
168	622	1.534632503
169	626	8.004219342
170	630	1.543360402
171	631	1.719585854
172	632	3.401659625
173	634	0.612114201
174	635	6.426253242
175	636	6.634411601
176	639	4.011328037
177	640	12.81812907
178	643	0.589593195
179	646	9.41063598
180	648	3.557633766
181	654	15.63847645
182	657	13.45224121
183	658	5.202285451
184	659	10.74477489
185	660	2.71617271
186	664	11.46254598
187	668	10.8623301
188	670	12.28866986
189	674	12.06267236
190	675	6.454675601
191	680	6.391452702
192	683	11.39881625
193	684	1.999414729
194	686	4.926727276
195	687	14.30166328
196	689	12.52662175
197	690	1.828305787
198	691	0
199	693	13.82028406
200	694	2.422970244
201	696	15.04625836
202	702	14.26490528
203	706	1.604673216
204	712	12.74504277
205	717	3.241977932
206	718	15.01516283
207	724	0.449503229
208	725	9.810673374
209	726	0.992621617
210	730	1.343469485
211	733	15.02760451
212	737	8.669938956
213	740	15.95714728
214	742	8.794309412
215	749	10.12547431
216	751	0.886748385
217	758	14.5759444
218	772	3.836480484
219	792	5.408670236

Appendix D
Peak Hour Intersection LOS Calculation Worksheets
Oceanside GPU Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	60	160	190	130	90	220	1150	90	50	340	60
Future Volume (veh/h)	530	60	160	190	130	90	220	1150	90	50	340	60
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		0.94	1.00		0.96	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	558	63	168	200	137	64	232	1211	64	53	358	44
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	552	87	233	268	263	115	233	1590	682	68	1633	196
Arrive On Green	0.16	0.20	0.20	0.08	0.11	0.11	0.13	0.45	0.45	0.04	0.36	0.36
Sat Flow, veh/h	3428	447	1193	3428	2340	1021	1767	3526	1511	1767	4569	548
Grp Volume(v), veh/h	558	0	231	200	101	100	232	1211	64	53	262	140
Grp Sat Flow(s),veh/h/ln	1714	0	1641	1714	1763	1599	1767	1763	1511	1767	1689	1739
Q Serve(g_s), s	16.1	0.0	13.2	5.7	5.4	5.9	13.1	28.7	2.4	3.0	5.4	5.6
Cycle Q Clear(g_c), s	16.1	0.0	13.2	5.7	5.4	5.9	13.1	28.7	2.4	3.0	5.4	5.6
Prop In Lane	1.00		0.73	1.00		0.64	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	552	0	320	268	198	180	233	1590	682	68	1207	622
V/C Ratio(X)	1.01	0.00	0.72	0.75	0.51	0.56	0.99	0.76	0.09	0.78	0.22	0.22
Avail Cap(c_a), veh/h	552	0	525	346	458	416	233	1590	682	88	1207	622
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	0.0	37.7	45.1	41.8	42.0	43.4	23.0	15.7	47.7	22.4	22.4
Incr Delay (d2), s/veh	41.1	0.0	3.1	6.3	2.0	2.7	57.3	3.5	0.3	27.2	0.4	0.8
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	9.6	0.0	5.3	2.7	2.5	2.5	9.1	11.2	0.9	1.8	2.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.0	0.0	40.8	51.4	43.8	44.7	100.7	26.5	16.0	74.8	22.8	23.3
LnGrp LOS	F	A	D	D	D	D	F	C	B	E	C	C
Approach Vol, veh/h		789			401			1507			455	
Approach Delay, s/veh		70.6			47.8			37.4			29.0	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	52.1	12.9	25.3	19.0	42.8	21.2	17.0
Change Period (Y+Rc), s	5.8	7.0	5.1	5.8	5.8	7.0	5.1	5.8
Max Green Setting (Gmax), s	5.0	29.2	10.1	32.0	13.2	21.0	16.1	26.0
Max Q Clear Time (g_c+I1), s	5.0	30.7	7.7	15.2	15.1	7.6	18.1	7.9
Green Ext Time (p_c), s	0.0	0.0	0.2	1.1	0.0	2.5	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

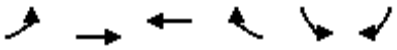
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	90	160	540	110	300	160	1050	370	220	910	120
Future Volume (veh/h)	80	90	160	540	110	300	160	1050	370	220	910	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	95	100	568	116	243	168	1105	307	232	958	104
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	250	201	622	134	280	196	1265	949	253	1249	136
Arrive On Green	0.06	0.13	0.13	0.18	0.26	0.26	0.11	0.36	0.36	0.14	0.39	0.39
Sat Flow, veh/h	1767	1856	1494	3428	522	1094	1767	3526	2646	1767	3192	346
Grp Volume(v), veh/h	84	95	100	568	0	359	168	1105	307	232	529	533
Grp Sat Flow(s),veh/h/ln	1767	1856	1494	1714	0	1616	1767	1763	1323	1767	1763	1775
Q Serve(g_s), s	5.6	5.6	7.4	19.5	0.0	25.5	11.2	35.1	10.1	15.5	31.3	31.3
Cycle Q Clear(g_c), s	5.6	5.6	7.4	19.5	0.0	25.5	11.2	35.1	10.1	15.5	31.3	31.3
Prop In Lane	1.00		1.00	1.00		0.68	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	106	250	201	622	0	414	196	1265	949	253	690	695
V/C Ratio(X)	0.79	0.38	0.50	0.91	0.00	0.87	0.86	0.87	0.32	0.92	0.77	0.77
Avail Cap(c_a), veh/h	153	479	386	651	0	584	264	1265	949	253	690	695
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	0.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	47.3	48.1	48.2	0.0	42.7	52.4	35.9	27.9	50.7	31.8	31.8
Incr Delay (d2), s/veh	13.7	1.0	1.9	16.7	0.0	9.6	14.7	7.2	0.8	34.7	8.0	7.9
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	2.9	2.6	2.8	9.5	0.0	10.9	5.6	15.6	3.2	9.1	14.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	48.3	50.0	64.9	0.0	52.3	67.2	43.2	28.7	85.4	39.7	39.7
LnGrp LOS	E	D	D	E	A	D	E	D	C	F	D	D
Approach Vol, veh/h		279			927			1580			1294	
Approach Delay, s/veh		55.3			60.0			42.9			47.9	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	48.9	26.9	22.0	18.4	52.8	12.3	36.6
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	7.2	27.2	22.8	31.0	17.9	26.5	10.4	43.4
Max Q Clear Time (g_c+I1), s	7.5	37.1	21.5	9.4	13.2	33.3	7.6	27.5
Green Ext Time (p_c), s	0.0	0.0	0.3	0.7	0.1	0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	49.2
HCM 6th LOS	D

Notes

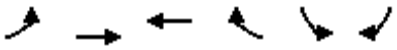
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	350	620	60	110	60
Future Volume (veh/h)	50	350	620	60	110	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	368	653	63	116	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	104	1937	1118	108	284	253
Arrive On Green	0.06	0.55	0.35	0.35	0.16	0.16
Sat Flow, veh/h	1767	3618	3326	311	1767	1572
Grp Volume(v), veh/h	53	368	356	360	116	63
Grp Sat Flow(s),veh/h/ln	1767	1763	1763	1782	1767	1572
Q Serve(g_s), s	0.9	1.6	5.1	5.2	1.8	1.1
Cycle Q Clear(g_c), s	0.9	1.6	5.1	5.2	1.8	1.1
Prop In Lane	1.00			0.17	1.00	1.00
Lane Grp Cap(c), veh/h	104	1937	609	616	284	253
V/C Ratio(X)	0.51	0.19	0.58	0.59	0.41	0.25
Avail Cap(c_a), veh/h	313	3176	1021	1032	1023	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	3.5	8.3	8.3	11.7	11.4
Incr Delay (d2), s/veh	3.8	0.0	0.9	0.9	0.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	1.0	0.6	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	3.6	9.2	9.2	12.7	11.9
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		421	716		179	
Approach Delay, s/veh		5.4	9.2		12.4	
Approach LOS		A	A		B	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	21.6	9.5	6.3	15.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	28.0	18.0	5.5	18.0
Max Q Clear Time (g_c+I1), s	3.6	3.8	2.9	7.2
Green Ext Time (p_c), s	2.1	0.4	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	200	350	400	150	200	400
Future Volume (veh/h)	200	350	400	150	200	400
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	211	368	421	158	211	421
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	265	2220	493	185	334	533
Arrive On Green	0.15	0.63	0.39	0.39	0.19	0.19
Sat Flow, veh/h	1767	3618	1269	476	1767	1572
Grp Volume(v), veh/h	211	368	0	579	211	421
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1745	1767	1572
Q Serve(g_s), s	5.7	2.1	0.0	15.0	5.4	4.6
Cycle Q Clear(g_c), s	5.7	2.1	0.0	15.0	5.4	4.6
Prop In Lane	1.00			0.27	1.00	1.00
Lane Grp Cap(c), veh/h	265	2220	0	679	334	533
V/C Ratio(X)	0.80	0.17	0.00	0.85	0.63	0.79
Avail Cap(c_a), veh/h	374	2882	0	898	731	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	3.8	0.0	13.8	18.5	14.8
Incr Delay (d2), s/veh	7.7	0.0	0.0	6.2	2.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.3	0.0	5.2	2.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.1	3.8	0.0	20.1	20.5	17.5
LnGrp LOS	C	A	A	C	C	B
Approach Vol, veh/h		579	579		632	
Approach Delay, s/veh		12.7	20.1		18.5	
Approach LOS		B	C		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			35.7		13.9	11.9	23.8
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			40.5		20.5	10.5	25.5
Max Q Clear Time (g_c+I1), s			4.1		7.4	7.7	17.0
Green Ext Time (p_c), s			2.2		1.9	0.1	2.2

Intersection Summary		
HCM 6th Ctrl Delay		17.1
HCM 6th LOS		B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	140	130	300	960	1930	330
Future Volume (veh/h)	140	130	300	960	1930	330
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	147	105	316	1011	2032	278
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	170	151	296	2892	2178	938
Arrive On Green	0.10	0.10	0.17	0.82	0.62	0.62
Sat Flow, veh/h	1767	1572	1767	3618	3618	1519
Grp Volume(v), veh/h	147	105	316	1011	2032	278
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1519
Q Serve(g_s), s	13.4	10.5	27.3	11.8	84.7	13.9
Cycle Q Clear(g_c), s	13.4	10.5	27.3	11.8	84.7	13.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	170	151	296	2892	2178	938
V/C Ratio(X)	0.86	0.69	1.07	0.35	0.93	0.30
Avail Cap(c_a), veh/h	358	319	296	3320	2606	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.6	71.3	67.8	3.7	28.1	14.6
Incr Delay (d2), s/veh	5.0	2.1	71.1	0.0	5.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	9.1	17.8	2.9	33.6	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	77.6	73.4	138.9	3.7	33.8	14.6
LnGrp LOS	E	E	F	A	C	B
Approach Vol, veh/h	252			1327	2310	
Approach Delay, s/veh	75.8			35.9	31.5	
Approach LOS	E			D	C	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	141.1		21.8	33.0	108.1
Change Period (Y+Rc), s	7.5		6.1	* 5.7	7.5
Max Green Setting (Gmax), s	153.4		33.0	* 27	120.4
Max Q Clear Time (g_c+I1), s	13.8		15.4	29.3	86.7
Green Ext Time (p_c), s	4.3		0.3	0.0	13.9

Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	100	220	1080	60	60	100	520	530	150	1150	50
Future Volume (veh/h)	90	100	220	1080	60	60	100	520	530	150	1150	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.95	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	95	105	116	1137	63	58	105	547	326	158	1211	48
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	221	442	187	1144	284	261	88	1054	1683	180	1213	48
Arrive On Green	0.13	0.13	0.13	0.32	0.32	0.32	0.05	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	1767	3526	1490	3534	876	807	1767	3526	2633	1767	3453	137
Grp Volume(v), veh/h	95	105	116	1137	0	121	105	547	326	158	618	641
Grp Sat Flow(s),veh/h/ln	1767	1763	1490	1767	0	1683	1767	1763	1317	1767	1763	1827
Q Serve(g_s), s	7.6	4.1	11.2	48.8	0.0	8.0	7.6	19.6	8.1	13.4	53.2	53.3
Cycle Q Clear(g_c), s	7.6	4.1	11.2	48.8	0.0	8.0	7.6	19.6	8.1	13.4	53.2	53.3
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	221	442	187	1144	0	545	88	1054	1683	180	619	641
V/C Ratio(X)	0.43	0.24	0.62	0.99	0.00	0.22	1.19	0.52	0.19	0.88	1.00	1.00
Avail Cap(c_a), veh/h	430	858	363	1144	0	545	88	1054	1683	230	619	641
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.5	60.0	63.1	51.3	0.0	37.5	72.2	44.2	12.4	67.3	49.3	49.3
Incr Delay (d2), s/veh	1.6	0.3	4.0	25.2	0.0	0.4	155.2	0.9	0.1	24.7	35.7	35.4
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	3.4	1.8	4.4	25.0	0.0	3.3	7.2	8.5	4.8	7.2	28.8	29.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.1	60.3	67.1	76.4	0.0	37.9	227.4	45.1	12.5	92.0	84.9	84.7
LnGrp LOS	E	E	E	E	A	D	F	D	B	F	F	F
Approach Vol, veh/h		316			1258			978			1417	
Approach Delay, s/veh		63.6			72.7			53.8			85.6	
Approach LOS		E			E			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.9	51.7		55.0	13.0	59.6		24.4
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	19.8	41.2		49.2	7.6	53.4		37.0
Max Q Clear Time (g_c+I1), s	15.4	21.6		50.8	9.6	55.3		13.2
Green Ext Time (p_c), s	0.1	8.4		0.0	0.0	0.0		1.5

Intersection Summary		
HCM 6th Ctrl Delay	71.9	
HCM 6th LOS	E	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	60	30	380	50	990	50	240	550	1030	380	120
Future Volume (veh/h)	50	60	30	380	50	990	50	240	550	1030	380	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	63	30	400	53	739	53	253	451	1084	400	110
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	168	110	52	406	54	1485	68	684	700	1000	1576	675
Arrive On Green	0.09	0.09	0.09	0.26	0.26	0.26	0.04	0.19	0.19	0.29	0.45	0.45
Sat Flow, veh/h	1767	1159	552	1569	208	2621	1767	3526	1512	3428	3526	1511
Grp Volume(v), veh/h	53	0	93	453	0	739	53	253	451	1084	400	110
Grp Sat Flow(s),veh/h/ln	1767	0	1711	1777	0	1310	1767	1763	1512	1714	1763	1511
Q Serve(g_s), s	3.6	0.0	6.8	33.0	0.0	22.9	3.9	8.1	25.2	37.9	9.2	5.6
Cycle Q Clear(g_c), s	3.6	0.0	6.8	33.0	0.0	22.9	3.9	8.1	25.2	37.9	9.2	5.6
Prop In Lane	1.00		0.32	0.88		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	0	162	460	0	1485	68	684	700	1000	1576	675
V/C Ratio(X)	0.32	0.00	0.57	0.99	0.00	0.50	0.78	0.37	0.64	1.08	0.25	0.16
Avail Cap(c_a), veh/h	373	0	361	460	0	1485	135	684	700	1000	1576	675
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	0.0	56.3	47.9	0.0	18.3	61.9	45.5	26.4	46.0	22.4	21.4
Incr Delay (d2), s/veh	1.1	0.0	3.2	38.1	0.0	0.3	17.0	0.5	2.3	54.1	0.1	0.2
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	3.1	19.0	0.0	6.6	2.0	3.5	15.1	23.0	3.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	0.0	59.4	86.1	0.0	18.6	78.9	46.0	28.7	100.1	22.5	21.6
LnGrp LOS	E	A	E	F	A	B	E	D	C	F	C	C
Approach Vol, veh/h		146			1192			757			1594	
Approach Delay, s/veh		58.2			44.2			38.0			75.2	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	43.0	31.0		16.9	10.1	63.9		39.0
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.4
Max Green Setting (Gmax), s	37.9	25.2		27.4	9.9	53.2		33.6
Max Q Clear Time (g_c+I1), s	39.9	27.2		8.8	5.9	11.2		35.0
Green Ext Time (p_c), s	0.0	0.0		0.6	0.0	4.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.9
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	50	70	90	70	30	70	580	70	120	1140	1240
Future Volume (veh/h)	360	50	70	90	70	30	70	580	70	120	1140	1240
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		0.96	1.00		1.00	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	379	53	0	95	74	31	74	611	74	126	1200	1305
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	585	317		92	72	138	94	832	101	325	1424	1590
Arrive On Green	0.17	0.17	0.00	0.09	0.09	0.09	0.05	0.26	0.26	0.18	0.40	0.40
Sat Flow, veh/h	3428	1856	0	1015	790	1515	1767	3167	383	1767	3526	2768
Grp Volume(v), veh/h	379	53	0	169	0	31	74	340	345	126	1200	1305
Grp Sat Flow(s),veh/h/ln	1714	1856	0	1805	0	1515	1767	1763	1787	1767	1763	1384
Q Serve(g_s), s	7.7	1.8	0.0	6.8	0.0	1.4	3.1	13.2	13.2	4.7	23.0	28.4
Cycle Q Clear(g_c), s	7.7	1.8	0.0	6.8	0.0	1.4	3.1	13.2	13.2	4.7	23.0	28.4
Prop In Lane	1.00		0.00	0.56		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	585	317		164	0	138	94	463	470	325	1424	1590
V/C Ratio(X)	0.65	0.17		1.03	0.00	0.22	0.78	0.73	0.74	0.39	0.84	0.82
Avail Cap(c_a), veh/h	1238	670		164	0	138	118	667	676	325	1424	1590
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	26.5	0.0	34.0	0.0	31.5	34.9	25.2	25.2	26.8	20.1	12.8
Incr Delay (d2), s/veh	1.2	0.2	0.0	78.2	0.0	0.8	18.1	3.3	3.3	0.3	4.9	3.7
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	3.1	0.8	0.0	6.5	0.0	0.5	1.7	5.5	5.6	1.8	8.8	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	26.7	0.0	112.1	0.0	32.3	53.1	28.5	28.5	27.1	25.1	16.5
LnGrp LOS	C	C		F	A	C	D	C	C	C	C	B
Approach Vol, veh/h		432			200			759			2631	
Approach Delay, s/veh		29.7			99.8			30.9			20.9	
Approach LOS		C			F			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	25.9		16.8	9.4	36.4		12.2
Change Period (Y+Rc), s	6.2	* 6.2		4.0	5.4	6.2		5.4
Max Green Setting (Gmax), s	6.3	* 28		27.0	5.0	30.2		6.8
Max Q Clear Time (g_c+I1), s	10.7	15.2		9.7	5.1	30.4		8.8
Green Ext Time (p_c), s	0.0	4.4		1.5	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	320	80	90	580	340	130	290	40	470	700	160
Future Volume (veh/h)	120	320	80	90	580	340	130	290	40	470	700	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.93	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	126	337	56	95	611	282	137	305	40	495	737	160
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	175	1004	434	119	698	322	165	534	69	525	1076	234
Arrive On Green	0.05	0.28	0.28	0.07	0.30	0.30	0.09	0.17	0.17	0.30	0.38	0.38
Sat Flow, veh/h	3428	3526	1525	1767	2319	1069	1767	3108	402	1767	2865	622
Grp Volume(v), veh/h	126	337	56	95	464	429	137	171	174	495	453	444
Grp Sat Flow(s),veh/h/ln	1714	1763	1525	1767	1763	1625	1767	1763	1748	1767	1763	1724
Q Serve(g_s), s	4.3	9.0	3.3	6.3	29.9	29.9	9.1	10.6	10.9	32.7	25.8	25.8
Cycle Q Clear(g_c), s	4.3	9.0	3.3	6.3	29.9	29.9	9.1	10.6	10.9	32.7	25.8	25.8
Prop In Lane	1.00		1.00	1.00		0.66	1.00		0.23	1.00		0.36
Lane Grp Cap(c), veh/h	175	1004	434	119	530	489	165	303	300	525	662	648
V/C Ratio(X)	0.72	0.34	0.13	0.80	0.88	0.88	0.83	0.57	0.58	0.94	0.68	0.68
Avail Cap(c_a), veh/h	175	1004	434	182	563	520	262	504	500	593	835	817
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	33.8	31.7	54.9	39.7	39.7	53.3	45.4	45.5	41.0	31.4	31.4
Incr Delay (d2), s/veh	13.4	0.4	0.3	13.2	15.2	16.4	11.8	2.3	2.5	22.3	2.1	2.2
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	2.2	3.8	1.2	3.2	14.6	13.7	4.5	4.8	4.9	17.0	11.0	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	34.2	32.0	68.2	54.9	56.0	65.0	47.7	48.0	63.3	33.5	33.5
LnGrp LOS	E	C	C	E	D	E	E	D	D	E	C	C
Approach Vol, veh/h		519			988			482			1392	
Approach Delay, s/veh		42.5			56.7			52.7			44.1	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	39.8	16.3	50.3	11.2	41.8	40.6	25.9
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	12.3	32.0	17.7	56.6	6.1	38.2	40.1	34.2
Max Q Clear Time (g_c+I1), s	8.3	11.0	11.1	27.8	6.3	31.9	34.7	12.9
Green Ext Time (p_c), s	0.1	3.9	0.2	8.8	0.0	4.0	0.8	2.6

Intersection Summary	
HCM 6th Ctrl Delay	48.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	470	280	250	460	100	150
Future Volume (veh/h)	470	280	250	460	100	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1670	1670	1670	1670	1670	1670
Adj Flow Rate, veh/h	495	0	263	0	105	158
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	734		429		155	820
Arrive On Green	0.24	0.00	0.26	0.00	0.10	0.49
Sat Flow, veh/h	3086	1415	1670	0	1590	1670
Grp Volume(v), veh/h	495	0	263	0	105	158
Grp Sat Flow(s),veh/h/ln	1543	1415	1670	0	1590	1670
Q Serve(g_s), s	4.4	0.0	4.2	0.0	1.9	1.6
Cycle Q Clear(g_c), s	4.4	0.0	4.2	0.0	1.9	1.6
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	734		429		155	820
V/C Ratio(X)	0.67		0.61		0.68	0.19
Avail Cap(c_a), veh/h	1961		949		628	820
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	0.0	9.8	0.0	13.0	4.3
Incr Delay (d2), s/veh	0.4	0.0	1.4	0.0	5.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.3	0.0	0.8	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.7	0.0	11.2	0.0	18.2	4.4
LnGrp LOS	B		B		B	A
Approach Vol, veh/h	495		263			263
Approach Delay, s/veh	10.7		11.2			9.9
Approach LOS	B		B			A

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.0	11.8		11.1		18.8
Change Period (Y+Rc), s	4.1	4.1		4.0		4.1
Max Green Setting (Gmax), s	11.8	17.0		19.0		11.8
Max Q Clear Time (g_c+I1), s	3.9	6.2		6.4		3.6
Green Ext Time (p_c), s	0.1	1.1		0.9		0.5

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	300	220	990	610	0	0
Future Volume (veh/h)	300	220	990	610	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856		
Adj Flow Rate, veh/h	316	160	1042	642		
Peak Hour Factor	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	3	3	3	3		
Cap, veh/h	441	197	2288	2849		
Arrive On Green	0.13	0.13	0.56	0.56		
Sat Flow, veh/h	3618	1572	3428	5233		
Grp Volume(v), veh/h	316	160	1042	642		
Grp Sat Flow(s),veh/h/ln	1763	1572	1714	1689		
Q Serve(g_s), s	3.4	4.0	7.6	2.5		
Cycle Q Clear(g_c), s	3.4	4.0	7.6	2.5		
Prop In Lane		1.00	1.00			
Lane Grp Cap(c), veh/h	441	197	2288	2849		
V/C Ratio(X)	0.72	0.81	0.46	0.23		
Avail Cap(c_a), veh/h	441	197	2288	2849		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.8	17.0	5.5	4.4		
Incr Delay (d2), s/veh	9.6	29.6	0.7	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	2.9	1.8	0.6		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.4	46.7	6.2	4.6		
LnGrp LOS	C	D	A	A		
Approach Vol, veh/h	476			1684		
Approach Delay, s/veh	33.2			5.6		
Approach LOS	C			A		

Timer - Assigned Phs		2		4
Phs Duration (G+Y+Rc), s		28.2		11.8
Change Period (Y+Rc), s		* 5.7		6.8
Max Green Setting (Gmax), s		* 23		5.0
Max Q Clear Time (g_c+I1), s		9.6		6.0
Green Ext Time (p_c), s		4.8		0.0

Intersection Summary				
HCM 6th Ctrl Delay			11.7	
HCM 6th LOS			B	

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	500	130	1010	1460	110	30
Future Volume (veh/h)	500	130	1010	1460	110	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	526	136	1063	1537	116	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1456	781	951	2663	148	
Arrive On Green	0.41	0.41	0.28	0.76	0.08	0.00
Sat Flow, veh/h	3618	1572	3428	3618	1767	1572
Grp Volume(v), veh/h	526	136	1063	1537	116	0
Grp Sat Flow(s),veh/h/ln	1763	1572	1714	1763	1767	1572
Q Serve(g_s), s	9.0	4.2	24.3	16.6	5.6	0.0
Cycle Q Clear(g_c), s	9.0	4.2	24.3	16.6	5.6	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1456	781	951	2663	148	
V/C Ratio(X)	0.36	0.17	1.12	0.58	0.79	
Avail Cap(c_a), veh/h	2254	1137	951	3462	603	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.7	12.2	31.6	4.6	39.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	67.1	0.9	3.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	1.5	17.8	3.0	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.8	12.2	98.7	5.5	42.8	0.0
LnGrp LOS	B	B	F	A	D	
Approach Vol, veh/h	662			2600	116	
Approach Delay, s/veh	16.6			43.6	42.8	
Approach LOS	B			D	D	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	30.0	44.2			74.2	13.4
Change Period (Y+Rc), s	* 5.7	8.0			8.0	6.1
Max Green Setting (Gmax), s	* 24	56.0			86.0	29.9
Max Q Clear Time (g_c+I1), s	26.3	11.0			18.6	7.6
Green Ext Time (p_c), s	0.0	2.1			47.6	0.1

Intersection Summary		
HCM 6th Ctrl Delay	38.3	
HCM 6th LOS	D	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1480	70	100	2140	70	80	220	120	80	90	70
Future Volume (veh/h)	60	1480	70	100	2140	70	80	220	120	80	90	70
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		0.97	1.00		0.95	1.00		1.00
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	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670
Adj Flow Rate, veh/h	61	1495	49	101	2162	56	81	222	96	81	91	52
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	710	1780	794	229	1239	539	244	576	170	244	401	315
Arrive On Green	0.23	0.56	0.56	0.07	0.39	0.39	0.08	0.13	0.13	0.08	0.13	0.13
Sat Flow, veh/h	3086	3173	1415	3086	3173	1380	3086	4559	1341	3086	3173	2491
Grp Volume(v), veh/h	61	1495	49	101	2162	56	81	222	96	81	91	52
Grp Sat Flow(s),veh/h/ln	1543	1586	1415	1543	1586	1380	1543	1520	1341	1543	1586	1245
Q Serve(g_s), s	2.5	62.6	2.5	5.0	62.5	3.0	4.0	7.2	10.8	4.0	4.1	1.9
Cycle Q Clear(g_c), s	2.5	62.6	2.5	5.0	62.5	3.0	4.0	7.2	10.8	4.0	4.1	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	710	1780	794	229	1239	539	244	576	170	244	401	315
V/C Ratio(X)	0.09	0.84	0.06	0.44	1.74	0.10	0.33	0.39	0.57	0.33	0.23	0.17
Avail Cap(c_a), veh/h	710	1780	794	231	1239	539	251	1311	386	251	912	716
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	0.44	0.44	0.44	0.91	0.91	0.91	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	29.1	16.0	70.9	48.8	16.5	69.7	64.2	65.8	69.7	62.9	25.2
Incr Delay (d2), s/veh	0.0	5.0	0.1	0.2	336.4	0.2	0.3	0.1	1.0	0.3	0.1	0.1
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	0.9	23.2	0.9	1.9	81.4	1.4	1.6	2.8	3.8	1.6	1.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	34.1	16.1	71.1	385.2	16.7	70.0	64.3	66.8	70.0	63.0	25.3
LnGrp LOS	D	C	B	E	F	B	E	E	E	E	E	C
Approach Vol, veh/h		1605			2319			399			224	
Approach Delay, s/veh		34.1			362.6			66.1			56.8	
Approach LOS		C			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	97.8	18.3	26.3	44.8	70.5	18.3	26.3
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.1	8.0	* 8	* 5.7	6.1
Max Green Setting (Gmax), s	* 13	63.5	* 13	46.0	13.0	* 63	* 13	46.0
Max Q Clear Time (g_c+I1), s	7.0	64.6	6.0	6.1	4.5	64.5	6.0	12.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	205.6
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	850	0	0	1650	240	0	0	0	290	0	530
Future Volume (veh/h)	250	850	0	0	1650	240	0	0	0	290	0	530
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		1.00
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	1856	1856	0	0	1856	1856	1856	1856	1856	1856	0	1856
Adj Flow Rate, veh/h	263	895	0	0	1737	221	0	0	0	305	0	463
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, %	3	3	0	0	3	3	3	3	3	3	0	3
Cap, veh/h	2014	3393	0	0	1190	531	0	1	0	0	0	0
Arrive On Green	0.59	0.96	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3428	3618	0	0	3618	1572	0	1856	0		0	
Grp Volume(v), veh/h	263	895	0	0	1737	221	0	0	0		0.0	
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1572	0	1856	0			
Q Serve(g_s), s	5.5	2.0	0.0	0.0	54.0	15.2	0.0	0.0	0.0			
Cycle Q Clear(g_c), s	5.5	2.0	0.0	0.0	54.0	15.2	0.0	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00			
Lane Grp Cap(c), veh/h	2014	3393	0	0	1190	531	0	1	0			
V/C Ratio(X)	0.13	0.26	0.00	0.00	1.46	0.42	0.00	0.00	0.00			
Avail Cap(c_a), veh/h	2014	3393	0	0	1190	531	0	510	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.43	0.43	0.00	0.00	0.09	0.09	0.00	0.00	0.00			
Uniform Delay (d), s/veh	14.7	0.2	0.0	0.0	44.1	33.4	0.0	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	207.4	0.2	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			
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.0	54.9	5.3	0.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.2	0.0	0.0	251.4	33.6	0.0	0.0	0.0			
LnGrp LOS	B	A	A	A	F	C	A	A	A			
Approach Vol, veh/h		1158			1958			0				
Approach Delay, s/veh		3.5			226.9			0.0				
Approach LOS		A			F							

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		160.0			100.0	60.0		0.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		4.6				
Max Green Setting (Gmax), s		78.4			20.2	* 54		44.0				
Max Q Clear Time (g_c+I1), s		4.0			7.5	56.0		0.0				
Green Ext Time (p_c), s		20.5			0.7	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	143.9	
HCM 6th LOS	F	

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	770	330	490	1540	190	330	440	430	60	300	110
Future Volume (veh/h)	80	770	330	490	1540	190	330	440	430	60	300	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	811	258	516	1621	179	347	463	345	63	316	84
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	661	283	1145	1556	788	317	529	392	241	703	183
Arrive On Green	0.18	0.38	0.38	0.33	0.44	0.44	0.09	0.28	0.28	0.07	0.26	0.26
Sat Flow, veh/h	1767	3526	1511	3428	3526	1535	3428	1901	1411	3428	2745	716
Grp Volume(v), veh/h	84	811	258	516	1621	179	347	429	379	63	201	199
Grp Sat Flow(s),veh/h/ln	1767	1763	1511	1714	1763	1535	1714	1763	1549	1714	1763	1699
Q Serve(g_s), s	6.9	30.0	20.9	18.9	70.6	10.3	14.8	37.2	37.4	2.8	15.3	15.8
Cycle Q Clear(g_c), s	6.9	30.0	20.9	18.9	70.6	10.3	14.8	37.2	37.4	2.8	15.3	15.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.42
Lane Grp Cap(c), veh/h	162	661	283	1145	1556	788	317	490	431	241	451	435
V/C Ratio(X)	0.52	1.23	0.91	0.45	1.04	0.23	1.09	0.88	0.88	0.26	0.44	0.46
Avail Cap(c_a), veh/h	166	661	283	1145	1556	788	317	557	490	261	529	510
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.17	0.17	0.17	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	62.2	50.0	31.8	41.8	44.7	21.6	72.6	55.1	55.2	70.4	50.0	50.2
Incr Delay (d2), s/veh	0.9	112.4	29.0	0.1	22.9	0.1	78.2	12.2	14.1	0.2	0.2	0.3
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	2.9	20.8	8.3	7.8	33.9	3.7	9.9	17.8	16.0	1.2	6.7	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.0	162.4	60.8	41.8	67.6	21.7	150.8	67.3	69.3	70.6	50.2	50.4
LnGrp LOS	E	F	E	D	F	C	F	E	E	E	D	D
Approach Vol, veh/h		1153			2316			1155			463	
Approach Delay, s/veh		132.4			58.3			93.1			53.1	
Approach LOS		F			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	36.0	19.0	45.5	18.8	76.6	15.5	49.1
Change Period (Y+Rc), s	6.0	* 6	* 4.2	4.6	* 4.2	6.0	* 4.2	4.6
Max Green Setting (Gmax), s	3.5	* 30	* 15	48.0	* 15	63.2	* 12	50.6
Max Q Clear Time (g_c+I1), s	0.9	32.0	16.8	17.8	8.9	72.6	4.8	39.4
Green Ext Time (p_c), s	2.9	0.0	0.0	1.3	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	82.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	870	310	230	1540	40	220	210	170	60	340	340
Future Volume (veh/h)	190	870	310	230	1540	40	220	210	170	60	340	340
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		0.98	1.00		0.96	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	194	888	256	235	1571	40	224	214	129	61	347	253
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	628	1834	800	277	1426	36	279	435	249	134	391	280
Arrive On Green	0.18	0.52	0.52	0.08	0.41	0.41	0.08	0.20	0.20	0.08	0.20	0.20
Sat Flow, veh/h	3428	3526	1538	3428	3510	89	3428	2128	1217	1767	1961	1404
Grp Volume(v), veh/h	194	888	256	235	787	824	224	175	168	61	311	289
Grp Sat Flow(s),veh/h/ln	1714	1763	1538	1714	1763	1837	1714	1763	1581	1767	1763	1603
Q Serve(g_s), s	7.8	25.9	15.3	10.8	65.0	65.0	10.3	14.1	15.1	5.3	27.5	28.2
Cycle Q Clear(g_c), s	7.8	25.9	15.3	10.8	65.0	65.0	10.3	14.1	15.1	5.3	27.5	28.2
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.77	1.00		0.88
Lane Grp Cap(c), veh/h	628	1834	800	277	716	746	279	361	324	134	351	319
V/C Ratio(X)	0.31	0.48	0.32	0.85	1.10	1.10	0.80	0.49	0.52	0.46	0.89	0.90
Avail Cap(c_a), veh/h	628	1834	800	317	716	746	364	486	436	145	443	403
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)	0.16	0.16	0.16	0.10	0.10	0.10	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	24.6	22.1	72.6	47.5	47.5	72.2	56.2	56.6	70.8	62.3	62.6
Incr Delay (d2), s/veh	0.0	0.1	0.2	1.9	47.3	49.2	6.3	0.3	0.4	0.9	14.2	18.0
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	3.3	10.3	5.6	4.7	36.4	38.3	4.7	6.3	6.0	2.4	13.6	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	24.8	22.3	74.5	94.8	96.7	78.5	56.5	57.0	71.7	76.5	80.6
LnGrp LOS	E	C	C	E	F	F	E	E	E	E	E	F
Approach Vol, veh/h		1338			1846			567			661	
Approach Delay, s/veh		28.9			93.1			65.4			77.8	
Approach LOS		C			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	89.2	17.2	36.5	35.3	71.0	16.3	37.3
Change Period (Y+Rc), s	* 4.2	6.0	* 4.2	4.6	6.0	* 6	* 4.2	4.6
Max Green Setting (Gmax), s	* 13	69.0	* 17	40.2	18.8	* 65	* 13	44.1
Max Q Clear Time (g_c+I1), s	12.8	27.9	12.3	30.2	9.8	67.0	7.3	17.1
Green Ext Time (p_c), s	0.1	21.0	0.2	1.7	0.2	0.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	67.8
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	960	90	140	1650	120	100	200	160	120	240	110
Future Volume (veh/h)	80	960	90	140	1650	120	100	200	160	120	240	110
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		0.98	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	83	1000	75	146	1719	104	104	208	126	125	250	90
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	251	1468	755	346	1617	822	255	244	148	256	425	463
Arrive On Green	0.07	0.42	0.42	0.10	0.46	0.46	0.07	0.23	0.23	0.07	0.23	0.23
Sat Flow, veh/h	3428	3526	1534	3428	3526	1536	3428	1066	646	3428	1856	1519
Grp Volume(v), veh/h	83	1000	75	146	1719	104	104	0	334	125	250	90
Grp Sat Flow(s),veh/h/ln	1714	1763	1534	1714	1763	1536	1714	0	1712	1714	1856	1519
Q Serve(g_s), s	3.7	37.0	2.2	6.4	73.4	5.4	4.6	0.0	29.9	5.6	19.2	7.0
Cycle Q Clear(g_c), s	3.7	37.0	2.2	6.4	73.4	5.4	4.6	0.0	29.9	5.6	19.2	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	251	1468	755	346	1617	822	255	0	391	256	425	463
V/C Ratio(X)	0.33	0.68	0.10	0.42	1.06	0.13	0.41	0.00	0.85	0.49	0.59	0.19
Avail Cap(c_a), veh/h	257	1468	755	346	1617	822	257	0	460	257	499	523
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)	0.85	0.85	0.85	1.00	1.00	1.00	0.99	0.00	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.4	38.1	8.2	67.5	43.3	18.7	70.7	0.0	59.1	71.1	54.9	41.4
Incr Delay (d2), s/veh	0.2	2.2	0.2	0.3	41.4	0.3	0.4	0.0	11.2	0.5	0.5	0.1
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	15.8	1.0	2.8	39.2	2.0	2.1	0.0	14.2	2.5	8.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.7	40.3	8.4	67.8	84.7	19.0	71.1	0.0	70.3	71.6	55.4	41.5
LnGrp LOS	E	D	A	E	F	B	E	A	E	E	E	D
Approach Vol, veh/h		1158			1969			438			465	
Approach Delay, s/veh		40.4			80.0			70.5			57.1	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.2	74.6	17.6	43.7	17.4	81.4	17.7	43.6
Change Period (Y+Rc), s	8.0	* 8	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0
Max Green Setting (Gmax), s	12.3	* 67	* 12	43.0	* 12	66.6	* 12	43.0
Max Q Clear Time (g_c+I1), s	9.4	39.0	6.6	21.2	5.7	75.4	7.6	31.9
Green Ext Time (p_c), s	0.1	17.2	0.1	0.9	0.0	0.0	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	64.9
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	800	70	650	1510	650	90	550	280	690	850	370
Future Volume (veh/h)	510	800	70	650	1510	650	90	550	280	690	850	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	537	842	61	684	1589	616	95	579	258	726	895	271
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	414	1615	603	521	1773	708	253	601	267	375	1028	635
Arrive On Green	0.12	0.32	0.32	0.15	0.35	0.35	0.07	0.26	0.26	0.11	0.29	0.29
Sat Flow, veh/h	3428	5066	1528	3428	5066	1531	3428	2346	1044	3428	3526	1526
Grp Volume(v), veh/h	537	842	61	684	1589	616	95	435	402	726	895	271
Grp Sat Flow(s),veh/h/ln	1714	1689	1528	1714	1689	1531	1714	1763	1627	1714	1763	1526
Q Serve(g_s), s	19.3	21.7	4.0	24.3	47.5	56.0	4.2	39.0	39.1	17.5	38.6	20.3
Cycle Q Clear(g_c), s	19.3	21.7	4.0	24.3	47.5	56.0	4.2	39.0	39.1	17.5	38.6	20.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	414	1615	603	521	1773	708	253	452	417	375	1028	635
V/C Ratio(X)	1.30	0.52	0.10	1.31	0.90	0.87	0.37	0.96	0.96	1.94	0.87	0.43
Avail Cap(c_a), veh/h	414	1615	603	521	1773	708	332	452	417	375	1028	635
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	44.5	30.7	67.8	49.2	39.1	70.6	58.7	58.8	71.3	53.8	33.6
Incr Delay (d2), s/veh	151.2	1.2	0.3	154.4	7.5	13.8	0.9	33.9	36.1	431.0	10.0	2.1
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	16.9	9.0	1.5	21.5	20.4	23.6	1.9	21.2	19.8	30.0	18.2	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	221.5	45.7	31.1	222.2	56.8	52.9	71.5	92.7	94.9	502.2	63.8	35.7
LnGrp LOS	F	D	C	F	E	D	E	F	F	F	E	D
Approach Vol, veh/h		1440			2889			932			1892	
Approach Delay, s/veh		110.7			95.1			91.5			228.0	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	59.0	17.5	53.5	25.0	64.0	23.2	47.8
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 24	51.0	* 16	43.0	* 19	56.0	* 18	41.0
Max Q Clear Time (g_c+I1), s	26.3	23.7	6.2	40.6	21.3	58.0	19.5	41.1
Green Ext Time (p_c), s	0.0	14.1	0.1	2.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	132.9
HCM 6th LOS	F

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1020	730	900	2120	50	650	40	720	30	60	50
Future Volume (veh/h)	40	1020	730	900	2120	50	650	40	720	30	60	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.97	1.00		0.92
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	1074	657	947	2232	52	714	0	545	32	63	44
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	103	1058	806	906	1821	42	803	0	761	134	74	52
Arrive On Green	0.06	0.30	0.30	0.26	0.52	0.52	0.23	0.00	0.23	0.08	0.08	0.08
Sat Flow, veh/h	1767	3526	1496	3428	3518	82	3534	0	1518	1767	980	684
Grp Volume(v), veh/h	42	1074	657	947	1113	1171	714	0	545	32	0	107
Grp Sat Flow(s),veh/h/ln	1767	1763	1496	1714	1763	1837	1767	0	1518	1767	0	1664
Q Serve(g_s), s	3.7	48.0	48.0	42.3	82.8	82.8	31.3	0.0	0.9	2.7	0.0	10.2
Cycle Q Clear(g_c), s	3.7	48.0	48.0	42.3	82.8	82.8	31.3	0.0	0.9	2.7	0.0	10.2
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	103	1058	806	906	912	951	803	0	761	134	0	127
V/C Ratio(X)	0.41	1.02	0.82	1.05	1.22	1.23	0.89	0.00	0.72	0.24	0.00	0.85
Avail Cap(c_a), veh/h	121	1058	806	906	912	951	906	0	805	141	0	133
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	0.65	0.65	0.65	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.7	56.0	29.2	58.9	38.6	38.6	59.9	0.0	31.7	69.6	0.0	73.0
Incr Delay (d2), s/veh	1.0	31.6	8.9	36.8	105.6	110.6	9.3	0.0	2.4	0.3	0.0	33.6
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	1.7	25.1	28.5	22.3	59.8	63.6	14.7	0.0	16.2	1.3	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.7	87.6	38.1	95.7	144.3	149.2	69.1	0.0	34.0	69.9	0.0	106.6
LnGrp LOS	E	F	D	F	F	F	E	A	C	E	A	F
Approach Vol, veh/h		1773			3231			1259			139	
Approach Delay, s/veh		68.9			131.8			54.0			98.1	
Approach LOS		E			F			D			F	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	18.3	54.0	16.8	13.5	88.8	40.9
Change Period (Y+Rc), s	6.0	* 6	4.6	* 4.2	6.0	4.6
Max Green Setting (Gmax), s	38.8	* 48	12.8	* 11	75.8	41.0
Max Q Clear Time (g_c+I1), s	44.3	50.0	12.2	5.7	84.8	33.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	98.4
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	700	750	290	110	1770	340	310	200	150	350	1030	930
Future Volume (veh/h)	700	750	290	110	1770	340	310	200	150	350	1030	930
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		0.98	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	737	789	223	116	1863	280	326	211	121	368	1084	884
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	553	2023	752	1497	3475	1203	304	1080	1154	317	1093	727
Arrive On Green	0.16	0.40	0.40	0.44	0.69	0.69	0.09	0.31	0.31	0.09	0.31	0.31
Sat Flow, veh/h	3428	5066	1533	3428	5066	1542	3428	3526	1527	3428	3526	1528
Grp Volume(v), veh/h	737	789	223	116	1863	280	326	211	121	368	1084	884
Grp Sat Flow(s),veh/h/ln	1714	1689	1533	1714	1689	1542	1714	1763	1527	1714	1763	1528
Q Serve(g_s), s	25.8	17.7	9.3	3.2	29.2	7.9	14.2	7.1	1.6	14.8	49.0	49.6
Cycle Q Clear(g_c), s	25.8	17.7	9.3	3.2	29.2	7.9	14.2	7.1	1.6	14.8	49.0	49.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	553	2023	752	1497	3475	1203	304	1080	1154	317	1093	727
V/C Ratio(X)	1.33	0.39	0.30	0.08	0.54	0.23	1.07	0.20	0.10	1.16	0.99	1.22
Avail Cap(c_a), veh/h	553	2023	752	1497	3475	1203	304	1080	1154	317	1093	727
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.1	34.2	31.8	26.3	12.5	4.8	72.9	41.0	17.8	72.6	55.0	42.5
Incr Delay (d2), s/veh	162.0	0.6	1.0	0.0	0.6	0.5	71.8	0.0	0.0	101.4	25.1	109.5
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	28.4	7.2	4.8	1.3	10.0	2.4	9.2	3.1	2.1	11.0	25.4	49.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	229.1	34.8	32.8	26.3	13.1	5.3	144.7	41.0	17.8	174.0	80.1	152.0
LnGrp LOS	F	C	C	C	B	A	F	D	B	F	F	F
Approach Vol, veh/h		1749			2259			658			2336	
Approach Delay, s/veh		116.4			12.8			88.1			122.1	
Approach LOS		F			B			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.6	69.9	18.4	54.5	30.0	117.5	19.0	53.9
Change Period (Y+Rc), s	6.0	* 6	* 4.2	4.9	* 4.2	6.0	* 4.2	4.9
Max Green Setting (Gmax), s	13.6	* 64	* 14	49.6	* 26	51.1	* 15	49.0
Max Q Clear Time (g_c+I1), s	15.2	19.7	16.2	51.6	27.8	31.2	16.8	9.1
Green Ext Time (p_c), s	0.1	18.4	0.0	0.0	0.0	18.7	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	82.2
HCM 6th LOS	F

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	80	120	210	70	50	240	0	0	320	50
Future Volume (veh/h)	60	0	80	120	210	70	50	240	0	0	320	50
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		0.92	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	63	4	66	126	221	54	53	253	0	0	337	46
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, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	111	7	171	245	385	91	74	1150	0	0	836	114
Arrive On Green	0.07	0.07	0.07	0.14	0.14	0.14	0.04	0.62	0.00	0.00	0.52	0.52
Sat Flow, veh/h	1666	106	1572	1767	2776	656	1767	1856	0	0	1593	217
Grp Volume(v), veh/h	67	0	66	126	138	137	53	253	0	0	0	383
Grp Sat Flow(s),veh/h/ln	1772	0	1572	1767	1763	1669	1767	1856	0	0	0	1811
Q Serve(g_s), s	3.2	0.0	3.4	5.7	6.3	6.6	2.5	5.2	0.0	0.0	0.0	11.0
Cycle Q Clear(g_c), s	3.2	0.0	3.4	5.7	6.3	6.6	2.5	5.2	0.0	0.0	0.0	11.0
Prop In Lane	0.94		1.00	1.00		0.39	1.00		0.00	0.00		0.12
Lane Grp Cap(c), veh/h	118	0	171	245	245	232	74	1150	0	0	0	950
V/C Ratio(X)	0.57	0.00	0.39	0.51	0.56	0.59	0.72	0.22	0.00	0.00	0.00	0.40
Avail Cap(c_a), veh/h	165	0	212	514	512	485	173	1150	0	0	0	950
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	1.00	1.00	1.00	1.00	0.74	0.74	0.00	0.00	0.00	0.76
Uniform Delay (d), s/veh	38.9	0.0	35.7	34.3	34.6	34.8	40.7	7.2	0.0	0.0	0.0	12.3
Incr Delay (d2), s/veh	4.2	0.0	1.4	1.7	2.0	2.4	9.3	0.3	0.0	0.0	0.0	1.0
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	1.5	0.0	1.3	2.5	2.8	2.8	1.3	1.8	0.0	0.0	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	37.1	36.0	36.6	37.2	50.0	7.5	0.0	0.0	0.0	13.3
LnGrp LOS	D	A	D	D	D	D	D	A	A	A	A	B
Approach Vol, veh/h		133			401			306			383	
Approach Delay, s/veh		40.1			36.6			14.9			13.3	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	2		4	5	6		8
Phs Duration (G+Y+Rc), s	58.3		10.7	8.2	50.1		16.9
Change Period (Y+Rc), s	5.0		5.0	4.6	5.0		5.0
Max Green Setting (Gmax), s	38.0		8.0	8.4	25.0		25.0
Max Q Clear Time (g_c+I1), s	7.2		5.4	4.5	13.0		8.6
Green Ext Time (p_c), s	2.1		0.1	0.0	2.6		1.9

Intersection Summary		
HCM 6th Ctrl Delay		24.3
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	170	30	190	520	250	60	70	260	220	90	40
Future Volume (veh/h)	40	170	30	190	520	250	60	70	260	220	90	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	179	32	200	547	195	63	74	201	183	163	40
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	615	107	250	975	711	152	178	497	335	271	66
Arrive On Green	0.07	0.21	0.21	0.14	0.28	0.28	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1767	2969	517	1767	3526	1492	834	980	1509	1767	1426	350
Grp Volume(v), veh/h	42	104	107	200	547	195	137	0	201	183	0	203
Grp Sat Flow(s),veh/h/ln	1767	1763	1723	1767	1763	1492	1814	0	1509	1767	0	1776
Q Serve(g_s), s	1.6	3.4	3.6	7.6	9.2	5.5	4.6	0.0	7.2	6.5	0.0	7.2
Cycle Q Clear(g_c), s	1.6	3.4	3.6	7.6	9.2	5.5	4.6	0.0	7.2	6.5	0.0	7.2
Prop In Lane	1.00		0.30	1.00		1.00	0.46		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	128	365	357	250	975	711	330	0	497	335	0	337
V/C Ratio(X)	0.33	0.29	0.30	0.80	0.56	0.27	0.42	0.00	0.40	0.55	0.00	0.60
Avail Cap(c_a), veh/h	264	603	589	1058	2790	1479	1193	0	1216	1035	0	1040
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.4	23.0	23.1	28.7	21.4	11.3	25.0	0.0	18.2	25.3	0.0	25.6
Incr Delay (d2), s/veh	1.1	1.5	1.7	4.4	0.7	0.3	1.2	0.0	0.8	2.0	0.0	2.5
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	0.7	1.5	1.6	3.4	3.7	2.6	2.0	0.0	2.5	2.8	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	24.6	24.8	33.0	22.1	11.6	26.2	0.0	19.0	27.2	0.0	28.0
LnGrp LOS	C	C	C	C	C	B	C	A	B	C	A	C
Approach Vol, veh/h		253			942			338			386	
Approach Delay, s/veh		25.8			22.3			21.9			27.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.5	19.7		17.7	9.7	24.5		17.1
Change Period (Y+Rc), s	* 4.7	5.4		4.6	* 4.7	5.4		4.6
Max Green Setting (Gmax), s	* 11	23.6		40.4	* 10	54.6		45.4
Max Q Clear Time (g_c+I1), s	9.6	5.6		9.2	3.6	11.2		9.2
Green Ext Time (p_c), s	0.4	2.5		2.9	0.0	7.9		2.5

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	530	40	270	910	760	50	0	250	120	100	110
Future Volume (veh/h)	0	530	40	270	910	760	50	0	250	120	100	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	1.00		1.00	1.00		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	0	1856	1856	1856	1856	1856	1856	0	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	558	41	284	958	0	53	0	194	116	120	91
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, %	0	3	3	3	3	3	3	0	3	3	3	3
Cap, veh/h	0	792	58	363	2038		0	0	0	242	254	204
Arrive On Green	0.00	0.24	0.24	0.21	0.58	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	3408	243	1767	3526	1572		0		1767	1856	1495
Grp Volume(v), veh/h	0	296	303	284	958	0		0.0		116	120	91
Grp Sat Flow(s),veh/h/ln	0	1763	1795	1767	1763	1572				1767	1856	1495
Q Serve(g_s), s	0.0	6.6	6.6	6.5	6.7	0.0				2.6	2.6	2.4
Cycle Q Clear(g_c), s	0.0	6.6	6.6	6.5	6.7	0.0				2.6	2.6	2.4
Prop In Lane	0.00		0.14	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	421	429	363	2038					242	254	204
V/C Ratio(X)	0.00	0.70	0.71	0.78	0.47					0.48	0.47	0.45
Avail Cap(c_a), veh/h	0	792	806	773	3596					868	911	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.9	14.9	16.1	5.2	0.0				17.1	17.0	17.0
Incr Delay (d2), s/veh	0.0	0.8	0.8	3.7	0.1	0.0				0.5	0.5	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
%ile BackOfQ(50%),veh/ln	0.0	2.4	2.4	2.5	1.3	0.0				1.0	1.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.7	15.7	19.8	5.3	0.0				17.6	17.5	17.5
LnGrp LOS	A	B	B	B	A					B	B	B
Approach Vol, veh/h		599			1242						327	
Approach Delay, s/veh		15.7			8.6						17.6	
Approach LOS		B			A						B	

Timer - Assigned Phs	1	2		4		6			
Phs Duration (G+Y+Rc), s	14.5	16.3		11.9		30.8			
Change Period (Y+Rc), s *	5.7	6.1		6.1		6.1			
Max Green Setting (Gmax), s	13.8	19.2		21.0		43.6			
Max Q Clear Time (g_c+I1), s	8.5	8.6		4.6		8.7			
Green Ext Time (p_c), s	0.6	1.2		0.3		2.6			

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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.

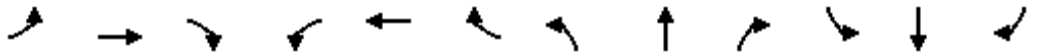
Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	420	0	0	1410	410	0	0	480	0	0	0
Future Vol, veh/h	120	420	0	0	1410	410	0	0	480	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	Free
Storage Length	130	-	-	-	-	-	-	-	0	-	-	0
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	126	442	0	0	1484	432	0	0	505	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1916	0	-	-	-	0	-	2610	221
Stage 1	-	-	-	-	-	-	-	694	-
Stage 2	-	-	-	-	-	-	-	1916	-
Critical Hdwy	4.16	-	-	-	-	-	-	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.56	-
Follow-up Hdwy	2.23	-	-	-	-	-	-	4.03	3.33
Pot Cap-1 Maneuver	301	-	0	0	-	-	0	24	780
Stage 1	-	-	0	0	-	-	0	440	-
Stage 2	-	-	0	0	-	-	0	113	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	301	-	-	-	-	-	-	0	780
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.6	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	780	301	-	-	-
HCM Lane V/C Ratio	-	0.648	0.42	-	-	-
HCM Control Delay (s)	0	17.7	25.3	-	-	-
HCM Lane LOS	A	C	D	-	-	-
HCM 95th %tile Q(veh)	-	4.8	2	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	400	180	260	1040	110	260	160	160	140	140	60
Future Volume (veh/h)	90	400	180	260	1040	110	260	160	160	140	140	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	95	421	152	274	1095	97	274	168	143	147	147	63
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	118	1329	739	303	1697	728	374	195	166	203	192	82
Arrive On Green	0.07	0.38	0.38	0.17	0.48	0.48	0.11	0.21	0.21	0.06	0.16	0.16
Sat Flow, veh/h	1767	3526	1505	1767	3526	1513	3428	909	774	3428	1214	520
Grp Volume(v), veh/h	95	421	152	274	1095	97	274	0	311	147	0	210
Grp Sat Flow(s),veh/h/ln	1767	1763	1505	1767	1763	1513	1714	0	1682	1714	0	1734
Q Serve(g_s), s	6.4	10.1	2.9	18.2	28.0	4.3	9.3	0.0	21.4	5.1	0.0	13.9
Cycle Q Clear(g_c), s	6.4	10.1	2.9	18.2	28.0	4.3	9.3	0.0	21.4	5.1	0.0	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.30
Lane Grp Cap(c), veh/h	118	1329	739	303	1697	728	374	0	360	203	0	275
V/C Ratio(X)	0.80	0.32	0.21	0.91	0.65	0.13	0.73	0.00	0.86	0.72	0.00	0.76
Avail Cap(c_a), veh/h	134	1329	739	358	1697	728	374	0	491	277	0	448
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.2	26.4	5.9	48.8	23.4	17.2	51.7	0.0	45.4	55.5	0.0	48.4
Incr Delay (d2), s/veh	26.2	0.6	0.6	23.3	1.9	0.4	7.2	0.0	11.3	5.9	0.0	4.4
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	3.7	4.3	1.2	9.8	11.5	1.5	4.3	0.0	9.8	2.3	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.4	27.1	6.5	72.1	25.3	17.6	58.9	0.0	56.7	61.4	0.0	52.8
LnGrp LOS	F	C	A	E	C	B	E	A	E	E	A	D
Approach Vol, veh/h		668			1466			585			357	
Approach Delay, s/veh		30.1			33.5			57.8			56.3	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.7	51.0	18.5	24.8	13.1	63.6	12.2	31.1
Change Period (Y+Rc), s	5.1	5.8	5.4	5.8	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	24.3	29.6	13.0	31.0	9.1	44.8	9.7	35.0
Max Q Clear Time (g_c+I1), s	20.2	12.1	11.3	15.9	8.4	30.0	7.1	23.4
Green Ext Time (p_c), s	0.3	5.4	0.2	0.9	0.0	10.2	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	580	100	210	1140	220	70	120	70	80	130	100
Future Volume (veh/h)	130	580	100	210	1140	220	70	120	70	80	130	100
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		0.97	1.00		0.94	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	135	604	96	219	1188	220	73	125	61	83	135	82
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	600	1517	241	175	888	454	149	255	116	154	395	1250
Arrive On Green	0.34	0.50	0.50	0.10	0.25	0.25	0.04	0.11	0.11	0.05	0.11	0.11
Sat Flow, veh/h	1767	3037	482	1767	3526	1522	3428	2308	1046	3428	3526	2768
Grp Volume(v), veh/h	135	350	350	219	1188	220	73	93	93	83	135	82
Grp Sat Flow(s),veh/h/ln	1767	1763	1756	1767	1763	1522	1714	1763	1591	1714	1763	1384
Q Serve(g_s), s	5.5	12.4	12.5	9.9	25.2	5.1	2.1	5.0	5.5	2.4	3.5	0.3
Cycle Q Clear(g_c), s	5.5	12.4	12.5	9.9	25.2	5.1	2.1	5.0	5.5	2.4	3.5	0.3
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	600	880	877	175	888	454	149	195	176	154	395	1250
V/C Ratio(X)	0.23	0.40	0.40	1.25	1.34	0.48	0.49	0.48	0.53	0.54	0.34	0.07
Avail Cap(c_a), veh/h	600	880	877	175	888	454	391	492	444	391	984	1712
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	0.70	0.70	0.70	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	23.6	15.6	15.6	45.0	37.4	14.0	46.7	41.8	42.0	46.7	41.0	5.8
Incr Delay (d2), s/veh	0.2	1.3	1.4	141.9	157.2	2.6	2.5	1.8	2.4	2.8	0.5	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	2.2	4.8	4.8	11.1	29.6	4.5	0.9	2.2	2.3	1.1	1.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	17.0	17.0	186.9	194.6	16.6	49.2	43.6	44.5	49.6	41.5	5.8
LnGrp LOS	C	B	B	F	F	B	D	D	D	D	D	A
Approach Vol, veh/h		835			1627			259			300	
Approach Delay, s/veh		18.1			169.5			45.5			34.0	
Approach LOS		B			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	56.7	9.9	17.3	40.7	32.0	10.1	17.1
Change Period (Y+Rc), s	6.1	6.8	5.6	6.1	6.8	* 6.8	5.6	6.1
Max Green Setting (Gmax), s	9.9	26.2	11.4	27.9	10.9	* 25	11.4	27.9
Max Q Clear Time (g_c+I1), s	11.9	14.5	4.1	5.5	7.5	27.2	4.4	7.5
Green Ext Time (p_c), s	0.0	7.1	0.1	1.1	0.1	0.0	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	103.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	100	50	140	170	50	50	480	90	80	710	200
Future Volume (veh/h)	100	100	50	140	170	50	50	480	90	80	710	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	105	47	147	179	38	53	505	83	84	747	179
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	131	232	104	177	324	69	153	1273	208	107	1062	254
Arrive On Green	0.07	0.19	0.19	0.10	0.22	0.22	0.09	0.42	0.42	0.06	0.38	0.38
Sat Flow, veh/h	1767	1198	536	1767	1473	313	1767	3013	492	1767	2793	669
Grp Volume(v), veh/h	105	0	152	147	0	217	53	294	294	84	471	455
Grp Sat Flow(s),veh/h/ln	1767	0	1734	1767	0	1786	1767	1763	1743	1767	1763	1700
Q Serve(g_s), s	6.4	0.0	8.5	9.0	0.0	11.9	3.1	12.7	12.9	5.2	24.9	24.9
Cycle Q Clear(g_c), s	6.4	0.0	8.5	9.0	0.0	11.9	3.1	12.7	12.9	5.2	24.9	24.9
Prop In Lane	1.00		0.31	1.00		0.18	1.00		0.28	1.00		0.39
Lane Grp Cap(c), veh/h	131	0	336	177	0	393	153	745	736	107	670	646
V/C Ratio(X)	0.80	0.00	0.45	0.83	0.00	0.55	0.35	0.40	0.40	0.78	0.70	0.70
Avail Cap(c_a), veh/h	191	0	336	272	0	393	153	745	736	193	670	646
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	0.0	39.2	48.6	0.0	38.1	47.3	22.0	22.1	51.0	28.9	28.9
Incr Delay (d2), s/veh	14.1	0.0	1.4	12.1	0.0	5.5	1.3	1.6	1.6	11.8	6.1	6.3
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	3.3	0.0	3.6	4.4	0.0	5.6	1.4	5.2	5.2	2.5	10.9	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	0.0	40.5	60.7	0.0	43.6	48.6	23.6	23.7	62.8	35.0	35.2
LnGrp LOS	E	A	D	E	A	D	D	C	C	E	C	D
Approach Vol, veh/h		257			364			641			1010	
Approach Delay, s/veh		50.2			50.5			25.7			37.4	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	53.7	16.1	28.1	16.7	49.0	13.3	31.0
Change Period (Y+Rc), s	5.4	7.2	5.1	* 6.8	7.2	* 7.2	5.1	6.8
Max Green Setting (Gmax), s	12.6	37.4	16.9	* 20	7.6	* 42	11.9	24.2
Max Q Clear Time (g_c+I1), s	7.2	14.9	11.0	10.5	5.1	26.9	8.4	13.9
Green Ext Time (p_c), s	0.1	4.6	0.2	0.6	0.0	6.4	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	120	120	510	600	130
Future Volume (veh/h)	80	120	120	510	600	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	98	126	537	632	112
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	195	497	364	727	1131	654
Arrive On Green	0.11	0.11	0.21	0.21	0.32	0.32
Sat Flow, veh/h	1767	1572	1767	3618	3618	1499
Grp Volume(v), veh/h	84	98	126	537	632	112
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1499
Q Serve(g_s), s	2.2	2.3	3.1	7.2	7.4	2.3
Cycle Q Clear(g_c), s	2.2	2.3	3.1	7.2	7.4	2.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	195	497	364	727	1131	654
V/C Ratio(X)	0.43	0.20	0.35	0.74	0.56	0.17
Avail Cap(c_a), veh/h	1092	1296	416	829	2038	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	12.5	17.0	18.6	14.1	8.8
Incr Delay (d2), s/veh	1.5	0.2	0.8	3.5	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.0	1.1	2.7	2.3	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.4	12.7	17.8	22.1	14.7	9.0
LnGrp LOS	C	B	B	C	B	A
Approach Vol, veh/h	182			663	744	
Approach Delay, s/veh	17.2			21.3	13.8	
Approach LOS	B			C	B	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	16.5		11.3		22.3
Change Period (Y+Rc), s	6.2		5.8		6.2
Max Green Setting (Gmax), s	11.8		31.0		29.0
Max Q Clear Time (g_c+I1), s	9.2		4.3		9.4
Green Ext Time (p_c), s	1.2		0.5		5.7

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	170	120	200	190	180	110	260	110	150	320	50
Future Volume (veh/h)	50	170	120	200	190	180	110	260	110	150	320	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.93	1.00		0.97	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	179	104	206	208	145	116	274	74	158	337	47
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	72	243	251	298	313	404	149	368	99	177	442	62
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.08	0.26	0.26	0.10	0.28	0.28
Sat Flow, veh/h	419	1415	1463	1767	1856	1462	1767	1396	377	1767	1581	221
Grp Volume(v), veh/h	232	0	104	206	208	145	116	0	348	158	0	384
Grp Sat Flow(s),veh/h/ln	1835	0	1463	1767	1856	1462	1767	0	1773	1767	0	1802
Q Serve(g_s), s	7.7	0.0	4.0	7.0	6.7	5.1	4.1	0.0	11.5	5.6	0.0	12.5
Cycle Q Clear(g_c), s	7.7	0.0	4.0	7.0	6.7	5.1	4.1	0.0	11.5	5.6	0.0	12.5
Prop In Lane	0.23		1.00	1.00		1.00	1.00		0.21	1.00		0.12
Lane Grp Cap(c), veh/h	314	0	251	298	313	404	149	0	467	177	0	504
V/C Ratio(X)	0.74	0.00	0.41	0.69	0.66	0.36	0.78	0.00	0.74	0.89	0.00	0.76
Avail Cap(c_a), veh/h	517	0	413	526	552	593	255	0	631	177	0	562
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	23.6	25.0	24.8	18.9	28.6	0.0	21.5	28.4	0.0	21.1
Incr Delay (d2), s/veh	1.3	0.0	0.4	1.1	0.9	0.2	8.4	0.0	5.6	38.7	0.0	7.1
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	3.1	0.0	1.3	2.7	2.7	1.6	2.0	0.0	5.0	4.1	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.0	24.0	26.0	25.7	19.1	37.1	0.0	27.1	67.0	0.0	28.2
LnGrp LOS	C	A	C	C	C	B	D	A	C	E	A	C
Approach Vol, veh/h		336			559			464			542	
Approach Delay, s/veh		25.6			24.1			29.6			39.5	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	21.9		15.5	10.0	22.9		15.4
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6
Max Green Setting (Gmax), s	6.4	22.7		18.0	9.2	19.9		19.0
Max Q Clear Time (g_c+I1), s	7.7	13.5		9.7	6.1	14.5		9.0
Green Ext Time (p_c), s	0.0	2.3		0.6	0.1	1.7		1.0

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	470	80	110	620	560	50	60	80	230	30	110
Future Volume (veh/h)	360	470	80	110	620	560	50	60	80	230	30	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	367	480	79	112	633	415	51	61	67	177	113	88
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	383	1431	234	169	1245	771	66	79	126	270	144	112
Arrive On Green	0.22	0.47	0.47	0.03	0.12	0.12	0.08	0.08	0.08	0.15	0.15	0.15
Sat Flow, veh/h	1767	3014	493	1767	3526	1503	826	988	1572	1767	945	736
Grp Volume(v), veh/h	367	279	280	112	633	415	112	0	67	177	0	201
Grp Sat Flow(s),veh/h/ln	1767	1763	1744	1767	1763	1503	1814	0	1572	1767	0	1682
Q Serve(g_s), s	20.5	9.9	10.0	6.3	16.9	20.5	6.1	0.0	4.1	9.4	0.0	11.5
Cycle Q Clear(g_c), s	20.5	9.9	10.0	6.3	16.9	20.5	6.1	0.0	4.1	9.4	0.0	11.5
Prop In Lane	1.00		0.28	1.00		1.00	0.46		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	383	837	828	169	1245	771	145	0	126	270	0	257
V/C Ratio(X)	0.96	0.33	0.34	0.66	0.51	0.54	0.77	0.00	0.53	0.66	0.00	0.78
Avail Cap(c_a), veh/h	383	837	828	228	1245	771	145	0	126	389	0	370
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.7	16.4	16.4	46.8	36.0	23.6	45.1	0.0	44.2	39.9	0.0	40.8
Incr Delay (d2), s/veh	34.5	1.1	1.1	1.2	1.0	1.9	20.3	0.0	2.3	1.0	0.0	3.9
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	12.2	4.0	4.0	2.9	8.1	11.1	3.6	0.0	1.7	4.2	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	17.5	17.5	48.0	37.0	25.4	65.4	0.0	46.5	40.9	0.0	44.6
LnGrp LOS	E	B	B	D	D	C	E	A	D	D	A	D
Approach Vol, veh/h		926			1160			179			378	
Approach Delay, s/veh		39.6			33.9			58.3			42.9	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.4	40.1		13.1	14.3	52.3		20.4
Change Period (Y+Rc), s	* 4.7	* 4.8		5.1	* 4.7	* 4.8		5.1
Max Green Setting (Gmax), s	* 23	* 29		8.0	* 13	* 37		22.0
Max Q Clear Time (g_c+I1), s	22.5	22.5		8.1	8.3	12.0		13.5
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	3.3		0.8

Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	410	200	90	780	290	170	150	70	350	290	270
Future Volume (veh/h)	120	410	200	90	780	290	170	150	70	350	290	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.95	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	125	427	157	94	812	221	166	171	60	334	346	212
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	155	523	190	417	1274	892	239	251	574	381	400	477
Arrive On Green	0.03	0.07	0.07	0.08	0.12	0.12	0.14	0.14	0.14	0.22	0.22	0.22
Sat Flow, veh/h	1767	2505	909	1767	3526	1531	1767	1856	1495	1767	1856	1572
Grp Volume(v), veh/h	125	299	285	94	812	221	166	171	60	334	346	212
Grp Sat Flow(s),veh/h/ln	1767	1763	1651	1767	1763	1531	1767	1856	1495	1767	1856	1572
Q Serve(g_s), s	7.0	16.7	17.0	5.0	22.0	8.8	9.0	8.8	0.0	18.3	18.0	10.9
Cycle Q Clear(g_c), s	7.0	16.7	17.0	5.0	22.0	8.8	9.0	8.8	0.0	18.3	18.0	10.9
Prop In Lane	1.00		0.55	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	155	368	345	417	1274	892	239	251	574	381	400	477
V/C Ratio(X)	0.81	0.81	0.83	0.23	0.64	0.25	0.69	0.68	0.10	0.88	0.87	0.44
Avail Cap(c_a), veh/h	182	368	345	417	1274	892	438	460	742	442	464	531
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	44.6	44.8	37.5	37.8	14.9	41.2	41.2	20.5	38.0	37.8	28.1
Incr Delay (d2), s/veh	15.7	15.9	18.1	0.1	2.0	0.5	1.4	1.2	0.0	14.7	12.8	0.2
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	3.8	9.5	9.2	2.2	10.7	5.6	4.0	4.1	0.9	9.4	9.5	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.4	60.5	62.9	37.6	39.8	15.5	42.6	42.4	20.6	52.7	50.6	28.3
LnGrp LOS	E	E	E	D	D	B	D	D	C	D	D	C
Approach Vol, veh/h		709			1127			397			892	
Approach Delay, s/veh		62.0			34.8			39.2			46.1	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	41.2		18.6	28.7	26.0		26.6
Change Period (Y+Rc), s	* 4.7	5.1		5.1	5.1	* 5.1		5.1
Max Green Setting (Gmax), s	* 10	19.9		24.8	9.3	* 21		25.0
Max Q Clear Time (g_c+I1), s	9.0	24.0		11.0	7.0	19.0		20.3
Green Ext Time (p_c), s	0.0	0.0		0.9	0.0	0.5		1.3

Intersection Summary	
HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	520	120	110	830	70	120	80	100	100	130	130
Future Volume (veh/h)	90	520	120	110	830	70	120	80	100	100	130	130
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		0.95	1.00		0.94	1.00		0.94
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	95	547	98	116	874	71	126	84	83	105	137	105
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	459	1463	261	144	1006	82	195	204	163	202	212	169
Arrive On Green	0.52	0.98	0.98	0.08	0.31	0.31	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1767	2977	531	1767	3287	267	1767	1856	1481	1767	1856	1484
Grp Volume(v), veh/h	95	323	322	116	469	476	126	84	83	105	137	105
Grp Sat Flow(s),veh/h/ln	1767	1763	1746	1767	1763	1792	1767	1856	1481	1767	1856	1484
Q Serve(g_s), s	2.9	0.5	0.5	6.5	25.1	25.1	6.8	4.2	5.3	5.6	7.1	6.7
Cycle Q Clear(g_c), s	2.9	0.5	0.5	6.5	25.1	25.1	6.8	4.2	5.3	5.6	7.1	6.7
Prop In Lane	1.00		0.30	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	459	866	858	144	539	548	195	204	163	202	212	169
V/C Ratio(X)	0.21	0.37	0.38	0.81	0.87	0.87	0.65	0.41	0.51	0.52	0.65	0.62
Avail Cap(c_a), veh/h	459	866	858	175	539	548	373	392	313	373	392	313
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.4	0.4	45.2	32.8	32.8	42.6	41.5	41.9	41.7	42.4	42.2
Incr Delay (d2), s/veh	0.1	0.9	0.9	16.7	17.1	16.9	2.7	1.0	1.8	1.5	2.5	2.7
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	1.1	0.3	0.3	3.4	12.6	12.8	3.1	2.0	2.0	2.5	3.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	1.4	1.4	61.9	49.9	49.7	45.3	42.4	43.8	43.3	44.8	45.0
LnGrp LOS	B	A	A	E	D	D	D	D	D	D	D	D
Approach Vol, veh/h		740			1061			293			347	
Approach Delay, s/veh		3.6			51.1			44.0			44.4	
Approach LOS		A			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	54.9		16.1	31.8	36.4		15.7
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.8	* 5.8		4.7
Max Green Setting (Gmax), s	9.3	27.6		* 21	6.9	* 31		21.1
Max Q Clear Time (g_c+I1), s	8.5	2.5		9.1	4.9	27.1		8.8
Green Ext Time (p_c), s	0.0	4.1		0.9	0.0	1.8		0.7

Intersection Summary	
HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	550	260	420	680	120	200	460	420	120	1070	350
Future Volume (veh/h)	150	550	260	420	680	120	200	460	420	120	1070	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	158	579	220	442	716	101	211	484	0	126	1126	0
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	220	817	352	455	1058	458	238	1734		184	1151	
Arrive On Green	0.06	0.23	0.23	0.13	0.30	0.30	0.07	0.34	0.00	0.05	0.33	0.00
Sat Flow, veh/h	3428	3526	1519	3428	3526	1527	3428	5066	1572	3428	3526	1572
Grp Volume(v), veh/h	158	579	220	442	716	101	211	484	0	126	1126	0
Grp Sat Flow(s),veh/h/ln	1714	1763	1519	1714	1763	1527	1714	1689	1572	1714	1763	1572
Q Serve(g_s), s	4.9	16.5	14.2	14.0	19.5	5.4	6.7	7.6	0.0	3.9	34.5	0.0
Cycle Q Clear(g_c), s	4.9	16.5	14.2	14.0	19.5	5.4	6.7	7.6	0.0	3.9	34.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	220	817	352	455	1058	458	238	1734		184	1151	
V/C Ratio(X)	0.72	0.71	0.63	0.97	0.68	0.22	0.89	0.28		0.68	0.98	
Avail Cap(c_a), veh/h	314	1000	431	455	1145	496	238	1734		210	1151	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	38.6	37.7	47.2	33.6	28.7	50.4	26.1	0.0	50.8	36.4	0.0
Incr Delay (d2), s/veh	4.5	2.2	2.7	34.9	1.7	0.3	30.2	0.2	0.0	7.5	21.4	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	2.2	7.1	5.2	7.9	8.0	1.9	3.8	3.0	0.0	1.8	17.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	40.8	40.5	82.1	35.3	29.0	80.6	26.3	0.0	58.3	57.9	0.0
LnGrp LOS	D	D	D	F	D	C	F	C		E	E	
Approach Vol, veh/h		957			1259			695			1252	
Approach Delay, s/veh		43.0			51.2			42.8			57.9	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	44.9	20.3	32.8	13.0	43.2	12.8	40.3
Change Period (Y+Rc), s	5.4	7.5	5.8	7.5	5.4	7.5	5.8	7.5
Max Green Setting (Gmax), s	6.7	36.6	14.5	31.0	7.6	35.7	10.0	35.5
Max Q Clear Time (g_c+I1), s	15.9	9.6	16.0	18.5	8.7	36.5	6.9	21.5
Green Ext Time (p_c), s	0.0	5.8	0.0	4.8	0.0	0.0	0.1	5.3

Intersection Summary	
HCM 6th Ctrl Delay	49.9
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	590	280	500	740	150	250	700	500	180	1450	400
Future Volume (veh/h)	170	590	280	500	740	150	250	700	500	180	1450	400
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	179	621	231	526	779	130	263	737	405	189	1526	314
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	228	659	239	511	1341	511	267	918	503	235	1454	633
Arrive On Green	0.07	0.18	0.18	0.15	0.26	0.26	0.08	0.42	0.42	0.07	0.41	0.41
Sat Flow, veh/h	3428	3621	1312	3428	5066	1523	3428	2177	1192	3428	3526	1534
Grp Volume(v), veh/h	179	578	274	526	779	130	263	596	546	189	1526	314
Grp Sat Flow(s),veh/h/ln	1714	1689	1555	1714	1689	1523	1714	1763	1606	1714	1763	1534
Q Serve(g_s), s	7.5	24.5	25.4	21.6	19.4	9.0	11.1	42.9	43.1	7.9	59.8	21.9
Cycle Q Clear(g_c), s	7.5	24.5	25.4	21.6	19.4	9.0	11.1	42.9	43.1	7.9	59.8	21.9
Prop In Lane	1.00		0.84	1.00		1.00	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	228	615	283	511	1341	511	267	743	677	235	1454	633
V/C Ratio(X)	0.79	0.94	0.97	1.03	0.58	0.25	0.98	0.80	0.81	0.80	1.05	0.50
Avail Cap(c_a), veh/h	312	615	283	511	1341	511	267	743	677	270	1454	633
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.7	58.5	58.9	61.7	46.3	35.2	66.8	36.6	36.7	66.6	42.6	31.5
Incr Delay (d2), s/veh	8.9	23.2	44.9	47.7	1.0	0.6	50.6	7.2	8.0	14.2	37.8	1.3
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	3.5	12.1	13.1	12.5	8.0	3.4	6.7	19.3	17.8	3.8	32.2	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.5	81.7	103.7	109.4	47.3	35.8	117.3	43.8	44.7	80.8	80.4	32.8
LnGrp LOS	E	F	F	F	D	D	F	D	D	F	F	C
Approach Vol, veh/h		1031			1435			1405			2029	
Approach Delay, s/veh		86.5			69.0			57.9			73.0	
Approach LOS		F			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.4	33.9	16.7	67.0	15.4	45.9	15.4	68.3
Change Period (Y+Rc), s	5.8	7.5	5.4	7.2	5.8	7.5	5.4	7.2
Max Green Setting (Gmax), s	21.6	26.4	11.3	59.8	13.2	34.8	11.4	59.7
Max Q Clear Time (g_c+I1), s	23.6	27.4	13.1	61.8	9.5	21.4	9.9	45.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	7.0	0.1	9.8

Intersection Summary	
HCM 6th Ctrl Delay	70.8
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	580	590	450	900	280	720	1070	300	210	1140	190
Future Volume (veh/h)	220	580	590	450	900	280	720	1070	300	210	1140	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	232	611	497	474	947	236	758	1126	253	221	1200	160
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	260	1027	655	490	997	431	759	1918	580	765	1962	594
Arrive On Green	0.08	0.20	0.20	0.14	0.28	0.28	0.22	0.38	0.38	0.22	0.39	0.39
Sat Flow, veh/h	3428	5066	1514	3428	3526	1525	3428	5066	1532	3428	5066	1533
Grp Volume(v), veh/h	232	611	497	474	947	236	758	1126	253	221	1200	160
Grp Sat Flow(s),veh/h/ln	1714	1689	1514	1714	1763	1525	1714	1689	1532	1714	1689	1533
Q Serve(g_s), s	9.4	15.3	28.4	19.3	36.9	13.9	30.9	24.9	17.2	7.5	26.6	10.0
Cycle Q Clear(g_c), s	9.4	15.3	28.4	19.3	36.9	13.9	30.9	24.9	17.2	7.5	26.6	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	1027	655	490	997	431	759	1918	580	765	1962	594
V/C Ratio(X)	0.89	0.59	0.76	0.97	0.95	0.55	1.00	0.59	0.44	0.29	0.61	0.27
Avail Cap(c_a), veh/h	260	1028	655	490	997	431	759	1918	580	765	1962	594
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	50.6	24.7	59.7	49.2	24.4	54.5	34.8	32.4	45.2	34.4	29.3
Incr Delay (d2), s/veh	29.9	1.4	6.1	32.4	18.0	2.6	32.3	1.3	2.4	0.2	1.4	1.1
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	5.0	6.4	11.0	10.3	18.0	5.2	16.4	10.2	6.6	3.2	10.9	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.1	52.0	30.7	92.1	67.3	27.0	86.7	36.1	34.8	45.4	35.9	30.5
LnGrp LOS	F	D	C	F	E	C	F	D	C	D	D	C
Approach Vol, veh/h		1340			1657			2137			1581	
Approach Delay, s/veh		51.4			68.6			53.9			36.7	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	35.6	37.0	63.0	16.0	46.8	40.0	60.0
Change Period (Y+Rc), s	7.2	* 7.2	6.0	7.0	5.4	7.2	7.0	* 7
Max Green Setting (Gmax), s	20.0	* 28	31.0	35.0	10.6	37.8	13.0	* 53
Max Q Clear Time (g_c+I1), s	11.3	30.4	32.9	28.6	11.4	38.9	9.5	26.9
Green Ext Time (p_c), s	0.0	0.0	0.0	4.7	0.0	0.0	0.2	13.0

Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	180	120	430	350	120	150	390	310	110	740	130
Future Volume (veh/h)	130	180	120	430	350	120	150	390	310	110	740	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	135	188	94	448	365	119	156	406	292	115	771	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	313	635	272	570	664	213	239	1020	703	228	1450	437
Arrive On Green	0.09	0.18	0.18	0.17	0.26	0.26	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	3428	3526	1509	3428	2602	834	3428	3526	1526	3428	5066	1525
Grp Volume(v), veh/h	135	188	94	448	245	239	156	406	292	115	771	104
Grp Sat Flow(s),veh/h/ln	1714	1763	1509	1714	1763	1673	1714	1763	1526	1714	1689	1525
Q Serve(g_s), s	3.1	3.9	4.6	10.5	10.1	10.4	3.7	7.8	10.8	2.7	10.8	4.4
Cycle Q Clear(g_c), s	3.1	3.9	4.6	10.5	10.1	10.4	3.7	7.8	10.8	2.7	10.8	4.4
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	635	272	570	450	427	239	1020	703	228	1450	437
V/C Ratio(X)	0.43	0.30	0.35	0.79	0.55	0.56	0.65	0.40	0.42	0.50	0.53	0.24
Avail Cap(c_a), veh/h	433	1420	608	1291	1151	1092	556	1848	1061	841	3078	927
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	29.8	30.1	33.6	27.0	27.2	38.1	24.0	15.4	37.8	25.2	22.9
Incr Delay (d2), s/veh	0.9	0.6	1.6	2.4	2.2	2.4	3.0	0.4	0.6	1.7	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	1.3	1.6	1.7	4.2	4.1	4.1	1.6	3.0	3.3	1.1	4.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	30.4	31.7	36.0	29.2	29.6	41.1	24.3	15.9	39.5	25.7	23.3
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		417			932			854			990	
Approach Delay, s/veh		32.8			32.6			24.5			27.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	31.3	19.4	22.3	11.2	31.0	13.1	28.6
Change Period (Y+Rc), s	5.4	7.0	5.4	7.2	5.4	7.0	5.4	7.2
Max Green Setting (Gmax), s	20.6	44.0	31.6	33.8	13.6	51.0	10.6	54.8
Max Q Clear Time (g_c+I1), s	14.7	12.8	12.5	6.6	5.7	12.8	5.1	12.4
Green Ext Time (p_c), s	0.3	5.6	1.4	2.7	0.3	8.9	0.2	5.9

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	90	60	170	80	240	50	200	100	180	240	100
Future Volume (veh/h)	60	90	60	170	80	240	50	200	100	180	240	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.96	1.00		0.94	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	63	95	57	179	84	187	53	211	59	189	253	104
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	220	231	179	261	123	477	89	564	152	171	618	244
Arrive On Green	0.12	0.12	0.12	0.21	0.21	0.21	0.05	0.21	0.21	0.10	0.25	0.25
Sat Flow, veh/h	1767	1856	1434	1221	573	1516	1767	2702	730	1767	2423	959
Grp Volume(v), veh/h	63	95	57	263	0	187	53	135	135	189	181	176
Grp Sat Flow(s),veh/h/ln	1767	1856	1434	1794	0	1516	1767	1763	1669	1767	1763	1619
Q Serve(g_s), s	1.8	2.6	2.0	7.4	0.0	5.3	1.6	3.6	3.8	5.3	4.7	5.0
Cycle Q Clear(g_c), s	1.8	2.6	2.0	7.4	0.0	5.3	1.6	3.6	3.8	5.3	4.7	5.0
Prop In Lane	1.00		1.00	0.68		1.00	1.00		0.44	1.00		0.59
Lane Grp Cap(c), veh/h	220	231	179	384	0	477	89	368	348	171	449	413
V/C Ratio(X)	0.29	0.41	0.32	0.68	0.00	0.39	0.59	0.37	0.39	1.11	0.40	0.43
Avail Cap(c_a), veh/h	645	677	524	655	0	705	161	650	615	171	659	606
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	22.1	21.9	19.8	0.0	14.9	25.5	18.6	18.7	24.8	17.0	17.1
Incr Delay (d2), s/veh	0.7	1.2	1.0	2.2	0.0	0.5	2.3	0.9	1.0	100.0	0.8	1.0
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	0.7	1.1	0.7	3.0	0.0	1.7	0.7	1.4	1.4	6.8	1.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	23.3	22.9	22.0	0.0	15.4	27.8	19.5	19.7	124.8	17.8	18.1
LnGrp LOS	C	C	C	C	A	B	C	B	B	F	B	B
Approach Vol, veh/h		215			450			323			546	
Approach Delay, s/veh		22.9			19.2			20.9			54.9	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	16.5		11.4	7.5	19.1		16.8
Change Period (Y+Rc), s	* 4.7	5.1		4.6	* 4.7	5.1		5.1
Max Green Setting (Gmax), s	* 5.3	20.2		20.0	* 5	20.5		20.0
Max Q Clear Time (g_c+I1), s	7.3	5.8		4.6	3.6	7.0		9.4
Green Ext Time (p_c), s	0.0	1.7		0.7	0.0	2.3		1.7

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	320	150	1840	800	80	1720
Future Volume (veh/h)	320	150	1840	800	80	1720
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	323	116	1859	808	81	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	424	149	1947	1490	104	
Arrive On Green	0.17	0.17	0.57	0.80	0.06	0.00
Sat Flow, veh/h	2648	901	3428	1856	1767	2768
Grp Volume(v), veh/h	221	218	1859	808	81	0
Grp Sat Flow(s),veh/h/ln	1763	1693	1714	1856	1767	1384
Q Serve(g_s), s	11.4	11.8	48.9	14.5	4.3	0.0
Cycle Q Clear(g_c), s	11.4	11.8	48.9	14.5	4.3	0.0
Prop In Lane		0.53	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	292	281	1947	1490	104	
V/C Ratio(X)	0.76	0.78	0.95	0.54	0.78	
Avail Cap(c_a), veh/h	362	348	2779	2013	614	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.0	38.1	19.5	3.3	44.3	0.0
Incr Delay (d2), s/veh	10.2	11.9	5.9	0.1	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.7	19.0	3.4	2.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.1	50.1	25.4	3.4	48.9	0.0
LnGrp LOS	D	D	C	A	D	
Approach Vol, veh/h	439			2667	81	
Approach Delay, s/veh	49.1			18.7	48.9	
Approach LOS	D			B	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	60.8	22.4				83.2	12.2
Change Period (Y+Rc), s	6.6	6.6				6.6	6.6
Max Green Setting (Gmax), s	77.4	19.6				103.6	33.2
Max Q Clear Time (g_c+I1), s	50.9	13.8				16.5	6.3
Green Ext Time (p_c), s	3.3	2.1				3.2	0.1

Intersection Summary		
HCM 6th Ctrl Delay	23.7	
HCM 6th LOS	C	

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	130	140	480	230	90	240	970	290	220	1770	200
Future Volume (veh/h)	70	130	140	480	230	90	240	970	290	220	1770	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	73	135	112	500	240	65	250	1010	222	229	1844	201
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	427	290	458	552	146	240	1757	385	288	2022	219
Arrive On Green	0.05	0.12	0.12	0.13	0.20	0.20	0.02	0.14	0.14	0.08	0.44	0.44
Sat Flow, veh/h	1767	3526	1488	3428	2735	721	3428	4136	907	3428	4627	501
Grp Volume(v), veh/h	73	135	112	500	152	153	250	824	408	229	1343	702
Grp Sat Flow(s),veh/h/ln	1767	1763	1488	1714	1763	1693	1714	1689	1666	1714	1689	1751
Q Serve(g_s), s	4.5	3.8	7.2	14.7	8.3	8.7	7.7	25.1	25.2	7.2	40.9	41.5
Cycle Q Clear(g_c), s	4.5	3.8	7.2	14.7	8.3	8.7	7.7	25.1	25.2	7.2	40.9	41.5
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.54	1.00		0.29
Lane Grp Cap(c), veh/h	94	427	290	458	356	342	240	1434	708	288	1476	765
V/C Ratio(X)	0.78	0.32	0.39	1.09	0.43	0.45	1.04	0.57	0.58	0.79	0.91	0.92
Avail Cap(c_a), veh/h	169	737	421	458	436	419	240	1434	708	315	1476	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	44.2	38.9	47.6	38.3	38.5	53.7	38.0	38.0	49.4	28.9	29.1
Incr Delay (d2), s/veh	13.0	0.2	0.3	69.0	0.3	0.3	67.0	1.5	3.1	10.8	9.9	17.8
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	1.7	2.6	10.5	3.5	3.5	5.6	11.6	11.7	3.4	17.2	19.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	44.3	39.2	116.7	38.7	38.8	120.8	39.5	41.2	60.3	38.8	46.9
LnGrp LOS	E	D	D	F	D	D	F	D	D	E	D	D
Approach Vol, veh/h		320			805			1482			2274	
Approach Delay, s/veh		47.1			87.2			53.7			43.5	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	53.5	21.0	20.1	14.0	54.9	12.1	29.0
Change Period (Y+Rc), s	6.1	6.8	6.3	6.8	6.3	6.8	6.3	6.8
Max Green Setting (Gmax), s	10.1	36.2	14.7	23.0	7.7	38.4	10.5	27.2
Max Q Clear Time (g_c+I1), s	9.2	27.2	16.7	9.2	9.7	43.5	6.5	10.7
Green Ext Time (p_c), s	0.0	6.8	0.0	0.6	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	54.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	190	570	510	420	450	420	880	750	60	1400	90
Future Volume (veh/h)	70	190	570	510	420	450	420	880	750	60	1400	90
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		0.97	1.00		0.99	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	73	198	438	531	438	338	438	917	572	62	1458	87
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	122	397	2471	624	481	446	5002	8962	3027	113	1639	98
Arrive On Green	0.04	0.11	0.11	0.18	0.26	0.26	1.00	1.00	1.00	0.03	0.34	0.34
Sat Flow, veh/h	3428	3526	1572	3428	1856	1523	3428	5066	1549	3428	4879	291
Grp Volume(v), veh/h	73	198	438	531	438	338	438	917	572	62	1009	536
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1856	1523	1714	1689	1549	1714	1689	1794
Q Serve(g_s), s	2.1	5.3	5.7	15.0	22.9	20.2	0.0	0.0	0.0	1.8	28.3	28.3
Cycle Q Clear(g_c), s	2.1	5.3	5.7	15.0	22.9	20.2	0.0	0.0	0.0	1.8	28.3	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	122	397	2471	624	481	446	5002	8962	3027	113	1135	603
V/C Ratio(X)	0.60	0.50	0.18	0.85	0.91	0.76	0.09	0.10	0.19	0.55	0.89	0.89
Avail Cap(c_a), veh/h	137	409	2477	837	501	463	5002	8962	3027	137	1135	603
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	0.49	0.49	0.49	0.65	0.65	0.65	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	41.7	8.2	39.6	35.9	32.2	0.0	0.0	0.0	47.6	31.4	31.4
Incr Delay (d2), s/veh	5.7	1.0	0.0	3.3	11.6	3.5	0.0	0.0	0.1	4.1	10.5	17.7
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	1.0	2.3	2.5	6.4	11.4	7.5	0.0	0.0	0.1	0.8	12.5	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	42.7	8.2	42.8	47.6	35.7	0.0	0.0	0.1	51.8	42.0	49.2
LnGrp LOS	D	D	A	D	D	D	A	A	A	D	D	D
Approach Vol, veh/h		709			1307			1927			1607	
Approach Delay, s/veh		22.5			42.6			0.0			44.7	
Approach LOS		C			D			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	192.9	24.3	22.7	161.9	40.4	9.7	37.3
Change Period (Y+Rc), s	6.1	11.8	6.1	* 11	11.8	* 6.8	6.1	* 11
Max Green Setting (Gmax), s	4.3	29.6	24.4	* 12	5.0	* 34	4.0	* 27
Max Q Clear Time (g_c+I1), s	3.8	2.0	17.0	7.7	2.0	30.3	4.1	24.9
Green Ext Time (p_c), s	0.0	5.7	1.2	1.1	0.5	2.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	560	380	260	800	140	530	80	240	40	40	40
Future Volume (veh/h)	40	560	380	260	800	140	530	80	240	40	40	40
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		0.97	1.00		1.00	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	589	289	274	842	146	618	0	112	42	42	36
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	148	1033	780	358	938	163	717	0	319	167	170	148
Arrive On Green	0.08	0.29	0.29	0.10	0.31	0.31	0.20	0.00	0.20	0.14	0.14	0.14
Sat Flow, veh/h	1767	3526	1572	3428	2989	518	3534	0	1572	1190	1212	1059
Grp Volume(v), veh/h	42	589	289	274	497	491	618	0	112	63	0	57
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1744	1767	0	1572	1796	0	1665
Q Serve(g_s), s	1.8	11.3	9.0	6.2	21.4	21.4	13.5	0.0	4.9	2.5	0.0	2.4
Cycle Q Clear(g_c), s	1.8	11.3	9.0	6.2	21.4	21.4	13.5	0.0	4.9	2.5	0.0	2.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	0.66		0.64
Lane Grp Cap(c), veh/h	148	1033	780	358	553	548	717	0	319	251	0	233
V/C Ratio(X)	0.28	0.57	0.37	0.76	0.90	0.90	0.86	0.00	0.35	0.25	0.00	0.24
Avail Cap(c_a), veh/h	244	1132	824	546	604	598	843	0	375	270	0	251
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.3	23.9	12.4	34.7	26.1	26.1	30.7	0.0	27.3	30.6	0.0	30.5
Incr Delay (d2), s/veh	0.4	0.3	0.1	1.3	14.6	14.7	7.2	0.0	0.2	0.2	0.0	0.2
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	0.7	4.4	4.4	2.5	10.4	10.3	6.3	0.0	1.8	1.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	24.2	12.5	36.1	40.7	40.8	37.9	0.0	27.5	30.7	0.0	30.7
LnGrp LOS	C	C	B	D	D	D	D	A	C	C	A	C
Approach Vol, veh/h		920			1262			730			120	
Approach Delay, s/veh		21.0			39.7			36.3			30.7	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	29.1		16.3	11.4	30.8		21.3
Change Period (Y+Rc), s	* 4.7	5.8		5.1	* 4.7	5.8		5.1
Max Green Setting (Gmax), s	* 13	25.6		12.0	* 11	27.3		19.0
Max Q Clear Time (g_c+I1), s	8.2	13.3		4.5	3.8	23.4		15.5
Green Ext Time (p_c), s	0.2	2.5		0.2	0.0	1.6		0.7

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	390	10	250	110	510	0	0	640	420
Future Volume (veh/h)	0	0	0	390	10	250	110	510	0	0	640	420
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.95
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				476	0	133	116	537	0	0	674	367
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				570	0	242	594	3667	0	0	2106	871
Arrive On Green				0.16	0.00	0.16	0.67	1.00	0.00	0.00	0.33	0.33
Sat Flow, veh/h				3534	0	1504	1767	5233	0	0	6643	2641
Grp Volume(v), veh/h				476	0	133	116	537	0	0	674	367
Grp Sat Flow(s),veh/h/ln				1767	0	1504	1767	1689	0	0	1596	1320
Q Serve(g_s), s				10.4	0.0	6.5	2.0	0.0	0.0	0.0	6.3	8.7
Cycle Q Clear(g_c), s				10.4	0.0	6.5	2.0	0.0	0.0	0.0	6.3	8.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				570	0	242	594	3667	0	0	2106	871
V/C Ratio(X)				0.84	0.00	0.55	0.20	0.15	0.00	0.00	0.32	0.42
Avail Cap(c_a), veh/h				1166	0	496	594	3667	0	0	2106	871
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.96	0.96	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.5	0.0	30.9	9.0	0.0	0.0	0.0	20.1	20.9
Incr Delay (d2), s/veh				1.3	0.0	0.7	0.2	0.1	0.0	0.0	0.4	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	2.4	0.7	0.0	0.0	0.0	2.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.8	0.0	31.6	9.2	0.1	0.0	0.0	20.5	22.3
LnGrp LOS				C	A	C	A	A	A	A	C	C
Approach Vol, veh/h					609			653			1041	
Approach Delay, s/veh					33.3			1.7			21.1	
Approach LOS					C			A			C	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	62.5		31.5	31.0		17.5
Change Period (Y+Rc), s	4.6		4.6	* 4.6		4.6
Max Green Setting (Gmax), s	44.4		14.3	* 26		26.4
Max Q Clear Time (g_c+I1), s	2.0		4.0	10.7		12.4
Green Ext Time (p_c), s	1.3		0.2	1.9		0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	10	70	0	0	0	0	240	90	270	840	0
Future Volume (veh/h)	330	10	70	0	0	0	0	240	90	270	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.97	1.00		1.00
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	371	0	45				0	253	76	284	884	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	537	0	228				0	995	279	1441	2584	0
Arrive On Green	0.15	0.00	0.15				0.00	0.25	0.25	0.84	1.00	0.00
Sat Flow, veh/h	3534	0	1501				0	4067	1093	3428	3618	0
Grp Volume(v), veh/h	371	0	45				0	217	112	284	884	0
Grp Sat Flow(s),veh/h/ln	1767	0	1501				0	1689	1616	1714	1763	0
Q Serve(g_s), s	8.0	0.0	2.1				0.0	4.1	4.5	1.3	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	2.1				0.0	4.1	4.5	1.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.68	1.00		0.00
Lane Grp Cap(c), veh/h	537	0	228				0	861	412	1441	2584	0
V/C Ratio(X)	0.69	0.00	0.20				0.00	0.25	0.27	0.20	0.34	0.00
Avail Cap(c_a), veh/h	1387	0	589				0	861	412	1441	2584	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	32.1	0.0	29.6				0.0	23.7	23.9	3.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.2				0.0	0.7	1.6	0.0	0.3	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
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.8				0.0	1.6	1.8	0.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	0.0	29.8				0.0	24.4	25.5	3.8	0.3	0.0
LnGrp LOS	C	A	C				A	C	C	A	A	A
Approach Vol, veh/h		416						329			1168	
Approach Delay, s/veh		32.4						24.8			1.2	
Approach LOS		C						C			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	38.2	25.0	16.8	63.2
Change Period (Y+Rc), s	4.6	* 4.6	4.6	4.6
Max Green Setting (Gmax), s	34.8	* 20	31.4	39.4
Max Q Clear Time (g_c+I1), s	13.3	6.5	10.0	2.0
Green Ext Time (p_c), s	0.2	0.6	0.3	2.2

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	510	0	540	170	850	0	0	1830	470
Future Volume (veh/h)	0	0	0	510	0	540	170	850	0	0	1830	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				669	0	282	179	895	0	0	1926	284
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				768	0	330	237	3394	0	0	2828	859
Arrive On Green				0.22	0.00	0.22	0.09	0.89	0.00	0.00	0.56	0.56
Sat Flow, veh/h				3534	0	1517	3428	5233	0	0	5233	1539
Grp Volume(v), veh/h				669	0	282	179	895	0	0	1926	284
Grp Sat Flow(s),veh/h/ln				1767	0	1517	1714	1689	0	0	1689	1539
Q Serve(g_s), s				20.1	0.0	19.7	5.6	2.8	0.0	0.0	29.8	11.0
Cycle Q Clear(g_c), s				20.1	0.0	19.7	5.6	2.8	0.0	0.0	29.8	11.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				768	0	330	237	3394	0	0	2828	859
V/C Ratio(X)				0.87	0.00	0.86	0.76	0.26	0.00	0.00	0.68	0.33
Avail Cap(c_a), veh/h				1105	0	474	262	3394	0	0	2828	859
HCM Platoon Ratio				1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.91	0.91	0.00	0.00	0.09	0.09
Uniform Delay (d), s/veh				41.6	0.0	41.4	49.1	2.1	0.0	0.0	17.3	13.2
Incr Delay (d2), s/veh				4.1	0.0	7.4	8.4	0.2	0.0	0.0	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.2	0.0	8.0	2.6	0.7	0.0	0.0	10.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.6	0.0	48.8	57.4	2.3	0.0	0.0	17.4	13.3
LnGrp LOS				D	A	D	E	A	A	A	B	B
Approach Vol, veh/h					951			1074			2210	
Approach Delay, s/veh					46.6			11.5			16.9	
Approach LOS					D			B			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	80.5		12.3	68.2		29.5
Change Period (Y+Rc), s	6.8		* 4.7	6.8		5.6
Max Green Setting (Gmax), s	63.2		* 8.4	50.1		34.4
Max Q Clear Time (g_c+I1), s	4.8		7.6	31.8		22.1
Green Ext Time (p_c), s	14.7		0.0	17.2		1.8

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	0	180	0	0	0	0	600	390	600	1930	0
Future Volume (veh/h)	340	0	180	0	0	0	0	600	390	600	1930	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.96	1.00		1.00
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1856	0	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	358	0	95				0	632	200	632	2032	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	447	0	205				0	2548	762	709	3834	0
Arrive On Green	0.13	0.00	0.13				0.00	0.50	0.50	0.21	0.76	0.00
Sat Flow, veh/h	3428	0	1572				0	5233	1514	3428	5233	0
Grp Volume(v), veh/h	358	0	95				0	632	200	632	2032	0
Grp Sat Flow(s),veh/h/ln	1714	0	1572				0	1689	1514	1714	1689	0
Q Serve(g_s), s	11.2	0.0	6.2				0.0	7.8	8.3	19.7	17.9	0.0
Cycle Q Clear(g_c), s	11.2	0.0	6.2				0.0	7.8	8.3	19.7	17.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	447	0	205				0	2548	762	709	3834	0
V/C Ratio(X)	0.80	0.00	0.46				0.00	0.25	0.26	0.89	0.53	0.00
Avail Cap(c_a), veh/h	698	0	320				0	2548	762	1022	3834	0
HCM Platoon Ratio	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	1.00				0.00	1.00	1.00	0.53	0.53	0.00
Uniform Delay (d), s/veh	46.4	0.0	44.3				0.0	15.5	15.7	42.4	5.4	0.0
Incr Delay (d2), s/veh	3.7	0.0	1.6				0.0	0.2	0.8	3.1	0.3	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
%ile BackOfQ(50%),veh/ln	5.0	0.0	2.5				0.0	2.8	2.9	8.3	4.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	0.0	45.9				0.0	15.8	16.5	45.6	5.7	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		453						832			2664	
Approach Delay, s/veh		49.2						15.9			15.2	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	27.9	62.1	19.9	90.1
Change Period (Y+Rc), s	5.2	6.8	5.6	6.8
Max Green Setting (Gmax), s	33.3	37.2	22.4	75.2
Max Q Clear Time (g_c+I1), s	21.7	10.3	13.2	19.9
Green Ext Time (p_c), s	1.0	9.6	1.2	43.6

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Notes

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	700	310	0	1350	1980	0
Future Volume (veh/h)	700	310	0	1350	1980	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	0
Adj Flow Rate, veh/h	737	242	0	1421	2084	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	0	3	3	0
Cap, veh/h	912	418	0	2162	2724	0
Arrive On Green	0.27	0.27	0.00	0.43	0.43	0.00
Sat Flow, veh/h	3428	1572	0	5400	6903	0
Grp Volume(v), veh/h	737	242	0	1421	2084	0
Grp Sat Flow(s),veh/h/ln	1714	1572	0	1689	1596	0
Q Serve(g_s), s	8.4	5.6	0.0	9.4	11.7	0.0
Cycle Q Clear(g_c), s	8.4	5.6	0.0	9.4	11.7	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	912	418	0	2162	2724	0
V/C Ratio(X)	0.81	0.58	0.00	0.66	0.77	0.00
Avail Cap(c_a), veh/h	1053	483	0	2316	2918	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.4	13.4	0.0	9.6	10.2	0.0
Incr Delay (d2), s/veh	3.6	0.5	0.0	0.5	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	1.7	0.0	2.3	2.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	13.8	0.0	10.1	11.3	0.0
LnGrp LOS	B	B	A	B	B	A
Approach Vol, veh/h	979			1421	2084	
Approach Delay, s/veh	17.0			10.1	11.3	
Approach LOS	B			B	B	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	24.7		17.3		24.7
Change Period (Y+Rc), s	6.8		6.1		6.8
Max Green Setting (Gmax), s	19.2		12.9		19.2
Max Q Clear Time (g_c+I1), s	11.4		10.4		13.7
Green Ext Time (p_c), s	4.1		0.7		4.2

Intersection Summary		
HCM 6th Ctrl Delay	12.1	
HCM 6th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	60	70	150	80	270	130	1030	290	670	1460	160
Future Volume (veh/h)	80	60	70	150	80	270	130	1030	290	670	1460	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	63	68	158	84	207	137	1084	237	705	1537	155
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	107	115	122	247	677	122	1322	506	1044	1591	159
Arrive On Green	0.06	0.13	0.13	0.07	0.13	0.13	0.07	0.26	0.26	0.30	0.49	0.49
Sat Flow, veh/h	1767	793	856	1767	1856	1494	1767	5066	1523	3428	3224	321
Grp Volume(v), veh/h	84	0	131	158	84	207	137	1084	237	705	832	860
Grp Sat Flow(s),veh/h/ln	1767	0	1649	1767	1856	1494	1767	1689	1523	1714	1763	1783
Q Serve(g_s), s	4.7	0.0	7.5	6.9	4.1	2.0	6.9	20.1	3.6	18.0	45.3	47.2
Cycle Q Clear(g_c), s	4.7	0.0	7.5	6.9	4.1	2.0	6.9	20.1	3.6	18.0	45.3	47.2
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	107	0	222	122	247	677	122	1322	506	1044	870	880
V/C Ratio(X)	0.78	0.00	0.59	1.30	0.34	0.31	1.12	0.82	0.47	0.68	0.96	0.98
Avail Cap(c_a), veh/h	163	0	396	122	384	788	122	1322	506	1044	870	880
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.56	0.56	0.56
Uniform Delay (d), s/veh	46.3	0.0	40.7	46.5	39.4	6.7	46.5	34.7	10.1	30.5	24.3	24.8
Incr Delay (d2), s/veh	13.0	0.0	2.5	180.7	0.8	0.3	118.6	5.8	3.1	1.0	14.6	17.9
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	2.4	0.0	3.1	9.1	1.9	1.4	7.0	8.6	2.4	7.2	20.4	22.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	0.0	43.2	227.3	40.2	7.0	165.1	40.5	13.2	31.4	38.9	42.7
LnGrp LOS	E	A	D	F	D	A	F	D	B	C	D	D
Approach Vol, veh/h		215			449			1458			2397	
Approach Delay, s/veh		49.5			90.7			47.8			38.1	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	31.9	12.0	19.6	13.0	55.4	12.2	19.4
Change Period (Y+Rc), s	6.1	5.8	5.1	6.1	6.1	* 6.1	6.1	6.1
Max Green Setting (Gmax), s	10.4	26.1	6.9	24.0	6.9	* 39	9.2	20.7
Max Q Clear Time (g_c+I1), s	20.0	22.1	8.9	9.5	8.9	49.2	6.7	6.1
Green Ext Time (p_c), s	0.0	2.1	0.0	0.5	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	620	190	160	70	250	60	60	40	40	100	50	60
Future Volume (veh/h)	620	190	160	70	250	60	60	40	40	100	50	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	653	200	155	74	263	51	52	57	41	105	53	60
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	770	587	427	175	528	100	301	316	257	230	100	113
Arrive On Green	0.22	0.31	0.31	0.10	0.18	0.18	0.17	0.17	0.17	0.13	0.13	0.13
Sat Flow, veh/h	3428	1919	1398	1767	2932	558	1767	1856	1507	1767	771	872
Grp Volume(v), veh/h	653	183	172	74	156	158	52	57	41	105	0	113
Grp Sat Flow(s),veh/h/ln	1714	1763	1555	1767	1763	1727	1767	1856	1507	1767	0	1643
Q Serve(g_s), s	12.6	5.5	6.0	2.7	5.5	5.7	1.7	1.8	1.6	3.8	0.0	4.4
Cycle Q Clear(g_c), s	12.6	5.5	6.0	2.7	5.5	5.7	1.7	1.8	1.6	3.8	0.0	4.4
Prop In Lane	1.00		0.90	1.00		0.32	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	770	539	475	175	318	311	301	316	257	230	0	213
V/C Ratio(X)	0.85	0.34	0.36	0.42	0.49	0.51	0.17	0.18	0.16	0.46	0.00	0.53
Avail Cap(c_a), veh/h	1061	917	809	254	625	612	642	674	547	745	0	692
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	18.5	18.7	29.2	25.4	25.5	24.4	24.4	24.3	27.7	0.0	28.0
Incr Delay (d2), s/veh	3.6	1.3	1.7	0.6	4.2	4.6	0.1	0.1	0.1	0.5	0.0	0.8
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	5.1	2.3	2.2	1.1	2.5	2.6	0.7	0.8	0.6	1.6	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	19.8	20.3	29.8	29.6	30.0	24.5	24.5	24.4	28.2	0.0	28.7
LnGrp LOS	C	B	C	C	C	C	C	C	C	C	A	C
Approach Vol, veh/h		1008			388			150			218	
Approach Delay, s/veh		26.0			29.8			24.5			28.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	26.4		14.0	20.1	17.8		16.8				
Change Period (Y+Rc), s	* 4.7	5.4		5.1	* 4.7	5.4		5.1				
Max Green Setting (Gmax), s	* 9.3	35.8		29.0	* 21	24.4		25.0				
Max Q Clear Time (g_c+I1), s	14.7	8.0		6.4	14.6	7.7		3.8				
Green Ext Time (p_c), s	0.0	5.3		0.6	0.9	3.5		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	390	210	30	30	30	150	410	30	240	930	140
Future Volume (veh/h)	110	390	210	30	30	30	150	410	30	240	930	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	116	411	163	32	32	32	158	432	32	253	979	120
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	167	472	387	108	836	360	211	2127	156	312	2390	801
Arrive On Green	0.05	0.25	0.25	0.03	0.24	0.24	0.06	0.44	0.44	0.09	0.47	0.47
Sat Flow, veh/h	3428	1856	1522	3428	3526	1520	3428	4808	352	3428	5066	1536
Grp Volume(v), veh/h	116	411	163	32	32	32	158	302	162	253	979	120
Grp Sat Flow(s),veh/h/ln	1714	1856	1522	1714	1763	1520	1714	1689	1782	1714	1689	1536
Q Serve(g_s), s	4.3	27.6	11.6	1.2	0.9	2.1	5.9	7.1	7.3	9.4	16.4	5.3
Cycle Q Clear(g_c), s	4.3	27.6	11.6	1.2	0.9	2.1	5.9	7.1	7.3	9.4	16.4	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	167	472	387	108	836	360	211	1494	788	312	2390	801
V/C Ratio(X)	0.70	0.87	0.42	0.30	0.04	0.09	0.75	0.20	0.21	0.81	0.41	0.15
Avail Cap(c_a), veh/h	261	659	541	161	1150	496	306	1494	788	464	2390	801
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	46.4	40.5	61.5	38.2	38.6	60.0	22.2	22.2	58.0	22.5	16.2
Incr Delay (d2), s/veh	5.1	9.1	0.7	1.5	0.0	0.1	5.8	0.3	0.6	6.6	0.5	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	2.0	13.5	4.3	0.5	0.4	0.8	2.7	2.8	3.1	4.3	6.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	55.6	41.2	63.0	38.2	38.7	65.8	22.5	22.8	64.6	23.0	16.6
LnGrp LOS	E	E	D	E	D	D	E	C	C	E	C	B
Approach Vol, veh/h		690			96			622			1352	
Approach Delay, s/veh		54.0			46.7			33.6			30.2	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	38.8	17.2	64.7	11.4	36.6	13.4	68.5
Change Period (Y+Rc), s	5.1	5.8	5.4	7.2	5.1	5.8	5.4	7.2
Max Green Setting (Gmax), s	6.1	46.2	17.6	36.6	9.9	42.4	11.6	42.6
Max Q Clear Time (g_c+I1), s	13.2	29.6	11.4	9.3	6.3	4.1	7.9	18.4
Green Ext Time (p_c), s	0.0	2.6	0.4	3.9	0.1	0.2	0.1	10.0

Intersection Summary	
HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D

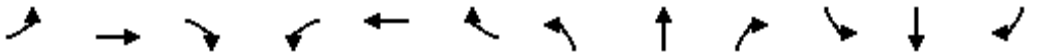
Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	300	160	520	280	400	250
Future Volume (veh/h)	300	160	520	280	400	250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	316	168	547	295	421	263
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	397	206	593	2002	567	505
Arrive On Green	0.18	0.18	0.34	0.57	0.32	0.32
Sat Flow, veh/h	2336	1166	1767	3618	1767	1572
Grp Volume(v), veh/h	247	237	547	295	421	263
Grp Sat Flow(s),veh/h/ln	1763	1646	1767	1763	1767	1572
Q Serve(g_s), s	10.9	11.2	24.1	3.2	17.2	11.0
Cycle Q Clear(g_c), s	10.9	11.2	24.1	3.2	17.2	11.0
Prop In Lane		0.71	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	312	291	593	2002	567	505
V/C Ratio(X)	0.79	0.81	0.92	0.15	0.74	0.52
Avail Cap(c_a), veh/h	392	366	709	2394	567	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	32.1	25.9	8.3	24.5	22.4
Incr Delay (d2), s/veh	8.4	10.8	16.0	0.0	8.5	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	4.9	11.5	1.0	7.7	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.3	42.8	41.9	8.3	33.0	26.2
LnGrp LOS	D	D	D	A	C	C
Approach Vol, veh/h	484			842	684	
Approach Delay, s/veh	41.5			30.1	30.4	
Approach LOS	D			C	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	30.5	31.7	18.8		50.5
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	26.0	32.5	18.0		55.0
Max Q Clear Time (g_c+I1), s	19.2	26.1	13.2		5.2
Green Ext Time (p_c), s	1.4	1.0	1.1		1.8

Intersection Summary	
HCM 6th Ctrl Delay	33.0
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	110	100	120	90	40	200	420	120	80	990	420
Future Volume (veh/h)	180	110	100	120	90	40	200	420	120	80	990	420
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		0.95	1.00		0.96	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	189	116	105	126	95	38	211	442	84	84	1042	322
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	238	137	124	173	330	124	237	1667	715	258	1881	581
Arrive On Green	0.07	0.15	0.15	0.05	0.13	0.13	0.13	0.47	0.47	0.15	0.49	0.49
Sat Flow, veh/h	3428	897	812	3428	2470	925	1767	3526	1513	1767	3812	1177
Grp Volume(v), veh/h	189	0	221	126	66	67	211	442	84	84	923	441
Grp Sat Flow(s),veh/h/ln	1714	0	1709	1714	1763	1632	1767	1763	1513	1767	1689	1612
Q Serve(g_s), s	7.6	0.0	17.6	5.1	4.7	5.2	16.4	10.6	3.2	6.0	26.7	26.7
Cycle Q Clear(g_c), s	7.6	0.0	17.6	5.1	4.7	5.2	16.4	10.6	3.2	6.0	26.7	26.7
Prop In Lane	1.00		0.48	1.00		0.57	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	238	0	261	173	236	218	237	1667	715	258	1667	795
V/C Ratio(X)	0.79	0.00	0.85	0.73	0.28	0.31	0.89	0.27	0.12	0.33	0.55	0.55
Avail Cap(c_a), veh/h	291	0	361	208	330	305	331	1667	715	258	1667	795
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.2	0.0	57.7	65.5	54.6	54.8	59.6	22.2	11.3	53.6	24.7	24.7
Incr Delay (d2), s/veh	11.6	0.0	12.6	9.8	0.6	0.8	19.3	0.4	0.3	0.7	1.3	2.8
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	3.6	0.0	8.4	2.5	2.2	2.2	8.4	4.3	1.6	2.6	10.4	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.8	0.0	70.3	75.4	55.2	55.6	78.9	22.6	11.6	54.3	26.0	27.5
LnGrp LOS	E	A	E	E	E	E	E	C	B	D	C	C
Approach Vol, veh/h		410			259			737			1448	
Approach Delay, s/veh		72.8			65.1			37.5			28.1	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.4	73.2	12.2	27.2	24.6	76.1	14.8	24.5
Change Period (Y+Rc), s	7.0	* 7	5.1	5.8	5.8	7.0	5.1	5.8
Max Green Setting (Gmax), s	12.0	* 66	8.5	29.6	26.2	52.0	11.9	26.2
Max Q Clear Time (g_c+I1), s	8.0	12.6	7.1	19.6	18.4	28.7	9.6	7.2
Green Ext Time (p_c), s	0.0	4.6	0.0	0.8	0.3	12.6	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

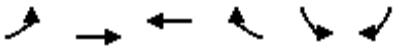
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	130	160	420	190	140	320	950	730	420	1260	190
Future Volume (veh/h)	140	130	160	420	190	140	320	950	730	420	1260	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	147	137	30	442	200	127	337	1000	451	442	1326	131
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	172	282	228	504	210	133	276	1680	507	377	1255	123
Arrive On Green	0.10	0.15	0.15	0.15	0.20	0.20	0.05	0.11	0.11	0.21	0.39	0.39
Sat Flow, veh/h	1767	1856	1501	3428	1043	663	1767	5066	1529	1767	3228	317
Grp Volume(v), veh/h	147	137	30	442	0	327	337	1000	451	442	721	736
Grp Sat Flow(s),veh/h/ln	1767	1856	1501	1714	0	1706	1767	1689	1529	1767	1763	1782
Q Serve(g_s), s	11.5	9.5	2.4	17.7	0.0	26.5	21.9	26.3	40.7	29.9	54.4	54.4
Cycle Q Clear(g_c), s	11.5	9.5	2.4	17.7	0.0	26.5	21.9	26.3	40.7	29.9	54.4	54.4
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	172	282	228	504	0	344	276	1680	507	377	685	693
V/C Ratio(X)	0.85	0.49	0.13	0.88	0.00	0.95	1.22	0.60	0.89	1.17	1.05	1.06
Avail Cap(c_a), veh/h	415	414	335	732	0	344	276	1680	507	377	685	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.2	54.3	51.4	58.5	0.0	55.2	66.4	53.4	59.8	55.0	42.8	42.8
Incr Delay (d2), s/veh	8.6	1.3	0.3	7.6	0.0	35.9	119.5	1.1	15.2	101.7	48.8	51.9
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	5.5	4.5	0.9	8.0	0.0	14.5	19.6	12.1	18.9	23.5	31.7	32.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	55.6	51.6	66.0	0.0	91.2	185.9	54.5	75.0	156.8	91.5	94.7
LnGrp LOS	E	E	D	E	A	F	F	D	E	F	F	F
Approach Vol, veh/h		314			769			1788			1899	
Approach Delay, s/veh		62.3			76.7			84.4			107.9	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	52.2	25.7	27.1	27.0	60.2	18.8	34.0
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	29.9	27.2	29.9	31.2	21.9	35.2	32.9	28.2
Max Q Clear Time (g_c+I1), s	31.9	42.7	19.7	11.5	23.9	56.4	13.5	28.5
Green Ext Time (p_c), s	0.0	0.0	0.9	0.7	0.0	0.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	91.1
HCM 6th LOS	F

Notes

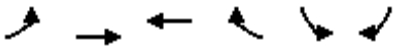
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	630	350	40	100	80
Future Volume (veh/h)	50	630	350	40	100	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	663	368	42	105	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	107	1724	838	95	322	287
Arrive On Green	0.06	0.49	0.26	0.26	0.18	0.18
Sat Flow, veh/h	1767	3618	3264	359	1767	1572
Grp Volume(v), veh/h	53	663	203	207	105	84
Grp Sat Flow(s),veh/h/ln	1767	1763	1763	1768	1767	1572
Q Serve(g_s), s	0.8	3.2	2.6	2.7	1.4	1.3
Cycle Q Clear(g_c), s	0.8	3.2	2.6	2.7	1.4	1.3
Prop In Lane	1.00			0.20	1.00	1.00
Lane Grp Cap(c), veh/h	107	1724	466	467	322	287
V/C Ratio(X)	0.50	0.38	0.44	0.44	0.33	0.29
Avail Cap(c_a), veh/h	355	3603	1158	1161	1161	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	4.4	8.4	8.4	9.7	9.7
Incr Delay (d2), s/veh	3.5	0.1	0.6	0.7	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.5	0.5	0.4	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.0	4.5	9.0	9.1	10.3	10.2
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		716	410		189	
Approach Delay, s/veh		5.4	9.0		10.3	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		17.9		9.5	6.2	11.7
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		28.0		18.0	5.5	18.0
Max Q Clear Time (g_c+I1), s		5.2		3.4	2.8	4.7
Green Ext Time (p_c), s		4.0		0.4	0.0	1.7

Intersection Summary						
HCM 6th Ctrl Delay			7.2			
HCM 6th LOS			A			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	160	540	320	60	90	180
Future Volume (veh/h)	160	540	320	60	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	168	568	337	63	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	218	2008	479	90	307	467
Arrive On Green	0.12	0.57	0.32	0.32	0.17	0.17
Sat Flow, veh/h	1767	3618	1507	282	1767	1572
Grp Volume(v), veh/h	168	568	0	400	95	189
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1788	1767	1572
Q Serve(g_s), s	3.2	2.9	0.0	6.9	1.6	3.4
Cycle Q Clear(g_c), s	3.2	2.9	0.0	6.9	1.6	3.4
Prop In Lane	1.00			0.16	1.00	1.00
Lane Grp Cap(c), veh/h	218	2008	0	568	307	467
V/C Ratio(X)	0.77	0.28	0.00	0.70	0.31	0.40
Avail Cap(c_a), veh/h	479	3319	0	969	907	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	3.9	0.0	10.5	12.7	9.8
Incr Delay (d2), s/veh	5.6	0.1	0.0	1.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.1	0.0	1.7	0.6	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.5	3.9	0.0	12.1	13.2	10.4
LnGrp LOS	C	A	A	B	B	B
Approach Vol, veh/h		736	400		284	
Approach Delay, s/veh		7.7	12.1		11.3	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		24.5		10.6	8.8	15.6
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		33.0		18.0	9.5	19.0
Max Q Clear Time (g_c+I1), s		4.9		5.4	5.2	8.9
Green Ext Time (p_c), s		3.5		0.7	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	260	310	270	2120	1290	220
Future Volume (veh/h)	260	310	270	2120	1290	220
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	274	168	284	2232	1358	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	310	276	318	2451	1626	697
Arrive On Green	0.18	0.18	0.18	0.70	0.46	0.46
Sat Flow, veh/h	1767	1572	1767	3618	3618	1512
Grp Volume(v), veh/h	274	168	284	2232	1358	156
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1512
Q Serve(g_s), s	15.9	10.4	16.5	55.4	35.5	6.5
Cycle Q Clear(g_c), s	15.9	10.4	16.5	55.4	35.5	6.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	310	276	318	2451	1626	697
V/C Ratio(X)	0.88	0.61	0.89	0.91	0.84	0.22
Avail Cap(c_a), veh/h	554	493	406	3129	2127	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	40.0	42.2	13.3	24.8	17.0
Incr Delay (d2), s/veh	3.3	0.8	18.3	3.3	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.1	8.4	16.0	13.4	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.6	40.8	60.4	16.6	26.7	17.1
LnGrp LOS	D	D	E	B	C	B
Approach Vol, veh/h	442			2516	1514	
Approach Delay, s/veh	43.8			21.6	25.7	
Approach LOS	D			C	C	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	80.7		24.6	24.6	56.0
Change Period (Y+Rc), s	7.5		6.1	* 5.7	7.5
Max Green Setting (Gmax), s	93.4		33.0	* 24	63.5
Max Q Clear Time (g_c+I1), s	57.4		17.9	18.5	37.5
Green Ext Time (p_c), s	15.8		0.6	0.4	6.6

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	140	120	710	90	80	220	990	1200	200	1000	300
Future Volume (veh/h)	90	140	120	710	90	80	220	990	1200	200	1000	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.97	1.00		0.96	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	95	147	26	747	95	73	232	1042	979	211	1053	295
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	190	378	159	817	221	170	210	1324	1635	233	1051	292
Arrive On Green	0.11	0.11	0.11	0.23	0.23	0.23	0.12	0.38	0.38	0.13	0.39	0.39
Sat Flow, veh/h	1767	3526	1479	3534	957	735	1767	3526	2649	1767	2708	752
Grp Volume(v), veh/h	95	147	26	747	0	168	232	1042	979	211	682	666
Grp Sat Flow(s),veh/h/ln	1767	1763	1479	1767	0	1693	1767	1763	1325	1767	1763	1697
Q Serve(g_s), s	7.5	5.7	2.4	30.5	0.0	12.5	17.6	38.7	34.1	17.4	57.1	57.4
Cycle Q Clear(g_c), s	7.5	5.7	2.4	30.5	0.0	12.5	17.6	38.7	34.1	17.4	57.1	57.4
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	190	378	159	817	0	391	210	1324	1635	233	684	659
V/C Ratio(X)	0.50	0.39	0.16	0.91	0.00	0.43	1.10	0.79	0.60	0.91	1.00	1.01
Avail Cap(c_a), veh/h	442	882	370	842	0	403	210	1324	1635	249	684	659
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	61.5	60.0	55.4	0.0	48.5	65.1	40.9	18.1	63.3	45.1	45.2
Incr Delay (d2), s/veh	2.5	0.8	0.6	14.9	0.0	1.6	92.3	3.7	0.9	32.3	33.7	37.5
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	3.4	2.6	0.9	14.9	0.0	5.4	13.1	16.9	17.2	9.8	30.4	30.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.7	62.3	60.5	70.3	0.0	50.1	157.4	44.6	19.1	95.5	78.8	82.8
LnGrp LOS	E	E	E	E	A	D	F	D	B	F	E	F
Approach Vol, veh/h		268			915			2253			1559	
Approach Delay, s/veh		63.0			66.6			45.1			82.8	
Approach LOS		E			E			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.9	61.7		40.0	23.0	63.6		21.3
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	20.3	54.2		35.2	17.6	57.4		37.0
Max Q Clear Time (g_c+I1), s	19.4	40.7		32.5	19.6	59.4		9.5
Green Ext Time (p_c), s	0.1	11.9		1.7	0.0	0.0		1.4

Intersection Summary	
HCM 6th Ctrl Delay	61.8
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	60	50	470	60	1160	50	460	500	1160	370	140
Future Volume (veh/h)	60	60	50	470	60	1160	50	460	500	1160	370	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	63	63	48	495	63	695	53	484	315	1221	389	131
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	186	100	76	344	44	1491	68	684	637	1124	1721	739
Arrive On Green	0.11	0.11	0.11	0.22	0.22	0.22	0.04	0.19	0.19	0.55	0.82	0.82
Sat Flow, veh/h	1767	948	723	1576	201	2670	1767	3526	1512	3428	3526	1513
Grp Volume(v), veh/h	63	0	111	558	0	695	53	484	315	1221	389	131
Grp Sat Flow(s),veh/h/ln	1767	0	1671	1777	0	1335	1767	1763	1512	1714	1763	1513
Q Serve(g_s), s	4.6	0.0	8.9	30.6	0.0	0.0	4.2	18.0	21.6	45.9	3.5	2.6
Cycle Q Clear(g_c), s	4.6	0.0	8.9	30.6	0.0	0.0	4.2	18.0	21.6	45.9	3.5	2.6
Prop In Lane	1.00		0.43	0.89		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	176	388	0	1491	68	684	637	1124	1721	739
V/C Ratio(X)	0.34	0.00	0.63	1.44	0.00	0.47	0.78	0.71	0.49	1.09	0.23	0.18
Avail Cap(c_a), veh/h	366	0	346	388	0	1491	125	735	659	1124	1721	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	58.1	0.0	60.0	54.7	0.0	19.2	66.7	52.7	30.5	31.7	6.9	6.9
Incr Delay (d2), s/veh	1.1	0.0	3.7	210.8	0.0	0.2	17.1	6.1	2.7	40.5	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	2.2	0.0	4.0	36.1	0.0	6.6	2.2	8.4	11.5	20.8	1.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.2	0.0	63.7	265.5	0.0	19.5	83.8	58.8	33.3	72.2	7.0	6.9
LnGrp LOS	E	A	E	F	A	B	F	E	C	F	A	A
Approach Vol, veh/h		174			1253			852			1741	
Approach Delay, s/veh		62.1			129.0			50.9			52.7	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	32.9		19.3	10.5	74.2		36.0
Change Period (Y+Rc), s	5.8	* 5.8		4.6	5.1	5.8		5.4
Max Green Setting (Gmax), s	30.3	* 29		29.0	9.9	49.6		30.6
Max Q Clear Time (g_c+I1), s	47.9	23.6		10.9	6.2	5.5		32.6
Green Ext Time (p_c), s	0.0	2.6		0.7	0.0	4.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	76.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1130	120	110	80	60	40	130	930	80	70	670	700
Future Volume (veh/h)	1130	120	110	80	60	40	130	930	80	70	670	700
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		0.96	1.00		1.00	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1165	124	0	82	62	38	134	959	82	72	691	722
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1271	688		95	72	140	156	1123	96	90	1091	1883
Arrive On Green	0.37	0.37	0.00	0.09	0.09	0.09	0.09	0.34	0.34	0.05	0.31	0.31
Sat Flow, veh/h	3428	1856	0	1027	777	1516	1767	3287	281	1767	3526	2768
Grp Volume(v), veh/h	1165	124	0	144	0	38	134	514	527	72	691	722
Grp Sat Flow(s),veh/h/ln	1714	1856	0	1804	0	1516	1767	1763	1805	1767	1763	1384
Q Serve(g_s), s	49.0	6.8	0.0	11.9	0.0	3.5	11.3	41.0	41.0	6.1	25.4	17.1
Cycle Q Clear(g_c), s	49.0	6.8	0.0	11.9	0.0	3.5	11.3	41.0	41.0	6.1	25.4	17.1
Prop In Lane	1.00		0.00	0.57		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	1271	688		167	0	140	156	602	617	90	1091	1883
V/C Ratio(X)	0.92	0.18		0.86	0.00	0.27	0.86	0.85	0.85	0.80	0.63	0.38
Avail Cap(c_a), veh/h	1520	823		174	0	146	267	721	738	136	1180	1953
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	32.1	0.0	67.7	0.0	63.9	68.0	46.3	46.3	70.9	44.8	10.4
Incr Delay (d2), s/veh	8.1	0.1	0.0	32.7	0.0	1.0	5.5	9.3	9.1	9.8	1.2	0.2
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	21.8	3.1	0.0	7.1	0.0	1.4	5.3	19.2	19.6	3.0	11.0	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	32.2	0.0	100.3	0.0	64.9	73.4	55.5	55.3	80.7	46.0	10.6
LnGrp LOS	D	C		F	A	E	E	E	E	F	D	B
Approach Vol, veh/h		1289			182			1175			1485	
Approach Delay, s/veh		51.4			92.9			57.5			30.5	
Approach LOS		D			F			E			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	57.8		60.0	18.8	53.0		19.4
Change Period (Y+Rc), s	6.2	* 6.2		4.0	5.4	6.2		5.4
Max Green Setting (Gmax), s	11.6	* 62		67.0	22.8	50.6		14.6
Max Q Clear Time (g_c+I1), s	13.1	43.0		51.0	13.3	27.4		13.9
Green Ext Time (p_c), s	0.0	8.6		5.1	0.1	11.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	820	170	110	460	300	200	580	50	270	460	110
Future Volume (veh/h)	370	820	170	110	460	300	200	580	50	270	460	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.95	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	389	863	116	116	484	221	211	611	45	284	484	95
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	448	1091	473	124	581	263	239	823	60	312	846	165
Arrive On Green	0.13	0.31	0.31	0.07	0.25	0.25	0.14	0.25	0.25	0.18	0.29	0.29
Sat Flow, veh/h	3428	3526	1528	1767	2330	1056	1767	3314	244	1767	2925	570
Grp Volume(v), veh/h	389	863	116	116	365	340	211	324	332	284	290	289
Grp Sat Flow(s),veh/h/ln	1714	1763	1528	1767	1763	1623	1767	1763	1795	1767	1763	1732
Q Serve(g_s), s	12.2	24.5	6.2	7.1	21.5	21.7	12.8	18.6	18.6	17.3	15.3	15.5
Cycle Q Clear(g_c), s	12.2	24.5	6.2	7.1	21.5	21.7	12.8	18.6	18.6	17.3	15.3	15.5
Prop In Lane	1.00		1.00	1.00		0.65	1.00		0.14	1.00		0.33
Lane Grp Cap(c), veh/h	448	1091	473	124	439	405	239	438	446	312	510	501
V/C Ratio(X)	0.87	0.79	0.25	0.93	0.83	0.84	0.88	0.74	0.74	0.91	0.57	0.58
Avail Cap(c_a), veh/h	467	1169	507	124	469	432	245	559	569	321	635	624
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	34.6	28.2	50.6	38.9	39.0	46.4	37.9	37.9	44.2	33.1	33.2
Incr Delay (d2), s/veh	15.6	4.3	0.6	60.2	13.2	14.9	28.4	4.8	4.8	28.2	1.4	1.5
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	6.0	10.6	2.3	5.1	10.5	9.9	7.4	8.3	8.5	9.8	6.5	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	38.9	28.8	110.8	52.1	53.9	74.9	42.7	42.7	72.5	34.5	34.7
LnGrp LOS	E	D	C	F	D	D	E	D	D	E	C	C
Approach Vol, veh/h		1368			821			867			863	
Approach Delay, s/veh		44.6			61.1			50.5			47.1	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	39.7	19.9	37.1	19.4	33.1	24.4	32.6
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	7.7	36.3	15.2	39.4	14.9	29.1	19.9	34.7
Max Q Clear Time (g_c+I1), s	19.1	26.5	14.8	17.5	14.2	23.7	19.3	20.6
Green Ext Time (p_c), s	0.0	6.2	0.0	4.7	0.1	2.9	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	49.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	580	170	430	480	330	540
Future Volume (veh/h)	580	170	430	480	330	540
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1670	1670	1670	1670	1670	1670
Adj Flow Rate, veh/h	611	0	453	0	347	568
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	727		503		411	1049
Arrive On Green	0.24	0.00	0.30	0.00	0.26	0.63
Sat Flow, veh/h	3086	1415	1670	0	1590	1670
Grp Volume(v), veh/h	611	0	453	0	347	568
Grp Sat Flow(s),veh/h/ln	1543	1415	1670	0	1590	1670
Q Serve(g_s), s	11.2	0.0	15.5	0.0	12.3	11.4
Cycle Q Clear(g_c), s	11.2	0.0	15.5	0.0	12.3	11.4
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	727		503		411	1049
V/C Ratio(X)	0.84		0.90		0.85	0.54
Avail Cap(c_a), veh/h	985		531		1067	1120
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	19.9	0.0	20.9	6.2
Incr Delay (d2), s/veh	3.7	0.0	17.9	0.0	4.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	8.0	0.0	4.8	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.4	0.0	37.9	0.0	25.8	6.7
LnGrp LOS	C		D		C	A
Approach Vol, veh/h	611		453			915
Approach Delay, s/veh	25.4		37.9			13.9
Approach LOS	C		D			B

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	19.5	22.0		18.0		41.5
Change Period (Y+Rc), s	4.1	4.1		4.0		4.1
Max Green Setting (Gmax), s	39.9	18.9		19.0		39.9
Max Q Clear Time (g_c+I1), s	14.3	17.5		13.2		13.4
Green Ext Time (p_c), s	1.1	0.4		0.8		4.3

Intersection Summary	
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	610	240	670	710	0	0
Future Volume (veh/h)	610	240	670	710	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856		
Adj Flow Rate, veh/h	642	169	705	747		
Peak Hour Factor	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	3	3	3	3		
Cap, veh/h	1523	679	1663	2244		
Arrive On Green	0.43	0.43	0.44	0.44		
Sat Flow, veh/h	3618	1572	3428	5233		
Grp Volume(v), veh/h	642	169	705	747		
Grp Sat Flow(s),veh/h/ln	1763	1572	1714	1689		
Q Serve(g_s), s	12.6	6.8	14.4	9.6		
Cycle Q Clear(g_c), s	12.6	6.8	14.4	9.6		
Prop In Lane		1.00	1.00			
Lane Grp Cap(c), veh/h	1523	679	1663	2244		
V/C Ratio(X)	0.42	0.25	0.42	0.33		
Avail Cap(c_a), veh/h	1523	679	1663	2244		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.7	18.1	19.5	18.2		
Incr Delay (d2), s/veh	0.9	0.9	0.8	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.3	2.6	5.9	3.8		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	18.9	20.3	18.6		
LnGrp LOS	C	B	C	B		
Approach Vol, veh/h	811			1452		
Approach Delay, s/veh	20.2			19.4		
Approach LOS	C			B		

Timer - Assigned Phs		2		4
Phs Duration (G+Y+Rc), s		50.0		50.0
Change Period (Y+Rc), s		* 5.7		6.8
Max Green Setting (Gmax), s		* 44		43.2
Max Q Clear Time (g_c+I1), s		16.4		14.6
Green Ext Time (p_c), s		5.7		3.6

Intersection Summary				
HCM 6th Ctrl Delay			19.7	
HCM 6th LOS			B	

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1300	240	400	990	220	30
Future Volume (veh/h)	1300	240	400	990	220	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1313	191	404	1000	222	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1488	899	492	2284	264	
Arrive On Green	0.42	0.42	0.14	0.65	0.15	0.00
Sat Flow, veh/h	3618	1572	3428	3618	1767	1572
Grp Volume(v), veh/h	1313	191	404	1000	222	0
Grp Sat Flow(s),veh/h/ln	1763	1572	1714	1763	1767	1572
Q Serve(g_s), s	23.9	4.1	8.0	9.7	8.5	0.0
Cycle Q Clear(g_c), s	23.9	4.1	8.0	9.7	8.5	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1488	899	492	2284	264	
V/C Ratio(X)	0.88	0.21	0.82	0.44	0.84	
Avail Cap(c_a), veh/h	1672	981	508	2483	302	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.5	7.3	28.9	6.0	28.8	0.0
Incr Delay (d2), s/veh	5.0	0.0	9.4	0.6	15.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	1.6	3.5	2.1	4.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.5	7.3	38.3	6.6	43.9	0.0
LnGrp LOS	C	A	D	A	D	
Approach Vol, veh/h	1504			1404	222	
Approach Delay, s/veh	21.5			15.7	43.9	
Approach LOS	C			B	D	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	15.7	37.4			53.1	16.5
Change Period (Y+Rc), s *	5.7	8.0			8.0	6.1
Max Green Setting (Gmax), s	10.0	33.0			49.0	11.9
Max Q Clear Time (g_c+I1), s	10.0	25.9			11.7	10.5
Green Ext Time (p_c), s	0.0	3.5			19.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Notes

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	2100	120	140	1400	120	90	180	120	90	210	90
Future Volume (veh/h)	140	2100	120	140	1400	120	90	180	120	90	210	90
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		0.98	1.00		0.94	1.00		1.00
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	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670
Adj Flow Rate, veh/h	146	2188	94	146	1458	94	94	188	83	94	219	68
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	223	1408	628	682	1921	839	221	498	146	221	346	272
Arrive On Green	0.07	0.44	0.44	0.22	0.61	0.61	0.07	0.11	0.11	0.07	0.11	0.11
Sat Flow, veh/h	3086	3173	1415	3086	3173	1386	3086	4559	1333	3086	3173	2491
Grp Volume(v), veh/h	146	2188	94	146	1458	94	94	188	83	94	219	68
Grp Sat Flow(s),veh/h/ln	1543	1586	1415	1543	1586	1386	1543	1520	1333	1543	1586	1245
Q Serve(g_s), s	8.3	79.9	5.2	7.0	60.4	5.2	5.3	6.9	7.1	5.3	11.9	4.5
Cycle Q Clear(g_c), s	8.3	79.9	5.2	7.0	60.4	5.2	5.3	6.9	7.1	5.3	11.9	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	1408	628	682	1921	839	221	498	146	221	346	272
V/C Ratio(X)	0.66	1.55	0.15	0.21	0.76	0.11	0.43	0.38	0.57	0.43	0.63	0.25
Avail Cap(c_a), veh/h	245	1408	628	682	1921	839	257	1190	348	245	816	641
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	0.84	0.84	0.84	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.3	50.0	16.1	57.3	25.9	15.0	80.0	74.5	33.6	80.0	76.7	73.4
Incr Delay (d2), s/veh	3.8	252.6	0.5	0.0	2.4	0.2	0.4	0.1	1.1	0.5	0.7	0.2
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	3.4	79.5	2.5	2.7	21.9	1.8	2.1	2.7	2.4	2.1	4.9	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.2	302.7	16.6	57.4	28.4	15.3	80.4	74.6	34.7	80.5	77.4	73.6
LnGrp LOS	F	F	B	E	C	B	F	E	C	F	E	E
Approach Vol, veh/h		2428			1698			365			381	
Approach Delay, s/veh		278.5			30.1			67.0			77.5	
Approach LOS		F			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	47.8	87.9	18.6	25.8	18.7	117.0	18.6	25.8
Change Period (Y+Rc), s	8.0	* 8	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1
Max Green Setting (Gmax), s	13.3	* 80	* 15	46.3	* 14	78.9	* 14	47.0
Max Q Clear Time (g_c+I1), s	10.0	81.9	7.3	13.9	10.3	62.4	7.3	9.1
Green Ext Time (p_c), s	0.1	0.0	0.1	0.8	0.1	14.6	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	160.4
HCM 6th LOS	F

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	1740	0	0	1050	320	0	0	0	320	0	370
Future Volume (veh/h)	490	1740	0	0	1050	320	0	0	0	320	0	370
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		1.00
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	1856	1856	0	0	1856	1856	1856	1856	1856	1856	0	1856
Adj Flow Rate, veh/h	516	1832	0	0	1105	298	0	0	0	337	0	274
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, %	3	3	0	0	3	3	3	3	3	3	0	3
Cap, veh/h	583	3393	0	0	2701	1205	0	1	0	0	0	0
Arrive On Green	0.17	0.96	0.00	0.00	0.77	0.77	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3428	3618	0	0	3618	1572	0	1856	0		0	
Grp Volume(v), veh/h	516	1832	0	0	1105	298	0	0	0		0.0	
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1572	0	1856	0			
Q Serve(g_s), s	23.5	6.5	0.0	0.0	17.1	8.7	0.0	0.0	0.0			
Cycle Q Clear(g_c), s	23.5	6.5	0.0	0.0	17.1	8.7	0.0	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00			
Lane Grp Cap(c), veh/h	583	3393	0	0	2701	1205	0	1	0			
V/C Ratio(X)	0.89	0.54	0.00	0.00	0.41	0.25	0.00	0.00	0.00			
Avail Cap(c_a), veh/h	964	3393	0	0	2701	1205	0	58	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.59	0.59	0.00	0.00	0.00			
Uniform Delay (d), s/veh	64.9	0.2	0.0	0.0	6.4	5.4	0.0	0.0	0.0			
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.0	0.3	0.3	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			
%ile BackOfQ(50%),veh/ln	10.0	0.0	0.0	0.0	5.2	2.5	0.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.4	0.3	0.0	0.0	6.6	5.7	0.0	0.0	0.0			
LnGrp LOS	E	A	A	A	A	A	A	A	A			
Approach Vol, veh/h		2348			1403			0				
Approach Delay, s/veh		14.6			6.4			0.0				
Approach LOS		B			A							
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		160.0			31.4	128.6		0.0				
Change Period (Y+Rc), s		6.0			* 4.2	6.0		4.6				
Max Green Setting (Gmax), s		108.4			* 45	59.2		5.0				
Max Q Clear Time (g_c+I1), s		8.5			25.5	19.1		0.0				
Green Ext Time (p_c), s		74.4			1.7	26.2		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1640	410	320	1050	170	270	390	380	100	280	100
Future Volume (veh/h)	140	1640	410	320	1050	170	270	390	380	100	280	100
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		0.98	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	147	1726	316	337	1105	147	284	411	268	105	295	79
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	1614	824	411	1742	864	263	487	314	227	630	165
Arrive On Green	0.09	0.46	0.46	0.12	0.49	0.49	0.08	0.24	0.24	0.07	0.23	0.23
Sat Flow, veh/h	1767	3526	1536	3428	3526	1537	3428	2026	1305	3428	2740	719
Grp Volume(v), veh/h	147	1726	316	337	1105	147	284	357	322	105	188	186
Grp Sat Flow(s),veh/h/ln	1767	1763	1536	1714	1763	1537	1714	1763	1568	1714	1763	1696
Q Serve(g_s), s	14.8	82.4	11.9	17.3	41.6	8.4	13.8	34.7	35.3	5.3	16.5	17.1
Cycle Q Clear(g_c), s	14.8	82.4	11.9	17.3	41.6	8.4	13.8	34.7	35.3	5.3	16.5	17.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.42
Lane Grp Cap(c), veh/h	165	1614	824	411	1742	864	263	424	377	227	405	390
V/C Ratio(X)	0.89	1.07	0.38	0.82	0.63	0.17	1.08	0.84	0.85	0.46	0.46	0.48
Avail Cap(c_a), veh/h	195	1614	824	411	1742	864	263	488	434	229	470	452
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)	0.58	0.58	0.58	0.65	0.65	0.65	1.00	1.00	1.00	0.89	0.89	0.89
Uniform Delay (d), s/veh	80.7	48.8	10.0	77.3	33.5	19.2	83.1	65.1	65.4	80.9	59.7	59.9
Incr Delay (d2), s/veh	19.8	39.2	0.8	8.7	1.2	0.3	78.6	10.1	12.4	0.5	0.3	0.3
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	7.5	43.1	3.8	8.0	17.4	3.1	8.9	16.6	15.3	2.4	7.4	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.4	88.0	10.8	86.0	34.7	19.5	161.7	75.2	77.8	81.4	60.0	60.2
LnGrp LOS	F	F	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h		2189			1589			963			479	
Approach Delay, s/veh		77.7			44.2			101.6			64.8	
Approach LOS		E			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.6	88.4	18.0	46.0	21.0	95.0	16.1	47.9
Change Period (Y+Rc), s	6.0	* 6	* 4.2	4.6	* 4.2	6.0	* 4.2	4.6
Max Green Setting (Gmax), s	16.8	* 82	* 14	48.0	* 20	79.3	* 12	49.8
Max Q Clear Time (g_c+I1), s	19.3	84.4	15.8	19.1	16.8	43.6	7.3	37.3
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	0.0	22.3	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	70.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	1780	440	180	1200	40	220	300	220	40	140	170
Future Volume (veh/h)	260	1780	440	180	1200	40	220	300	220	40	140	170
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		0.98	1.00		0.96	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	268	1835	351	186	1237	35	227	309	150	41	144	123
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	642	2084	910	229	1611	46	266	398	187	111	297	236
Arrive On Green	0.19	0.59	0.59	0.07	0.46	0.46	0.08	0.17	0.17	0.06	0.16	0.16
Sat Flow, veh/h	3428	3526	1540	3428	3499	99	3428	2290	1079	1767	1869	1482
Grp Volume(v), veh/h	268	1835	351	186	623	649	227	236	223	41	135	132
Grp Sat Flow(s),veh/h/ln	1714	1763	1540	1714	1763	1835	1714	1763	1606	1767	1763	1589
Q Serve(g_s), s	12.4	79.9	21.7	9.6	53.1	53.1	11.8	23.0	24.0	4.0	12.6	13.7
Cycle Q Clear(g_c), s	12.4	79.9	21.7	9.6	53.1	53.1	11.8	23.0	24.0	4.0	12.6	13.7
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.67	1.00		0.93
Lane Grp Cap(c), veh/h	642	2084	910	229	812	845	266	306	279	111	281	253
V/C Ratio(X)	0.42	0.88	0.39	0.81	0.77	0.77	0.85	0.77	0.80	0.37	0.48	0.52
Avail Cap(c_a), veh/h	642	2084	910	229	812	845	352	431	393	128	377	340
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)	0.15	0.15	0.15	0.49	0.49	0.49	0.72	0.72	0.72	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.5	31.4	19.5	82.9	40.5	40.5	82.0	70.9	71.4	80.9	68.9	69.4
Incr Delay (d2), s/veh	0.0	0.9	0.2	9.9	3.5	3.3	8.7	2.3	3.7	0.8	0.5	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	5.3	31.7	7.8	4.5	22.9	23.8	5.5	10.5	10.1	1.9	5.7	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.5	32.3	19.7	92.8	44.0	43.9	90.8	73.3	75.0	81.7	69.4	70.0
LnGrp LOS	E	C	B	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		2454			1458			686			308	
Approach Delay, s/veh		34.0			50.2			79.6			71.3	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	112.4	18.1	33.2	39.7	88.9	15.5	35.9
Change Period (Y+Rc), s	* 4.2	6.0	* 4.2	4.6	6.0	* 6	* 4.2	4.6
Max Green Setting (Gmax), s	* 12	92.0	* 19	38.5	21.1	* 83	* 13	44.0
Max Q Clear Time (g_c+I1), s	11.6	81.9	13.8	15.7	14.4	55.1	6.0	26.0
Green Ext Time (p_c), s	0.0	9.9	0.2	0.9	0.3	19.4	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1810	200	210	1300	120	100	320	220	70	130	60
Future Volume (veh/h)	90	1810	200	210	1300	120	100	320	220	70	130	60
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		0.98	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	1885	146	219	1354	89	104	333	161	73	135	46
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	226	1579	792	1478	2911	1377	227	318	154	223	503	517
Arrive On Green	0.07	0.45	0.45	0.43	0.83	0.83	0.07	0.27	0.27	0.06	0.27	0.27
Sat Flow, veh/h	3428	3526	1536	3428	3526	1544	3428	1168	565	3428	1856	1524
Grp Volume(v), veh/h	94	1885	146	219	1354	89	104	0	494	73	135	46
Grp Sat Flow(s),veh/h/ln	1714	1763	1536	1714	1763	1544	1714	0	1733	1714	1856	1524
Q Serve(g_s), s	4.7	80.6	5.9	7.0	19.6	1.2	5.3	0.0	49.0	3.7	10.3	3.7
Cycle Q Clear(g_c), s	4.7	80.6	5.9	7.0	19.6	1.2	5.3	0.0	49.0	3.7	10.3	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	226	1579	792	1478	2911	1377	227	0	472	223	503	517
V/C Ratio(X)	0.42	1.19	0.18	0.15	0.47	0.06	0.46	0.00	1.05	0.33	0.27	0.09
Avail Cap(c_a), veh/h	229	1579	792	1478	2911	1377	229	0	472	229	505	519
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)	0.33	0.33	0.33	1.00	1.00	1.00	0.99	0.00	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.7	49.7	32.0	31.1	4.4	1.1	80.9	0.0	65.5	80.4	51.6	40.8
Incr Delay (d2), s/veh	0.1	89.6	0.2	0.0	0.5	0.1	0.5	0.0	54.2	0.3	0.1	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	2.1	53.4	3.4	2.9	5.4	0.3	2.4	0.0	28.7	1.6	4.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.9	139.3	32.2	31.1	5.0	1.2	81.4	0.0	119.7	80.7	51.7	40.8
LnGrp LOS	F	F	C	C	A	A	F	A	F	F	D	D
Approach Vol, veh/h		2125			1662			598			254	
Approach Delay, s/veh		129.3			8.2			113.0			58.1	
Approach LOS		F			A			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	88.6	17.6	55.8	17.6	158.6	17.4	56.0
Change Period (Y+Rc), s	8.0	* 8	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0
Max Green Setting (Gmax), s	12.6	* 81	* 12	49.0	* 12	80.6	* 12	49.0
Max Q Clear Time (g_c+I1), s	9.0	82.6	7.3	12.3	6.7	21.6	5.7	51.0
Green Ext Time (p_c), s	0.1	0.0	0.1	0.5	0.0	39.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	79.9
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	780	1520	120	560	1110	800	100	1130	490	630	1060	470
Future Volume (veh/h)	780	1520	120	560	1110	800	100	1130	490	630	1060	470
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		0.97	1.00		0.97	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	821	1600	100	589	1168	621	105	1189	384	663	1116	306
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2411	4153	1370	425	1154	523	227	1007	317	387	1541	1777
Arrive On Green	0.70	0.82	0.82	0.12	0.23	0.23	0.07	0.38	0.38	0.11	0.44	0.44
Sat Flow, veh/h	3428	5066	1544	3428	5066	1518	3428	2619	825	3428	3526	1535
Grp Volume(v), veh/h	821	1600	100	589	1168	621	105	791	782	663	1116	306
Grp Sat Flow(s),veh/h/ln	1714	1689	1544	1714	1689	1518	1714	1763	1682	1714	1763	1535
Q Serve(g_s), s	16.8	15.0	1.4	22.3	41.0	41.0	5.3	69.2	69.2	20.3	46.9	3.5
Cycle Q Clear(g_c), s	16.8	15.0	1.4	22.3	41.0	41.0	5.3	69.2	69.2	20.3	46.9	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	2411	4153	1370	425	1154	523	227	678	646	387	1541	1777
V/C Ratio(X)	0.34	0.39	0.07	1.39	1.01	1.19	0.46	1.17	1.21	1.71	0.72	0.17
Avail Cap(c_a), veh/h	2411	4153	1370	425	1154	523	360	678	646	387	1541	1777
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.4	4.3	1.2	78.9	69.5	59.1	80.9	55.4	55.4	79.8	41.7	7.2
Incr Delay (d2), s/veh	0.1	0.3	0.1	188.1	29.6	102.1	1.5	90.5	108.5	332.5	3.0	0.2
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	5.9	4.0	0.2	20.7	20.4	29.1	2.4	46.7	47.8	26.7	20.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	4.5	1.4	267.0	99.1	161.2	82.4	145.9	163.9	412.3	44.7	7.4
LnGrp LOS	B	A	A	F	F	F	F	F	F	F	D	A
Approach Vol, veh/h		2521			2378			1678			2085	
Approach Delay, s/veh		6.4			156.9			150.3			156.1	
Approach LOS		A			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	156.7	17.6	85.5	135.7	49.0	27.1	76.0
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	8.0	* 8	6.8	* 6.8
Max Green Setting (Gmax), s	* 22	42.0	* 19	70.6	23.3	* 41	20.3	* 69
Max Q Clear Time (g_c+I1), s	24.3	17.0	7.3	48.9	18.8	43.0	22.3	71.2
Green Ext Time (p_c), s	0.0	21.8	0.2	17.8	1.9	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	111.6
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	2030	690	510	1580	80	680	90	870	40	40	40
Future Volume (veh/h)	190	2030	690	510	1580	80	680	90	870	40	40	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.91
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	200	2137	515	537	1663	73	784	0	569	42	42	38
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	204	1430	970	625	1657	72	805	0	633	118	57	52
Arrive On Green	0.12	0.41	0.41	0.12	0.32	0.32	0.23	0.00	0.23	0.07	0.07	0.07
Sat Flow, veh/h	1767	3526	1508	3428	3434	150	3534	0	1518	1767	855	774
Grp Volume(v), veh/h	200	2137	515	537	849	887	784	0	569	42	0	80
Grp Sat Flow(s),veh/h/ln	1767	1763	1508	1714	1763	1822	1767	0	1518	1767	0	1629
Q Serve(g_s), s	20.3	73.0	34.2	27.7	86.6	86.8	39.6	0.0	28.9	4.1	0.0	8.7
Cycle Q Clear(g_c), s	20.3	73.0	34.2	27.7	86.6	86.8	39.6	0.0	28.9	4.1	0.0	8.7
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	204	1430	970	625	850	879	805	0	633	118	0	108
V/C Ratio(X)	0.98	1.49	0.53	0.86	1.00	1.01	0.97	0.00	0.90	0.36	0.00	0.74
Avail Cap(c_a), veh/h	204	1430	970	659	850	879	805	0	633	118	0	109
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	79.4	53.5	18.4	76.7	60.8	60.9	69.0	0.0	49.3	80.3	0.0	82.5
Incr Delay (d2), s/veh	56.7	226.3	2.1	8.5	26.7	29.0	25.2	0.0	15.5	0.7	0.0	20.5
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	12.3	75.8	20.7	13.1	45.4	47.5	20.4	0.0	11.5	1.9	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	136.1	279.8	20.5	85.2	87.5	90.0	94.2	0.0	64.8	81.0	0.0	103.0
LnGrp LOS	F	F	C	F	F	F	F	A	E	F	A	F
Approach Vol, veh/h		2852			2273			1353			122	
Approach Delay, s/veh		222.9			87.9			81.8			95.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	38.8	79.0		16.6	25.0	92.8		45.6
Change Period (Y+Rc), s	6.0	* 6		4.6	* 4.2	6.0		4.6
Max Green Setting (Gmax), s	34.6	* 73		12.0	* 21	86.8		41.0
Max Q Clear Time (g_c+I1), s	29.7	75.0		10.7	22.3	88.8		41.6
Green Ext Time (p_c), s	0.9	0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	145.1
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	1860	450	80	1230	100	290	90	130	140	370	330
Future Volume (veh/h)	400	1860	450	80	1230	100	290	90	130	140	370	330
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		0.97	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	421	1958	285	84	1295	86	305	95	95	147	389	294
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	877	2718	982	244	1731	636	342	751	435	247	640	676
Arrive On Green	0.26	0.54	0.54	0.07	0.34	0.34	0.10	0.21	0.21	0.07	0.18	0.18
Sat Flow, veh/h	3428	5066	1539	3428	5066	1530	3428	3526	1516	3428	3526	1509
Grp Volume(v), veh/h	421	1958	285	84	1295	86	305	95	95	147	389	294
Grp Sat Flow(s),veh/h/ln	1714	1689	1539	1714	1689	1530	1714	1763	1516	1714	1763	1509
Q Serve(g_s), s	18.7	52.6	3.9	4.2	40.7	2.6	15.8	3.9	8.6	7.5	18.3	0.0
Cycle Q Clear(g_c), s	18.7	52.6	3.9	4.2	40.7	2.6	15.8	3.9	8.6	7.5	18.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	877	2718	982	244	1731	636	342	751	435	247	640	676
V/C Ratio(X)	0.48	0.72	0.29	0.34	0.75	0.14	0.89	0.13	0.22	0.59	0.61	0.43
Avail Cap(c_a), veh/h	877	2718	982	248	1731	636	377	1060	567	261	940	805
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	31.5	5.8	79.6	52.4	13.5	80.1	57.3	49.2	80.9	67.8	35.0
Incr Delay (d2), s/veh	0.2	1.7	0.7	0.3	3.0	0.4	20.0	0.0	0.1	2.1	0.3	0.2
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	8.0	20.8	2.7	1.8	17.2	1.1	7.9	1.8	3.3	3.4	8.3	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	33.2	6.5	79.9	55.4	13.9	100.0	57.3	49.3	83.0	68.1	35.2
LnGrp LOS	E	C	A	E	E	B	F	E	D	F	E	D
Approach Vol, veh/h		2664			1465			495			830	
Approach Delay, s/veh		34.1			54.4			82.1			59.1	
Approach LOS		C			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	102.6	22.9	37.6	52.1	67.5	17.2	43.2
Change Period (Y+Rc), s	* 4.2	6.0	4.9	* 4.9	6.0	* 6	* 4.2	4.9
Max Green Setting (Gmax), s	* 13	79.9	19.8	* 48	31.4	* 62	* 14	54.1
Max Q Clear Time (g_c+I1), s	10.2	54.6	17.8	20.3	20.7	42.7	9.5	10.6
Green Ext Time (p_c), s	0.1	23.9	0.1	2.2	0.6	14.7	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	0	140	170	270	90	100	600	0	0	610	130
Future Volume (veh/h)	130	0	140	170	270	90	100	600	0	0	610	130
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		0.93	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	133	0	102	173	276	66	102	612	0	0	622	102
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	123	0	225	279	441	103	130	1001	0	0	639	105
Arrive On Green	0.07	0.00	0.07	0.16	0.16	0.16	0.07	0.54	0.00	0.00	0.41	0.41
Sat Flow, veh/h	1767	0	1572	1767	2790	650	1767	1856	0	0	1548	254
Grp Volume(v), veh/h	133	0	102	173	172	170	102	612	0	0	0	724
Grp Sat Flow(s),veh/h/ln	1767	0	1572	1767	1763	1677	1767	1856	0	0	0	1802
Q Serve(g_s), s	6.0	0.0	5.1	7.9	7.8	8.2	4.9	19.5	0.0	0.0	0.0	33.9
Cycle Q Clear(g_c), s	6.0	0.0	5.1	7.9	7.8	8.2	4.9	19.5	0.0	0.0	0.0	33.9
Prop In Lane	1.00		1.00	1.00		0.39	1.00		0.00	0.00		0.14
Lane Grp Cap(c), veh/h	123	0	225	279	279	265	130	1001	0	0	0	744
V/C Ratio(X)	1.08	0.00	0.45	0.62	0.62	0.64	0.79	0.61	0.00	0.00	0.00	0.97
Avail Cap(c_a), veh/h	123	0	225	473	471	449	173	1001	0	0	0	744
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	1.00	1.00	1.00	1.00	0.36	0.36	0.00	0.00	0.00	0.36
Uniform Delay (d), s/veh	40.0	0.0	33.8	33.8	33.8	33.9	39.2	13.6	0.0	0.0	0.0	24.8
Incr Delay (d2), s/veh	103.7	0.0	1.4	2.2	2.2	2.6	6.2	1.0	0.0	0.0	0.0	14.4
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	6.1	0.0	2.0	3.5	3.5	3.5	2.3	7.5	0.0	0.0	0.0	16.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	143.7	0.0	35.2	36.0	36.0	36.5	45.4	14.6	0.0	0.0	0.0	39.2
LnGrp LOS	F	A	D	D	D	D	D	B	A	A	A	D
Approach Vol, veh/h		235			515			714			724	
Approach Delay, s/veh		96.6			36.2			19.0			39.2	
Approach LOS		F			D			B			D	

Timer - Assigned Phs	2		4	5	6		8
Phs Duration (G+Y+Rc), s	51.4		11.0	10.9	40.5		23.6
Change Period (Y+Rc), s	5.0		5.0	4.6	5.0		10.0
Max Green Setting (Gmax), s	37.0		6.0	8.4	24.0		23.0
Max Q Clear Time (g_c+I1), s	21.5		8.0	6.9	35.9		10.2
Green Ext Time (p_c), s	4.9		0.0	0.0	0.0		2.2

Intersection Summary		
HCM 6th Ctrl Delay	38.1	
HCM 6th LOS	D	

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	180	30	170	590	260	70	120	360	500	120	90
Future Volume (veh/h)	40	180	30	170	590	260	70	120	360	500	120	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.96	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	189	32	179	621	174	74	126	253	371	343	90
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	74	824	136	207	1234	966	113	192	437	494	393	103
Arrive On Green	0.04	0.27	0.27	0.12	0.35	0.35	0.17	0.17	0.17	0.28	0.28	0.28
Sat Flow, veh/h	1767	3001	496	1767	3526	1503	674	1148	1506	1767	1406	369
Grp Volume(v), veh/h	42	109	112	179	621	174	200	0	253	371	0	433
Grp Sat Flow(s),veh/h/ln	1767	1763	1735	1767	1763	1503	1822	0	1506	1767	0	1776
Q Serve(g_s), s	2.8	5.7	6.0	11.9	16.7	5.8	12.3	0.0	17.3	23.0	0.0	27.9
Cycle Q Clear(g_c), s	2.8	5.7	6.0	11.9	16.7	5.8	12.3	0.0	17.3	23.0	0.0	27.9
Prop In Lane	1.00		0.29	1.00		1.00	0.37		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	74	484	476	207	1234	966	305	0	437	494	0	497
V/C Ratio(X)	0.57	0.23	0.23	0.86	0.50	0.18	0.65	0.00	0.58	0.75	0.00	0.87
Avail Cap(c_a), veh/h	106	484	476	284	1234	966	325	0	453	565	0	568
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	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.4	33.7	33.8	52.0	30.8	9.3	46.7	0.0	36.9	39.4	0.0	41.2
Incr Delay (d2), s/veh	5.1	1.1	1.2	14.4	1.2	0.3	5.1	0.0	2.2	5.5	0.0	13.4
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	1.4	2.7	2.7	6.2	7.4	3.8	6.1	0.0	6.7	10.8	0.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	34.7	34.9	66.4	32.0	9.6	51.8	0.0	39.1	44.9	0.0	54.6
LnGrp LOS	E	C	C	E	C	A	D	A	D	D	A	D
Approach Vol, veh/h		263			974			453			804	
Approach Delay, s/veh		39.1			34.3			44.7			50.1	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.8	38.3		38.2	9.7	47.4		24.7
Change Period (Y+Rc), s	* 4.7	5.4		4.6	* 4.7	5.4		4.6
Max Green Setting (Gmax), s	* 13	21.6		38.4	* 7.2	33.7		21.4
Max Q Clear Time (g_c+I1), s	13.9	8.0		29.9	4.8	18.7		19.3
Green Ext Time (p_c), s	0.2	2.2		3.7	0.0	6.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1120	40	250	1050	490	40	0	90	350	50	150
Future Volume (veh/h)	0	1120	40	250	1050	490	40	0	90	350	50	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		1.00	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	0	1856	1856	1856	1856	1856	1856	0	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1179	39	263	1105	0	42	0	69	406	0	105
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, %	0	3	3	3	3	3	3	0	3	3	3	3
Cap, veh/h	0	1347	45	313	2299		0	0	0	568	0	242
Arrive On Green	0.00	0.39	0.39	0.18	0.65	0.00	0.00	0.00	0.00	0.16	0.00	0.16
Sat Flow, veh/h	0	3569	115	1767	3526	1572		0		3534	0	1504
Grp Volume(v), veh/h	0	598	620	263	1105	0		0.0		406	0	105
Grp Sat Flow(s),veh/h/ln	0	1763	1829	1767	1763	1572				1767	0	1504
Q Serve(g_s), s	0.0	20.5	20.5	9.4	10.4	0.0				7.1	0.0	4.1
Cycle Q Clear(g_c), s	0.0	20.5	20.5	9.4	10.4	0.0				7.1	0.0	4.1
Prop In Lane	0.00		0.06	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	683	709	313	2299					568	0	242
V/C Ratio(X)	0.00	0.87	0.88	0.84	0.48					0.71	0.00	0.43
Avail Cap(c_a), veh/h	0	890	923	409	2904					1139	0	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.5	18.5	25.9	5.7	0.0				25.9	0.0	24.7
Incr Delay (d2), s/veh	0.0	6.5	6.4	11.4	0.1	0.0				0.6	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	8.9	9.2	4.6	2.6	0.0				2.9	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.0	24.9	37.4	5.8	0.0				26.6	0.0	25.1
LnGrp LOS	A	C	C	D	A					C	A	C
Approach Vol, veh/h		1218			1368						511	
Approach Delay, s/veh		24.9			11.9						26.3	
Approach LOS		C			B						C	

Timer - Assigned Phs	1	2		4		6			
Phs Duration (G+Y+Rc), s	17.3	31.4		16.6		48.6			
Change Period (Y+Rc), s*	5.7	6.1		6.1		6.1			
Max Green Setting (Gmax), s	11.5	32.9		21.0		53.7			
Max Q Clear Time (g_c+I1), s	11.4	22.5		9.1		12.4			
Green Ext Time (p_c), s	0.3	2.8		0.4		3.2			

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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	66.1

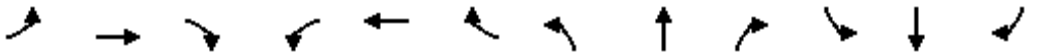
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	160	840	0	0	980	200	0	0	820	0	0	0
Future Vol, veh/h	160	840	0	0	980	200	0	0	820	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	Free
Storage Length	130	-	-	-	-	-	-	-	0	-	-	0
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	163	857	0	0	1000	204	0	0	837	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1204	0	-	-	-	0	-	-	429
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	570	-	0	0	-	-	0	0	~ 571
Stage 1	-	-	0	0	-	-	0	0	-
Stage 2	-	-	0	0	-	-	0	0	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	570	-	-	-	-	-	-	0	~ 571
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	239
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	571	570	-	-	-
HCM Lane V/C Ratio	1.465	0.286	-	-	-
HCM Control Delay (s)	239	13.8	-	-	-
HCM Lane LOS	F	B	-	-	-
HCM 95th %tile Q(veh)	40.9	1.2	-	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	920	340	260	590	120	260	190	170	210	180	60
Future Volume (veh/h)	120	920	340	260	590	120	260	190	170	210	180	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	125	958	265	271	615	83	271	198	151	219	188	62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	150	1290	748	295	1578	676	431	217	165	269	228	75
Arrive On Green	0.09	0.37	0.37	0.17	0.45	0.45	0.13	0.23	0.23	0.08	0.17	0.17
Sat Flow, veh/h	1767	3526	1504	1767	3526	1511	3428	960	732	3428	1320	435
Grp Volume(v), veh/h	125	958	265	271	615	83	271	0	349	219	0	250
Grp Sat Flow(s),veh/h/ln	1767	1763	1504	1767	1763	1511	1714	0	1693	1714	0	1755
Q Serve(g_s), s	9.1	31.0	5.8	19.8	15.3	4.2	9.8	0.0	26.4	8.2	0.0	18.0
Cycle Q Clear(g_c), s	9.1	31.0	5.8	19.8	15.3	4.2	9.8	0.0	26.4	8.2	0.0	18.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		0.25
Lane Grp Cap(c), veh/h	150	1290	748	295	1578	676	431	0	382	269	0	303
V/C Ratio(X)	0.83	0.74	0.35	0.92	0.39	0.12	0.63	0.00	0.91	0.81	0.00	0.82
Avail Cap(c_a), veh/h	235	1290	748	309	1578	676	431	0	432	285	0	415
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.0	36.2	7.1	53.7	24.2	21.1	54.3	0.0	49.5	59.4	0.0	52.3
Incr Delay (d2), s/veh	13.4	3.9	1.3	30.4	0.7	0.4	2.9	0.0	22.3	15.7	0.0	9.4
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	4.6	13.8	2.4	11.1	6.4	1.5	4.4	0.0	13.3	4.1	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	40.1	8.4	84.1	24.9	21.5	57.2	0.0	71.8	75.1	0.0	61.6
LnGrp LOS	E	D	A	F	C	C	E	A	E	E	A	E
Approach Vol, veh/h		1348			969			620			469	
Approach Delay, s/veh		36.8			41.2			65.4			67.9	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	53.7	21.9	28.4	16.2	64.4	15.4	34.9
Change Period (Y+Rc), s	5.1	5.8	5.4	5.8	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	22.9	42.4	12.6	31.0	17.4	47.9	10.9	33.4
Max Q Clear Time (g_c+I1), s	21.8	33.0	11.8	20.0	11.1	17.3	10.2	28.4
Green Ext Time (p_c), s	0.1	7.0	0.1	0.9	0.1	8.9	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	47.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1390	200	170	810	210	70	140	60	130	210	130
Future Volume (veh/h)	230	1390	200	170	810	210	70	140	60	130	210	130
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		0.97	1.00		0.94	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	242	1463	192	179	853	210	74	147	52	137	221	95
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	524	1749	227	146	1196	584	131	285	96	143	407	1140
Arrive On Green	0.30	0.56	0.56	0.08	0.34	0.34	0.04	0.11	0.11	0.04	0.12	0.12
Sat Flow, veh/h	1767	3129	406	1767	3526	1530	3428	2548	855	3428	3526	2768
Grp Volume(v), veh/h	242	816	839	179	853	210	74	99	100	137	221	95
Grp Sat Flow(s),veh/h/ln	1767	1763	1772	1767	1763	1530	1714	1763	1640	1714	1763	1384
Q Serve(g_s), s	13.4	45.6	47.6	9.9	25.3	4.7	2.5	6.4	6.9	4.8	7.1	0.4
Cycle Q Clear(g_c), s	13.4	45.6	47.6	9.9	25.3	4.7	2.5	6.4	6.9	4.8	7.1	0.4
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	524	985	990	146	1196	584	131	197	184	143	407	1140
V/C Ratio(X)	0.46	0.83	0.85	1.23	0.71	0.36	0.57	0.50	0.54	0.96	0.54	0.08
Avail Cap(c_a), veh/h	524	985	990	146	1196	584	160	470	437	143	923	1544
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	0.73	0.73	0.73	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	34.4	21.7	22.2	55.0	34.6	12.3	56.7	50.1	50.4	57.4	50.1	10.2
Incr Delay (d2), s/veh	0.6	8.0	8.9	138.5	2.7	1.3	3.8	2.0	2.5	59.1	1.0	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	5.7	19.1	20.2	9.9	10.8	2.4	1.2	2.9	3.0	3.2	3.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	29.7	31.1	193.5	37.2	13.6	60.5	52.1	52.9	116.5	51.1	10.2
LnGrp LOS	D	C	C	F	D	B	E	D	D	F	D	B
Approach Vol, veh/h		1897			1242			273			453	
Approach Delay, s/veh		31.0			55.8			54.7			62.3	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	73.9	10.2	20.0	42.4	47.5	10.6	19.5
Change Period (Y+Rc), s	6.1	6.8	5.6	6.1	6.8	* 6.8	5.6	6.1
Max Green Setting (Gmax), s	9.9	48.5	5.6	31.4	17.7	* 41	5.0	32.0
Max Q Clear Time (g_c+I1), s	11.9	49.6	4.5	9.1	15.4	27.3	6.8	8.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.2	10.4	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	44.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	300	50	140	170	80	90	1000	290	110	720	150
Future Volume (veh/h)	150	300	50	140	170	80	90	1000	290	110	720	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	156	312	45	146	177	62	94	1042	240	115	750	120
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	181	330	48	170	264	92	440	1674	384	136	1228	196
Arrive On Green	0.10	0.21	0.21	0.10	0.20	0.20	0.25	0.59	0.59	0.08	0.41	0.41
Sat Flow, veh/h	1767	1577	227	1767	1298	455	1767	2827	648	1767	3023	484
Grp Volume(v), veh/h	156	0	357	146	0	239	94	648	634	115	437	433
Grp Sat Flow(s),veh/h/ln	1767	0	1804	1767	0	1753	1767	1763	1712	1767	1763	1744
Q Serve(g_s), s	11.3	0.0	25.4	10.6	0.0	16.4	5.5	30.8	31.2	8.4	25.5	25.5
Cycle Q Clear(g_c), s	11.3	0.0	25.4	10.6	0.0	16.4	5.5	30.8	31.2	8.4	25.5	25.5
Prop In Lane	1.00		0.13	1.00		0.26	1.00		0.38	1.00		0.28
Lane Grp Cap(c), veh/h	181	0	378	170	0	356	440	1044	1014	136	716	708
V/C Ratio(X)	0.86	0.00	0.95	0.86	0.00	0.67	0.21	0.62	0.63	0.85	0.61	0.61
Avail Cap(c_a), veh/h	203	0	378	175	0	356	440	1044	1014	136	716	708
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	0.0	50.7	57.9	0.0	47.8	38.7	17.1	17.2	59.2	30.5	30.5
Incr Delay (d2), s/veh	27.6	0.0	32.8	31.5	0.0	9.7	0.2	2.8	2.9	36.2	3.9	3.9
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	6.3	0.0	14.5	6.1	0.0	7.9	2.3	12.0	11.8	5.0	11.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.0	0.0	83.4	89.3	0.0	57.5	38.9	19.9	20.1	95.5	34.3	34.4
LnGrp LOS	F	A	F	F	A	E	D	B	C	F	C	C
Approach Vol, veh/h		513			385			1376			985	
Approach Delay, s/veh		83.9			69.5			21.3			41.5	
Approach LOS		F			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	84.8	17.6	34.0	40.2	60.0	18.4	33.2
Change Period (Y+Rc), s	5.4	7.2	5.1	* 6.8	7.2	* 7.2	5.1	6.8
Max Green Setting (Gmax), s	10.0	56.4	12.9	* 27	13.6	* 53	14.9	24.2
Max Q Clear Time (g_c+I1), s	10.4	33.2	12.6	27.4	7.5	27.5	13.3	18.4
Green Ext Time (p_c), s	0.0	12.0	0.0	0.0	0.1	7.6	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	280	220	230	920	760	160
Future Volume (veh/h)	280	220	230	920	760	160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	289	160	237	948	784	134
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	349	742	485	967	1054	758
Arrive On Green	0.20	0.20	0.27	0.27	0.30	0.30
Sat Flow, veh/h	1767	1572	1767	3618	3618	1496
Grp Volume(v), veh/h	289	160	237	948	784	134
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1496
Q Serve(g_s), s	12.5	4.8	8.9	21.2	15.9	3.9
Cycle Q Clear(g_c), s	12.5	4.8	8.9	21.2	15.9	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	349	742	485	967	1054	758
V/C Ratio(X)	0.83	0.22	0.49	0.98	0.74	0.18
Avail Cap(c_a), veh/h	690	1045	485	967	1287	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	12.3	24.2	28.6	25.1	11.1
Incr Delay (d2), s/veh	5.0	0.1	1.1	24.1	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	2.5	3.5	11.2	6.2	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.6	12.5	25.2	52.7	27.3	11.2
LnGrp LOS	D	B	C	D	C	B
Approach Vol, veh/h	449			1185	918	
Approach Delay, s/veh	27.4			47.2	25.0	
Approach LOS	C			D	C	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	28.0		21.5		30.0
Change Period (Y+Rc), s	6.2		5.8		6.2
Max Green Setting (Gmax), s	21.8		31.0		29.0
Max Q Clear Time (g_c+I1), s	23.2		14.5		17.9
Green Ext Time (p_c), s	0.0		1.2		5.2

Intersection Summary	
HCM 6th Ctrl Delay	35.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	230	140	200	230	270	150	510	180	220	450	60
Future Volume (veh/h)	60	230	140	200	230	270	150	510	180	220	450	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.92	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	63	242	115	211	242	184	158	537	147	232	474	57
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	64	247	248	261	274	429	184	549	150	241	689	83
Arrive On Green	0.17	0.17	0.17	0.15	0.15	0.15	0.10	0.39	0.39	0.14	0.43	0.43
Sat Flow, veh/h	379	1457	1462	1767	1856	1451	1767	1394	382	1767	1617	194
Grp Volume(v), veh/h	305	0	115	211	242	184	158	0	684	232	0	531
Grp Sat Flow(s),veh/h/ln	1837	0	1462	1767	1856	1451	1767	0	1775	1767	0	1811
Q Serve(g_s), s	20.5	0.0	8.8	14.3	15.8	12.9	10.9	0.0	47.1	16.2	0.0	29.5
Cycle Q Clear(g_c), s	20.5	0.0	8.8	14.3	15.8	12.9	10.9	0.0	47.1	16.2	0.0	29.5
Prop In Lane	0.21		1.00	1.00		1.00	1.00		0.21	1.00		0.11
Lane Grp Cap(c), veh/h	311	0	248	261	274	429	184	0	699	241	0	771
V/C Ratio(X)	0.98	0.00	0.46	0.81	0.88	0.43	0.86	0.00	0.98	0.96	0.00	0.69
Avail Cap(c_a), veh/h	311	0	248	277	291	442	215	0	699	241	0	771
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	46.4	51.1	51.8	36.4	54.6	0.0	37.0	53.2	0.0	28.9
Incr Delay (d2), s/veh	45.2	0.0	0.5	14.1	23.7	0.3	24.7	0.0	28.7	47.4	0.0	3.3
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	18.1	0.0	3.2	7.2	9.0	4.5	6.1	0.0	25.3	10.3	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.5	0.0	46.9	65.2	75.4	36.6	79.3	0.0	65.7	100.6	0.0	32.2
LnGrp LOS	F	A	D	E	E	D	E	A	E	F	A	C
Approach Vol, veh/h		420			637			842			763	
Approach Delay, s/veh		82.9			60.8			68.3			53.0	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.5	53.9		25.6	17.5	57.9		22.9
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6
Max Green Setting (Gmax), s	16.9	48.8		21.0	15.1	50.6		19.4
Max Q Clear Time (g_c+I1), s	19.2	49.1		22.5	12.9	31.5		17.8
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	5.9		0.3

Intersection Summary		
HCM 6th Ctrl Delay	64.4	
HCM 6th LOS	E	

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	670	100	180	990	490	50	40	70	450	50	130
Future Volume (veh/h)	300	670	100	180	990	490	50	40	70	450	50	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		1.00	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	316	705	98	189	1042	337	53	42	58	316	274	105
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	340	1354	188	212	1288	910	62	49	97	405	290	111
Arrive On Green	0.19	0.44	0.44	0.24	0.73	0.73	0.06	0.06	0.06	0.23	0.23	0.23
Sat Flow, veh/h	1767	3091	429	1767	3526	1504	1007	798	1572	1767	1264	484
Grp Volume(v), veh/h	316	402	401	189	1042	337	95	0	58	316	0	379
Grp Sat Flow(s),veh/h/ln	1767	1763	1757	1767	1763	1504	1805	0	1572	1767	0	1748
Q Serve(g_s), s	22.9	21.6	21.6	13.4	25.3	9.1	6.8	0.0	4.7	21.8	0.0	27.7
Cycle Q Clear(g_c), s	22.9	21.6	21.6	13.4	25.3	9.1	6.8	0.0	4.7	21.8	0.0	27.7
Prop In Lane	1.00		0.24	1.00		1.00	0.56		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	340	772	770	212	1288	910	111	0	97	405	0	401
V/C Ratio(X)	0.93	0.52	0.52	0.89	0.81	0.37	0.86	0.00	0.60	0.78	0.00	0.95
Avail Cap(c_a), veh/h	385	772	770	319	1288	910	111	0	97	406	0	402
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.53	0.53	0.53	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.6	26.6	26.6	48.6	14.5	5.3	60.4	0.0	59.4	47.0	0.0	49.3
Incr Delay (d2), s/veh	25.7	2.5	2.5	8.0	3.0	0.6	42.5	0.0	7.0	8.6	0.0	31.0
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	12.4	9.4	9.3	5.6	5.5	3.3	4.4	0.0	2.1	10.7	0.0	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	29.1	29.1	56.6	17.6	5.9	102.9	0.0	66.5	55.6	0.0	80.3
LnGrp LOS	E	C	C	E	B	A	F	A	E	E	A	F
Approach Vol, veh/h		1119			1568			153			695	
Approach Delay, s/veh		42.7			19.8			89.1			69.1	
Approach LOS		D			B			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.7	52.3		13.1	20.3	61.7		34.9
Change Period (Y+Rc), s	* 4.7	* 4.8		5.1	* 4.7	* 4.8		5.1
Max Green Setting (Gmax), s	* 28	* 44		8.0	* 24	* 49		29.9
Max Q Clear Time (g_c+I1), s	24.9	27.3		8.8	15.4	23.6		29.7
Green Ext Time (p_c), s	0.2	7.8		0.0	0.2	5.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	860	240	90	760	290	230	150	100	650	370	520
Future Volume (veh/h)	120	860	240	90	760	290	230	150	100	650	370	520
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.95	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	124	887	201	93	784	201	196	212	72	526	583	350
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	240	928	210	115	892	868	260	273	323	542	570	696
Arrive On Green	0.27	0.65	0.65	0.09	0.34	0.34	0.15	0.15	0.15	0.31	0.31	0.31
Sat Flow, veh/h	1767	2838	643	1767	3526	1522	1767	1856	1499	1767	1856	1572
Grp Volume(v), veh/h	124	551	537	93	784	201	196	212	72	526	583	350
Grp Sat Flow(s),veh/h/ln	1767	1763	1718	1767	1763	1522	1767	1856	1499	1767	1856	1572
Q Serve(g_s), s	7.7	37.5	37.6	6.7	27.2	8.1	13.8	14.3	5.2	38.2	39.9	3.1
Cycle Q Clear(g_c), s	7.7	37.5	37.6	6.7	27.2	8.1	13.8	14.3	5.2	38.2	39.9	3.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	576	562	115	892	868	260	273	323	542	570	696
V/C Ratio(X)	0.52	0.96	0.96	0.81	0.88	0.23	0.75	0.78	0.22	0.97	1.02	0.50
Avail Cap(c_a), veh/h	240	576	562	181	892	868	393	413	436	542	570	696
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	21.6	21.7	58.6	41.2	12.8	53.2	53.4	42.4	44.5	45.0	26.0
Incr Delay (d2), s/veh	0.6	22.7	23.2	5.6	10.3	0.5	1.7	2.4	0.1	30.8	43.9	0.2
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	3.1	12.2	12.0	3.1	12.3	5.0	6.3	6.9	2.0	21.4	25.3	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	44.3	44.9	64.2	51.6	13.3	54.8	55.7	42.5	75.3	88.9	26.2
LnGrp LOS	D	D	D	E	D	B	D	E	D	E	F	C
Approach Vol, veh/h		1212			1078			480			1459	
Approach Delay, s/veh		44.6			45.5			53.4			68.9	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.7	38.0		24.3	13.2	47.6		45.0
Change Period (Y+Rc), s	5.1	* 5.1		5.1	* 4.7	5.1		5.1
Max Green Setting (Gmax), s	8.3	* 33		28.9	* 13	27.9		39.9
Max Q Clear Time (g_c+I1), s	9.7	29.2		16.3	8.7	39.6		41.9
Green Ext Time (p_c), s	0.0	1.5		1.1	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay	54.2	
HCM 6th LOS	D	

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1130	240	120	730	50	140	210	150	130	190	140
Future Volume (veh/h)	190	1130	240	120	730	50	140	210	150	130	190	140
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		0.96	1.00		0.95	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	1177	188	125	760	48	146	219	104	135	198	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	342	1474	234	149	1245	79	251	264	213	233	245	197
Arrive On Green	0.26	0.65	0.65	0.08	0.37	0.37	0.14	0.14	0.14	0.13	0.13	0.13
Sat Flow, veh/h	1767	3036	482	1767	3357	212	1767	1856	1497	1767	1856	1493
Grp Volume(v), veh/h	198	681	684	125	399	409	146	219	104	135	198	104
Grp Sat Flow(s),veh/h/ln	1767	1763	1756	1767	1763	1806	1767	1856	1497	1767	1856	1493
Q Serve(g_s), s	12.7	36.6	37.3	9.1	23.9	24.0	10.0	14.9	8.3	9.3	13.5	8.4
Cycle Q Clear(g_c), s	12.7	36.6	37.3	9.1	23.9	24.0	10.0	14.9	8.3	9.3	13.5	8.4
Prop In Lane	1.00		0.27	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	856	852	149	654	670	251	264	213	233	245	197
V/C Ratio(X)	0.58	0.80	0.80	0.84	0.61	0.61	0.58	0.83	0.49	0.58	0.81	0.53
Avail Cap(c_a), veh/h	342	856	852	189	654	670	330	347	280	303	318	256
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	18.3	18.5	58.6	33.3	33.3	52.2	54.2	51.4	53.0	54.8	52.6
Incr Delay (d2), s/veh	0.1	0.7	0.8	18.7	4.2	4.1	1.6	11.2	1.3	1.7	10.2	1.6
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	5.3	12.3	12.5	4.7	10.6	10.9	4.6	7.8	3.2	4.3	7.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	19.1	19.2	77.4	37.5	37.4	53.7	65.4	52.7	54.7	65.0	54.3
LnGrp LOS	D	B	B	E	D	D	D	E	D	D	E	D
Approach Vol, veh/h		1563			933			469			437	
Approach Delay, s/veh		22.3			42.8			59.0			59.3	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.1	68.9		21.9	31.0	54.0		23.2
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.8	* 5.8		4.7
Max Green Setting (Gmax), s	13.3	49.2		* 22	14.9	* 48		24.3
Max Q Clear Time (g_c+I1), s	11.1	39.3		15.5	14.7	26.0		16.9
Green Ext Time (p_c), s	0.0	6.1		0.9	0.0	4.7		1.0

Intersection Summary	
HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	850	320	460	710	140	370	1490	590	160	930	280
Future Volume (veh/h)	330	850	320	460	710	140	370	1490	590	160	930	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	340	876	263	474	732	108	381	1536	0	165	959	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	394	888	383	477	974	421	400	1739		192	996	
Arrive On Green	0.11	0.25	0.25	0.14	0.28	0.28	0.12	0.34	0.00	0.06	0.28	0.00
Sat Flow, veh/h	3428	3526	1522	3428	3526	1524	3428	5066	1572	3428	3526	1572
Grp Volume(v), veh/h	340	876	263	474	732	108	381	1536	0	165	959	0
Grp Sat Flow(s),veh/h/ln	1714	1763	1522	1714	1763	1524	1714	1689	1572	1714	1763	1572
Q Serve(g_s), s	12.2	30.9	19.5	17.3	23.7	6.9	13.8	35.7	0.0	6.0	33.5	0.0
Cycle Q Clear(g_c), s	12.2	30.9	19.5	17.3	23.7	6.9	13.8	35.7	0.0	6.0	33.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	888	383	477	974	421	400	1739		192	996	
V/C Ratio(X)	0.86	0.99	0.69	0.99	0.75	0.26	0.95	0.88		0.86	0.96	
Avail Cap(c_a), veh/h	428	888	383	477	974	421	400	1739		192	996	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.4	46.5	42.3	53.7	41.3	35.2	54.8	38.7	0.0	58.5	44.2	0.0
Incr Delay (d2), s/veh	15.6	26.7	5.6	39.3	3.6	0.5	32.6	6.1	0.0	30.2	20.4	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	6.0	16.4	7.6	9.7	10.2	2.5	7.6	15.1	0.0	3.3	16.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	73.2	47.8	93.1	44.9	35.7	87.5	44.8	0.0	88.7	64.6	0.0
LnGrp LOS	E	E	D	F	D	D	F	D		F	E	
Approach Vol, veh/h		1479			1314			1917			1124	
Approach Delay, s/veh		68.0			61.5			53.3			68.1	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	50.4	23.2	39.0	20.0	42.8	20.2	42.0
Change Period (Y+Rc), s	5.4	7.5	5.8	7.5	5.4	7.5	5.8	7.5
Max Green Setting (Gmax), s	7.0	42.9	17.4	31.5	14.6	35.3	15.6	33.3
Max Q Clear Time (g_c+I1), s	19.5	37.7	19.3	32.9	15.8	35.5	14.2	25.7
Green Ext Time (p_c), s	0.0	4.6	0.0	0.0	0.0	0.0	0.2	3.6

Intersection Summary	
HCM 6th Ctrl Delay	61.7
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	870	280	420	790	210	210	430	390	150	320	160
Future Volume (veh/h)	200	870	280	420	790	210	210	430	390	150	320	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	211	916	258	442	832	168	221	453	369	158	337	110
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	269	1259	353	492	1963	689	272	488	396	207	877	379
Arrive On Green	0.08	0.32	0.32	0.14	0.39	0.39	0.08	0.27	0.27	0.06	0.25	0.25
Sat Flow, veh/h	3428	3904	1095	3428	5066	1533	3428	1820	1477	3428	3526	1521
Grp Volume(v), veh/h	211	792	382	442	832	168	221	439	383	158	337	110
Grp Sat Flow(s),veh/h/ln	1714	1689	1621	1714	1689	1533	1714	1763	1534	1714	1763	1521
Q Serve(g_s), s	7.6	26.1	26.3	16.0	15.1	8.6	8.0	30.5	30.7	5.7	10.0	7.4
Cycle Q Clear(g_c), s	7.6	26.1	26.3	16.0	15.1	8.6	8.0	30.5	30.7	5.7	10.0	7.4
Prop In Lane	1.00		0.68	1.00		1.00	1.00		0.96	1.00		1.00
Lane Grp Cap(c), veh/h	269	1089	523	492	1963	689	272	472	411	207	877	379
V/C Ratio(X)	0.79	0.73	0.73	0.90	0.42	0.24	0.81	0.93	0.93	0.76	0.38	0.29
Avail Cap(c_a), veh/h	387	1318	633	501	2146	744	281	476	414	207	877	379
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.9	37.7	37.8	53.0	28.2	21.5	57.0	44.9	44.9	58.2	39.2	38.3
Incr Delay (d2), s/veh	6.6	2.5	5.1	18.8	0.3	0.4	15.9	25.4	28.7	15.4	0.6	0.9
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	3.4	10.5	10.6	7.9	5.8	3.0	4.0	16.2	14.5	2.8	4.3	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	40.2	42.9	71.8	28.6	21.9	72.9	70.3	73.6	73.6	39.8	39.2
LnGrp LOS	E	D	D	E	C	C	E	E	E	E	D	D
Approach Vol, veh/h		1385			1442			1043			605	
Approach Delay, s/veh		44.5			41.0			72.1			48.5	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.8	48.1	15.4	38.5	15.7	56.3	13.0	40.9
Change Period (Y+Rc), s	5.8	7.5	5.4	7.2	5.8	7.5	5.4	7.2
Max Green Setting (Gmax), s	18.4	49.1	10.3	31.3	14.2	53.3	7.6	34.0
Max Q Clear Time (g_c+I1), s	10.0	28.3	10.0	12.0	9.6	17.1	7.7	32.7
Green Ext Time (p_c), s	0.1	12.3	0.0	4.1	0.3	13.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	50.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	1120	780	370	760	370	560	1380	370	390	920	250
Future Volume (veh/h)	480	1120	780	370	760	370	560	1380	370	390	920	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	495	1155	668	381	784	305	577	1423	305	402	948	206
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	517	1320	691	402	844	364	642	1645	496	1056	2291	694
Arrive On Green	0.15	0.26	0.26	0.12	0.24	0.24	0.19	0.32	0.32	0.31	0.45	0.45
Sat Flow, veh/h	3428	5066	1523	3428	3526	1520	3428	5066	1529	3428	5066	1536
Grp Volume(v), veh/h	495	1155	668	381	784	305	577	1423	305	402	948	206
Grp Sat Flow(s),veh/h/ln	1714	1689	1523	1714	1763	1520	1714	1689	1529	1714	1689	1536
Q Serve(g_s), s	21.5	32.8	39.1	16.6	32.6	21.0	24.7	39.6	25.2	13.8	18.9	12.7
Cycle Q Clear(g_c), s	21.5	32.8	39.1	16.6	32.6	21.0	24.7	39.6	25.2	13.8	18.9	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	517	1320	691	402	844	364	642	1645	496	1056	2291	694
V/C Ratio(X)	0.96	0.87	0.97	0.95	0.93	0.84	0.90	0.87	0.61	0.38	0.41	0.30
Avail Cap(c_a), veh/h	517	1320	691	402	844	364	800	1645	496	1056	2291	694
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.2	53.1	53.3	65.7	55.8	29.2	59.6	47.6	42.7	40.7	27.7	26.0
Incr Delay (d2), s/veh	29.3	8.3	26.9	31.6	16.9	17.2	11.2	6.4	5.6	0.2	0.6	1.1
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	11.2	14.4	5.2	8.8	16.0	9.2	11.5	17.2	10.1	5.8	7.6	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.5	61.4	80.1	97.3	72.7	46.4	70.8	53.9	48.3	40.9	28.2	27.1
LnGrp LOS	F	E	F	F	E	D	E	D	D	D	C	C
Approach Vol, veh/h		2318			1470			2305			1556	
Approach Delay, s/veh		73.4			73.6			57.4			31.4	
Approach LOS		E			E			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.8	46.3	34.1	74.9	28.0	43.1	53.3	55.7
Change Period (Y+Rc), s	7.2	* 7.2	6.0	7.0	5.4	7.2	7.0	* 7
Max Green Setting (Gmax), s	17.6	* 39	35.0	32.7	22.6	34.1	19.0	* 49
Max Q Clear Time (g_c+I1), s	19.6	41.1	26.7	20.9	23.5	34.6	15.8	41.6
Green Ext Time (p_c), s	0.0	0.0	1.4	6.7	0.0	0.0	0.5	5.9

Intersection Summary	
HCM 6th Ctrl Delay	60.1
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	520	230	360	320	120	330	1150	750	140	560	140
Future Volume (veh/h)	210	520	230	360	320	120	330	1150	750	140	560	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	221	547	174	379	337	110	347	1211	647	147	589	105
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	281	793	341	458	720	230	409	1329	787	202	1603	484
Arrive On Green	0.08	0.22	0.22	0.13	0.28	0.28	0.12	0.38	0.38	0.06	0.32	0.32
Sat Flow, veh/h	3428	3526	1518	3428	2604	834	3428	3526	1532	3428	5066	1528
Grp Volume(v), veh/h	221	547	174	379	226	221	347	1211	647	147	589	105
Grp Sat Flow(s),veh/h/ln	1714	1763	1518	1714	1763	1675	1714	1763	1532	1714	1689	1528
Q Serve(g_s), s	7.7	17.3	12.2	13.1	12.9	13.4	12.0	39.6	43.5	5.1	10.9	6.1
Cycle Q Clear(g_c), s	7.7	17.3	12.2	13.1	12.9	13.4	12.0	39.6	43.5	5.1	10.9	6.1
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	793	341	458	487	463	409	1329	787	202	1603	484
V/C Ratio(X)	0.79	0.69	0.51	0.83	0.46	0.48	0.85	0.91	0.82	0.73	0.37	0.22
Avail Cap(c_a), veh/h	412	958	412	892	726	689	502	1329	788	271	1603	484
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	43.2	41.2	51.3	36.5	36.6	52.4	35.9	25.2	56.2	32.1	30.5
Incr Delay (d2), s/veh	6.0	2.7	2.5	3.9	1.5	1.6	11.0	9.8	7.3	6.4	0.2	0.3
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	3.4	7.5	4.6	5.7	5.5	5.5	5.7	17.9	15.9	2.3	4.4	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	45.9	43.7	55.1	38.0	38.3	63.4	45.7	32.5	62.6	32.3	30.8
LnGrp LOS	E	D	D	E	D	D	E	D	C	E	C	C
Approach Vol, veh/h		942			826			2205			841	
Approach Delay, s/veh		49.0			45.9			44.6			37.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	52.8	21.6	34.5	19.9	45.4	15.4	40.8
Change Period (Y+Rc), s	5.4	7.0	5.4	7.2	5.4	7.0	5.4	7.2
Max Green Setting (Gmax), s	7.6	45.8	31.6	33.0	17.8	37.6	14.6	50.0
Max Q Clear Time (g_c+I1), s	7.1	45.5	15.1	19.3	14.0	12.9	9.7	15.4
Green Ext Time (p_c), s	0.1	0.3	1.1	5.7	0.4	5.9	0.3	5.2

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	110	90	230	120	350	140	510	250	300	380	160
Future Volume (veh/h)	90	110	90	230	120	350	140	510	250	300	380	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.94	1.00		0.94	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	93	113	80	237	124	232	144	526	186	309	392	162
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	194	204	156	269	141	633	178	598	210	331	781	317
Arrive On Green	0.11	0.11	0.11	0.23	0.23	0.23	0.10	0.24	0.24	0.19	0.32	0.32
Sat Flow, veh/h	1767	1856	1420	1179	617	1482	1767	2514	884	1767	2408	978
Grp Volume(v), veh/h	93	113	80	361	0	232	144	368	344	309	285	269
Grp Sat Flow(s),veh/h/ln	1767	1856	1420	1797	0	1482	1767	1763	1635	1767	1763	1623
Q Serve(g_s), s	4.1	4.8	4.4	16.0	0.0	8.9	6.6	16.5	16.7	14.2	10.7	11.0
Cycle Q Clear(g_c), s	4.1	4.8	4.4	16.0	0.0	8.9	6.6	16.5	16.7	14.2	10.7	11.0
Prop In Lane	1.00		1.00	0.66		1.00	1.00		0.54	1.00		0.60
Lane Grp Cap(c), veh/h	194	204	156	410	0	633	178	419	389	331	572	526
V/C Ratio(X)	0.48	0.55	0.51	0.88	0.00	0.37	0.81	0.88	0.88	0.93	0.50	0.51
Avail Cap(c_a), veh/h	429	451	345	436	0	654	243	430	399	331	572	526
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	34.7	34.6	30.7	0.0	16.7	36.2	30.2	30.3	33.0	22.4	22.5
Incr Delay (d2), s/veh	1.8	2.3	2.6	17.7	0.0	0.4	9.7	18.4	20.6	32.6	1.0	1.1
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	1.8	2.2	1.6	8.7	0.0	2.9	3.2	8.8	8.5	8.8	4.4	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	37.1	37.2	48.3	0.0	17.0	45.9	48.6	50.9	65.5	23.4	23.7
LnGrp LOS	D	D	D	D	A	B	D	D	D	E	C	C
Approach Vol, veh/h		286			593			856			863	
Approach Delay, s/veh		36.8			36.1			49.1			38.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	24.7		13.6	13.0	31.8		23.9
Change Period (Y+Rc), s	* 4.7	5.1		4.6	* 4.7	5.1		5.1
Max Green Setting (Gmax), s	* 5	20.1		20.0	* 11	24.2		20.0
Max Q Clear Time (g_c+I1), s	10.2	18.7		6.8	8.6	13.0		18.0
Green Ext Time (p_c), s	0.0	0.8		0.9	0.0	3.4		0.7

Intersection Summary		
HCM 6th Ctrl Delay	41.3	
HCM 6th LOS	D	

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	570	110	1700	1030	140	2540
Future Volume (veh/h)	570	110	1700	1030	140	2540
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	576	81	1717	1040	141	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	582	82	1798	1439	172	
Arrive On Green	0.19	0.19	0.52	0.78	0.10	0.00
Sat Flow, veh/h	3197	435	3428	1856	1767	2768
Grp Volume(v), veh/h	326	331	1717	1040	141	0
Grp Sat Flow(s),veh/h/ln	1763	1777	1714	1856	1767	1384
Q Serve(g_s), s	19.1	19.2	49.4	29.6	8.1	0.0
Cycle Q Clear(g_c), s	19.1	19.2	49.4	29.6	8.1	0.0
Prop In Lane		0.25	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	330	333	1798	1439	172	
V/C Ratio(X)	0.99	0.99	0.96	0.72	0.82	
Avail Cap(c_a), veh/h	330	333	2331	1728	690	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.9	42.0	23.5	5.9	45.9	0.0
Incr Delay (d2), s/veh	46.3	47.3	7.9	0.9	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	12.7	20.6	8.8	3.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	88.3	89.3	31.4	6.8	49.6	0.0
LnGrp LOS	F	F	C	A	D	
Approach Vol, veh/h	657			2757	141	
Approach Delay, s/veh	88.8			22.1	49.6	
Approach LOS	F			C	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	60.9	26.0				86.9	16.6
Change Period (Y+Rc), s	6.6	6.6				6.6	6.6
Max Green Setting (Gmax), s	70.4	19.4				96.4	40.4
Max Q Clear Time (g_c+I1), s	51.4	21.2				31.6	10.1
Green Ext Time (p_c), s	2.9	0.0				5.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	290	390	380	290	200	460	1950	450	270	1470	250
Future Volume (veh/h)	200	290	390	380	290	200	460	1950	450	270	1470	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	206	299	253	392	299	144	474	2010	361	278	1515	222
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	209	540	470	382	336	157	524	2071	362	283	1799	263
Arrive On Green	0.12	0.15	0.15	0.11	0.15	0.15	0.05	0.16	0.16	0.08	0.40	0.40
Sat Flow, veh/h	1767	3526	1501	3428	2294	1070	3428	4320	756	3428	4446	650
Grp Volume(v), veh/h	206	299	253	392	228	215	474	1560	811	278	1150	587
Grp Sat Flow(s),veh/h/ln	1767	1763	1501	1714	1763	1601	1714	1689	1699	1714	1689	1719
Q Serve(g_s), s	17.5	11.8	4.7	16.7	19.0	19.9	20.6	68.8	71.6	12.1	46.1	46.3
Cycle Q Clear(g_c), s	17.5	11.8	4.7	16.7	19.0	19.9	20.6	68.8	71.6	12.1	46.1	46.3
Prop In Lane	1.00		1.00	1.00		0.67	1.00		0.44	1.00		0.38
Lane Grp Cap(c), veh/h	209	540	470	382	258	235	524	1619	815	283	1367	696
V/C Ratio(X)	0.99	0.55	0.54	1.03	0.88	0.92	0.90	0.96	1.00	0.98	0.84	0.84
Avail Cap(c_a), veh/h	209	545	473	382	261	237	530	1619	815	283	1367	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	58.8	20.2	66.7	62.7	63.1	70.1	61.8	63.0	68.7	40.3	40.4
Incr Delay (d2), s/veh	58.7	0.7	0.6	53.2	26.4	36.2	13.7	11.7	25.3	47.9	6.4	11.9
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	11.2	5.3	4.7	10.0	10.3	10.3	10.5	33.8	38.4	7.1	19.7	21.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	124.7	59.5	20.9	119.8	89.2	99.4	83.9	73.6	88.3	116.6	46.7	52.3
LnGrp LOS	F	E	C	F	F	F	F	E	F	F	D	D
Approach Vol, veh/h		758			835			2845			2015	
Approach Delay, s/veh		64.3			106.2			79.5			58.0	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	78.7	23.0	29.8	29.7	67.5	24.0	28.8
Change Period (Y+Rc), s	6.1	6.8	6.3	6.8	6.8	* 6.8	6.3	6.8
Max Green Setting (Gmax), s	12.4	71.7	16.7	23.2	23.2	* 61	17.7	22.2
Max Q Clear Time (g_c+I1), s	14.1	73.6	18.7	13.8	22.6	48.3	19.5	21.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	0.1	11.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	74.4
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	210	510	510	420	450	450	1700	700	60	1220	110
Future Volume (veh/h)	120	210	510	510	420	450	450	1700	700	60	1220	110
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		0.97	1.00		0.98	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	124	216	346	526	433	309	464	1753	526	62	1258	92
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	151	382	684	597	442	419	1120	2952	1171	125	1378	101
Arrive On Green	0.04	0.11	0.11	0.17	0.24	0.24	0.33	0.58	0.58	0.04	0.29	0.29
Sat Flow, veh/h	3428	3526	1572	3428	1856	1520	3428	5066	1540	3428	4805	351
Grp Volume(v), veh/h	124	216	346	526	433	309	464	1753	526	62	884	466
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1856	1520	1714	1689	1540	1714	1689	1780
Q Serve(g_s), s	4.3	7.0	7.6	18.0	27.8	22.2	12.6	26.5	15.1	2.1	30.4	30.4
Cycle Q Clear(g_c), s	4.3	7.0	7.6	18.0	27.8	22.2	12.6	26.5	15.1	2.1	30.4	30.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	151	382	684	597	442	419	1120	2952	1171	125	968	510
V/C Ratio(X)	0.82	0.57	0.51	0.88	0.98	0.74	0.41	0.59	0.45	0.50	0.91	0.91
Avail Cap(c_a), veh/h	151	411	697	711	442	419	1120	2952	1171	229	968	510
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	0.48	0.48	0.48	0.47	0.47	0.47	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.9	50.8	13.0	48.3	45.4	39.6	31.5	16.0	5.4	56.7	41.4	41.4
Incr Delay (d2), s/veh	28.5	1.6	0.6	5.7	24.5	3.3	0.1	0.4	0.6	3.0	14.3	23.3
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	2.4	3.1	3.7	8.0	15.5	8.5	5.1	9.6	4.0	1.0	14.2	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.4	52.4	13.5	54.1	69.9	42.9	31.6	16.4	6.0	59.8	55.7	64.7
LnGrp LOS	F	D	B	D	E	D	C	B	A	E	E	E
Approach Vol, veh/h		686			1268			2743			1412	
Approach Delay, s/veh		38.8			56.8			17.0			58.8	
Approach LOS		D			E			B			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	81.8	27.0	24.4	51.0	41.2	11.4	40.0
Change Period (Y+Rc), s	6.1	11.8	6.1	* 11	11.8	* 6.8	6.1	* 11
Max Green Setting (Gmax), s	8.3	42.7	24.9	* 14	21.3	* 34	5.3	* 29
Max Q Clear Time (g_c+I1), s	4.1	28.5	20.0	9.6	14.6	32.4	6.3	29.8
Green Ext Time (p_c), s	0.0	8.4	0.9	1.0	1.0	1.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	550	340	360	680	130	630	70	300	40	50	50
Future Volume (veh/h)	50	550	340	360	680	130	630	70	300	40	50	50
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		0.97	1.00		1.00	1.00		1.00
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	579	242	379	716	132	716	0	211	42	53	46
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	168	824	733	461	808	149	822	0	366	145	185	163
Arrive On Green	0.09	0.23	0.23	0.13	0.27	0.27	0.23	0.00	0.23	0.14	0.14	0.14
Sat Flow, veh/h	1767	3526	1572	3428	2955	545	3534	0	1572	1015	1295	1145
Grp Volume(v), veh/h	53	579	242	379	427	421	716	0	211	75	0	66
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1737	1767	0	1572	1805	0	1649
Q Serve(g_s), s	2.3	12.1	7.8	8.7	18.7	18.7	15.7	0.0	9.6	3.0	0.0	2.9
Cycle Q Clear(g_c), s	2.3	12.1	7.8	8.7	18.7	18.7	15.7	0.0	9.6	3.0	0.0	2.9
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	0.56		0.69
Lane Grp Cap(c), veh/h	168	824	733	461	482	475	822	0	366	257	0	235
V/C Ratio(X)	0.32	0.70	0.33	0.82	0.89	0.89	0.87	0.00	0.58	0.29	0.00	0.28
Avail Cap(c_a), veh/h	241	967	797	566	534	526	960	0	427	269	0	246
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.0	28.3	13.6	34.0	28.1	28.1	29.8	0.0	27.4	30.9	0.0	30.9
Incr Delay (d2), s/veh	0.4	1.3	0.1	6.6	14.4	14.6	7.0	0.0	0.5	0.2	0.0	0.2
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	0.9	4.9	4.0	3.8	9.2	9.1	7.3	0.0	3.6	1.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	29.7	13.7	40.5	42.4	42.7	36.8	0.0	28.0	31.1	0.0	31.1
LnGrp LOS	C	C	B	D	D	D	D	A	C	C	A	C
Approach Vol, veh/h		874			1227			927			141	
Approach Delay, s/veh		25.5			42.0			34.8			31.1	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	24.6		16.6	12.3	27.8		23.8
Change Period (Y+Rc), s	* 4.7	5.8		5.1	* 4.7	5.8		5.1
Max Green Setting (Gmax), s	* 13	22.1		12.0	* 11	24.4		21.9
Max Q Clear Time (g_c+I1), s	10.7	14.1		5.0	4.3	20.7		17.7
Green Ext Time (p_c), s	0.2	1.9		0.3	0.0	1.3		1.0

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	230	10	380	340	1320	0	0	790	720
Future Volume (veh/h)	0	0	0	230	10	380	340	1320	0	0	790	720
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				320	0	167	351	1361	0	0	814	587
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				468	0	198	664	3929	0	0	2260	936
Arrive On Green				0.13	0.00	0.13	0.75	1.00	0.00	0.00	0.35	0.35
Sat Flow, veh/h				3534	0	1493	1767	5233	0	0	6643	2645
Grp Volume(v), veh/h				320	0	167	351	1361	0	0	814	587
Grp Sat Flow(s),veh/h/ln				1767	0	1493	1767	1689	0	0	1596	1323
Q Serve(g_s), s				8.6	0.0	10.9	8.2	0.0	0.0	0.0	9.4	18.4
Cycle Q Clear(g_c), s				8.6	0.0	10.9	8.2	0.0	0.0	0.0	9.4	18.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				468	0	198	664	3929	0	0	2260	936
V/C Ratio(X)				0.68	0.00	0.85	0.53	0.35	0.00	0.00	0.36	0.63
Avail Cap(c_a), veh/h				756	0	320	664	3929	0	0	2260	936
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.78	0.78	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				41.4	0.0	42.4	8.8	0.0	0.0	0.0	23.9	26.8
Incr Delay (d2), s/veh				0.7	0.0	5.6	0.6	0.2	0.0	0.0	0.4	3.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	4.3	2.2	0.1	0.0	0.0	3.5	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.1	0.0	48.0	9.4	0.2	0.0	0.0	24.4	30.0
LnGrp LOS				D	A	D	A	A	A	A	C	C
Approach Vol, veh/h					487			1712			1401	
Approach Delay, s/veh					44.1			2.1			26.7	
Approach LOS					D			A			C	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	82.2		42.2	40.0		17.8
Change Period (Y+Rc), s	4.6		4.6	* 4.6		4.6
Max Green Setting (Gmax), s	69.4		30.3	* 35		21.4
Max Q Clear Time (g_c+I1), s	2.0		10.2	20.4		12.9
Green Ext Time (p_c), s	3.9		1.0	2.5		0.3

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

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	680	10	260	0	0	0	0	850	270	290	760	0
Future Volume (veh/h)	680	10	260	0	0	0	0	850	270	290	760	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.97	1.00		1.00
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	757	0	129				0	867	215	296	776	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	849	0	365				0	1345	332	987	2355	0
Arrive On Green	0.24	0.00	0.24				0.00	0.33	0.33	0.58	1.00	0.00
Sat Flow, veh/h	3534	0	1520				0	4195	993	3428	3618	0
Grp Volume(v), veh/h	757	0	129				0	726	356	296	776	0
Grp Sat Flow(s),veh/h/ln	1767	0	1520				0	1689	1644	1714	1763	0
Q Serve(g_s), s	20.7	0.0	7.0				0.0	18.2	18.4	4.4	0.0	0.0
Cycle Q Clear(g_c), s	20.7	0.0	7.0				0.0	18.2	18.4	4.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.60	1.00		0.00
Lane Grp Cap(c), veh/h	849	0	365				0	1128	549	987	2355	0
V/C Ratio(X)	0.89	0.00	0.35				0.00	0.64	0.65	0.30	0.33	0.00
Avail Cap(c_a), veh/h	1357	0	584				0	1128	549	987	2355	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	36.7	0.0	31.6				0.0	28.3	28.3	16.0	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.0	0.2				0.0	2.8	5.8	0.1	0.3	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
%ile BackOfQ(50%),veh/ln	9.2	0.0	2.6				0.0	7.5	7.8	1.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	0.0	31.8				0.0	31.1	34.1	16.1	0.3	0.0
LnGrp LOS	D	A	C				A	C	C	B	A	A
Approach Vol, veh/h		886						1082			1072	
Approach Delay, s/veh		38.6						32.1			4.7	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	33.4	38.0	28.6	71.4
Change Period (Y+Rc), s	4.6	* 4.6	4.6	4.6
Max Green Setting (Gmax), s	14.8	* 33	38.4	52.4
Max Q Clear Time (g_c+I1), s	16.4	20.4	22.7	2.0
Green Ext Time (p_c), s	0.1	2.3	0.7	1.9

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	470	0	720	260	1910	0	0	1600	600
Future Volume (veh/h)	0	0	0	470	0	720	260	1910	0	0	1600	600
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				628	0	306	268	1969	0	0	1649	310
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				787	0	338	309	3518	0	0	2904	883
Arrive On Green				0.22	0.00	0.22	0.18	1.00	0.00	0.00	0.19	0.19
Sat Flow, veh/h				3534	0	1518	3428	5233	0	0	5233	1540
Grp Volume(v), veh/h				628	0	306	268	1969	0	0	1649	310
Grp Sat Flow(s),veh/h/ln				1767	0	1518	1714	1689	0	0	1689	1540
Q Serve(g_s), s				25.2	0.0	29.4	11.4	0.0	0.0	0.0	44.4	26.2
Cycle Q Clear(g_c), s				25.2	0.0	29.4	11.4	0.0	0.0	0.0	44.4	26.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				787	0	338	309	3518	0	0	2904	883
V/C Ratio(X)				0.80	0.00	0.91	0.87	0.56	0.00	0.00	0.57	0.35
Avail Cap(c_a), veh/h				1352	0	581	373	3518	0	0	2904	883
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	0.00	1.00	0.60	0.60	0.00	0.00	0.36	0.36
Uniform Delay (d), s/veh				55.1	0.0	56.8	60.6	0.0	0.0	0.0	43.9	36.6
Incr Delay (d2), s/veh				0.7	0.0	5.8	9.6	0.4	0.0	0.0	0.3	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
%ile BackOfQ(50%),veh/ln				11.4	0.0	11.9	4.9	0.1	0.0	0.0	20.2	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				55.8	0.0	62.6	70.3	0.4	0.0	0.0	44.2	37.0
LnGrp LOS				E	A	E	E	A	A	A	D	D
Approach Vol, veh/h					934			2237			1959	
Approach Delay, s/veh					58.0			8.8			43.1	
Approach LOS					E			A			D	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	111.0		18.2	92.8		39.0
Change Period (Y+Rc), s	6.8		* 4.7	6.8		5.6
Max Green Setting (Gmax), s	80.2		* 16	59.2		57.4
Max Q Clear Time (g_c+I1), s	2.0		13.4	46.4		31.4
Green Ext Time (p_c), s	54.4		0.1	11.9		2.0

Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	0	250	0	0	0	0	1680	670	590	1570	0
Future Volume (veh/h)	510	0	250	0	0	0	0	1680	670	590	1570	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.96	1.00		1.00
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1856	0	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	520	0	153				0	1714	327	602	1602	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	587	0	269				0	2337	697	821	3779	0
Arrive On Green	0.17	0.00	0.17				0.00	0.46	0.46	0.48	1.00	0.00
Sat Flow, veh/h	3428	0	1572				0	5233	1512	3428	5233	0
Grp Volume(v), veh/h	520	0	153				0	1714	327	602	1602	0
Grp Sat Flow(s),veh/h/ln	1714	0	1572				0	1689	1512	1714	1689	0
Q Serve(g_s), s	22.2	0.0	13.4				0.0	41.3	22.3	21.2	0.0	0.0
Cycle Q Clear(g_c), s	22.2	0.0	13.4				0.0	41.3	22.3	21.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	587	0	269				0	2337	697	821	3779	0
V/C Ratio(X)	0.89	0.00	0.57				0.00	0.73	0.47	0.73	0.42	0.00
Avail Cap(c_a), veh/h	695	0	319				0	2337	697	821	3779	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.63	0.63	0.00
Uniform Delay (d), s/veh	60.7	0.0	57.1				0.0	32.9	27.8	35.3	0.0	0.0
Incr Delay (d2), s/veh	11.7	0.0	1.9				0.0	2.1	2.3	1.9	0.2	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
%ile BackOfQ(50%),veh/ln	10.7	0.0	5.5				0.0	16.7	8.3	7.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	0.0	58.9				0.0	35.0	30.0	37.2	0.2	0.0
LnGrp LOS	E	A	E				A	C	C	D	A	A
Approach Vol, veh/h		673						2041			2204	
Approach Delay, s/veh		69.3						34.2			10.3	
Approach LOS		E						C			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	42.7	76.0	31.3	118.7
Change Period (Y+Rc), s	6.8	* 6.8	5.6	6.8
Max Green Setting (Gmax), s	32.8	* 69	30.4	107.2
Max Q Clear Time (g_c+I1), s	23.2	43.3	24.2	2.0
Green Ext Time (p_c), s	0.9	22.1	1.5	45.0

Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Notes

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	620	400	0	2240	1690	0
Future Volume (veh/h)	620	400	0	2240	1690	0
Initial Q (Qb), veh	0	70	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	0
Adj Flow Rate, veh/h	639	330	0	2309	1742	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	0	3	3	0
Cap, veh/h	1295	594	0	2424	3055	0
Arrive On Green	0.26	0.26	0.00	0.56	0.56	0.00
Sat Flow, veh/h	3428	1572	0	5400	6903	0
Grp Volume(v), veh/h	639	330	0	2309	1742	0
Grp Sat Flow(s),veh/h/ln	1714	1572	0	1689	1596	0
Q Serve(g_s), s	11.7	13.6	0.0	25.5	11.4	0.0
Cycle Q Clear(g_c), s	11.7	13.6	0.0	25.5	11.4	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1295	594	0	2424	3055	0
V/C Ratio(X)	0.49	0.56	0.00	0.95	0.57	0.00
Avail Cap(c_a), veh/h	1695	777	0	3192	4022	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.4	27.9	0.0	22.4	16.8	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.0	5.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	224.3	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	49.3	0.0	14.9	5.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.5	252.5	0.0	28.2	16.8	0.0
LnGrp LOS	C	F	A	C	B	A
Approach Vol, veh/h	969			2309	1742	
Approach Delay, s/veh	100.2			28.2	16.8	
Approach LOS	F			C	B	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	45.0		23.6		45.0
Change Period (Y+Rc), s	6.8		6.1		6.8
Max Green Setting (Gmax), s	43.2		33.9		43.2
Max Q Clear Time (g_c+I1), s	27.5		15.6		13.4
Green Ext Time (p_c), s	10.7		2.0		10.4

Intersection Summary		
HCM 6th Ctrl Delay	38.1	
HCM 6th LOS	D	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	80	70	220	80	550	160	1540	390	730	1210	170
Future Volume (veh/h)	150	80	70	220	80	550	160	1540	390	730	1210	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	153	82	55	224	82	422	163	1571	248	745	1235	165
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	175	129	86	190	237	564	192	1697	681	814	1436	191
Arrive On Green	0.10	0.13	0.13	0.11	0.13	0.13	0.11	0.34	0.34	0.24	0.46	0.46
Sat Flow, veh/h	1767	1011	678	1767	1856	1491	1767	5066	1530	3428	3111	413
Grp Volume(v), veh/h	153	0	137	224	82	422	163	1571	248	745	697	703
Grp Sat Flow(s),veh/h/ln	1767	0	1690	1767	1856	1491	1767	1689	1530	1714	1763	1762
Q Serve(g_s), s	10.2	0.0	9.2	12.9	4.8	7.1	10.9	35.9	4.1	25.4	42.2	42.9
Cycle Q Clear(g_c), s	10.2	0.0	9.2	12.9	4.8	7.1	10.9	35.9	4.1	25.4	42.2	42.9
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	175	0	215	190	237	564	192	1697	681	814	814	813
V/C Ratio(X)	0.87	0.00	0.64	1.18	0.35	0.75	0.85	0.93	0.36	0.91	0.86	0.86
Avail Cap(c_a), veh/h	175	0	351	190	385	683	278	1697	681	814	814	813
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	53.3	0.0	49.7	53.6	47.8	13.9	52.5	38.5	8.2	44.6	28.8	28.9
Incr Delay (d2), s/veh	35.1	0.0	3.1	121.9	0.9	3.7	15.3	10.1	1.5	12.2	9.0	9.5
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	6.2	0.0	4.1	12.1	2.3	6.1	5.5	15.9	2.2	11.9	18.9	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.4	0.0	52.8	175.4	48.7	17.6	67.8	48.6	9.7	56.7	37.8	38.5
LnGrp LOS	F	A	D	F	D	B	E	D	A	E	D	D
Approach Vol, veh/h		290			728			1982			2145	
Approach Delay, s/veh		71.6			69.7			45.3			44.6	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	46.0	18.0	21.4	19.1	61.5	18.0	21.4
Change Period (Y+Rc), s	6.1	5.8	5.1	6.1	6.1	* 6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	40.2	12.9	24.9	18.9	* 40	11.9	24.9
Max Q Clear Time (g_c+I1), s	7.4	37.9	14.9	11.2	12.9	44.9	12.2	9.1
Green Ext Time (p_c), s	0.0	1.7	0.0	0.5	0.2	0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	49.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	700	330	270	140	460	80	280	130	90	160	90	50
Future Volume (veh/h)	700	330	270	140	460	80	280	130	90	160	90	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	722	340	247	144	474	61	212	242	67	165	93	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	785	683	485	177	697	89	308	324	263	254	169	78
Arrive On Green	0.23	0.35	0.35	0.10	0.22	0.22	0.17	0.17	0.17	0.14	0.14	0.14
Sat Flow, veh/h	3428	1944	1381	1767	3129	400	1767	1856	1508	1767	1180	546
Grp Volume(v), veh/h	722	307	280	144	266	269	212	242	67	165	0	136
Grp Sat Flow(s),veh/h/ln	1714	1763	1562	1767	1763	1766	1767	1856	1508	1767	0	1725
Q Serve(g_s), s	18.1	12.1	12.5	7.0	12.2	12.3	9.9	10.9	3.4	7.8	0.0	6.5
Cycle Q Clear(g_c), s	18.1	12.1	12.5	7.0	12.2	12.3	9.9	10.9	3.4	7.8	0.0	6.5
Prop In Lane	1.00		0.88	1.00		0.23	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	785	619	549	177	393	394	308	324	263	254	0	248
V/C Ratio(X)	0.92	0.50	0.51	0.81	0.68	0.68	0.69	0.75	0.25	0.65	0.00	0.55
Avail Cap(c_a), veh/h	789	638	565	277	508	509	501	526	428	581	0	568
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	22.5	22.6	38.8	31.4	31.4	34.1	34.6	31.4	35.7	0.0	35.1
Incr Delay (d2), s/veh	15.5	2.2	2.6	4.9	7.3	7.5	1.0	1.3	0.2	1.1	0.0	0.7
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	8.9	5.1	4.8	3.2	5.8	5.9	4.3	5.0	1.2	3.4	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	24.7	25.2	43.8	38.6	38.9	35.2	35.9	31.6	36.7	0.0	35.8
LnGrp LOS	D	C	C	D	D	D	D	D	C	D	A	D
Approach Vol, veh/h		1309			679			521			301	
Approach Delay, s/veh		38.1			39.8			35.0			36.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	36.4		17.8	24.9	25.0		20.5				
Change Period (Y+Rc), s	* 4.7	5.4		5.1	* 4.7	5.4		5.1				
Max Green Setting (Gmax), s	* 14	31.9		29.0	* 20	25.4		25.0				
Max Q Clear Time (g_c+I1), s	10.3	14.5		9.8	20.1	14.3		12.9				
Green Ext Time (p_c), s	0.1	7.2		0.7	0.0	4.8		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	520	250	30	60	30	350	1320	160	220	680	200
Future Volume (veh/h)	160	520	250	30	60	30	350	1320	160	220	680	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	165	536	170	31	62	29	361	1361	164	227	701	144
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	216	575	474	107	981	424	422	1812	218	278	1798	642
Arrive On Green	0.06	0.31	0.31	0.03	0.28	0.28	0.12	0.40	0.40	0.08	0.35	0.35
Sat Flow, veh/h	3428	1856	1528	3428	3526	1525	3428	4567	550	3428	5066	1531
Grp Volume(v), veh/h	165	536	170	31	62	29	361	1006	519	227	701	144
Grp Sat Flow(s),veh/h/ln	1714	1856	1528	1714	1763	1525	1714	1689	1740	1714	1689	1531
Q Serve(g_s), s	6.2	36.4	11.2	1.1	1.7	1.8	13.4	33.3	33.3	8.5	13.5	7.9
Cycle Q Clear(g_c), s	6.2	36.4	11.2	1.1	1.7	1.8	13.4	33.3	33.3	8.5	13.5	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	216	575	474	107	981	424	422	1340	690	278	1798	642
V/C Ratio(X)	0.76	0.93	0.36	0.29	0.06	0.07	0.86	0.75	0.75	0.82	0.39	0.22
Avail Cap(c_a), veh/h	240	631	519	158	1115	482	543	1340	690	306	1798	642
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	43.5	34.8	61.6	34.5	34.5	55.9	33.7	33.7	58.8	31.4	24.3
Incr Delay (d2), s/veh	12.4	19.8	0.5	1.5	0.0	0.1	10.3	3.9	7.4	14.5	0.6	0.8
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	3.0	19.2	4.1	0.5	0.7	0.7	6.3	13.8	14.9	4.2	5.5	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.3	63.3	35.3	63.1	34.5	34.6	66.2	37.6	41.1	73.3	32.0	25.1
LnGrp LOS	E	E	D	E	C	C	E	D	D	E	C	C
Approach Vol, veh/h		871			122			1886			1072	
Approach Delay, s/veh		59.5			41.8			44.0			39.8	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	46.1	16.0	58.8	13.3	42.0	21.4	53.3
Change Period (Y+Rc), s	5.1	5.8	5.4	7.2	5.1	5.8	5.4	7.2
Max Green Setting (Gmax), s	6.0	44.2	11.6	44.7	9.1	41.1	20.6	35.7
Max Q Clear Time (g_c+I1), s	3.1	38.4	10.5	35.3	8.2	3.8	15.4	15.5
Green Ext Time (p_c), s	0.0	1.9	0.1	7.1	0.0	0.4	0.6	6.7

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	430	300	300	200	150	250
Future Volume (veh/h)	430	300	300	200	150	250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	453	316	316	211	158	263
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	611	424	370	2064	488	434
Arrive On Green	0.31	0.31	0.21	0.59	0.28	0.28
Sat Flow, veh/h	2082	1380	1767	3618	1767	1572
Grp Volume(v), veh/h	401	368	316	211	158	263
Grp Sat Flow(s),veh/h/ln	1763	1607	1767	1763	1767	1572
Q Serve(g_s), s	13.3	13.4	11.2	1.7	4.6	9.5
Cycle Q Clear(g_c), s	13.3	13.4	11.2	1.7	4.6	9.5
Prop In Lane		0.86	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	541	493	370	2064	488	434
V/C Ratio(X)	0.74	0.75	0.85	0.10	0.32	0.61
Avail Cap(c_a), veh/h	541	493	502	2327	488	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	20.3	24.8	6.0	18.7	20.5
Incr Delay (d2), s/veh	8.9	9.8	10.3	0.0	1.8	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	5.5	5.1	0.4	1.8	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.1	30.1	35.1	6.0	20.5	26.6
LnGrp LOS	C	C	D	A	C	C
Approach Vol, veh/h	769			527	421	
Approach Delay, s/veh	29.6			23.4	24.3	
Approach LOS	C			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.2	24.5				42.7	22.5
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	13.5	20.0				43.0	18.0
Max Q Clear Time (g_c+I1), s	13.3	15.4				3.7	11.5
Green Ext Time (p_c), s	0.4	1.8				1.2	0.8

Intersection Summary		
HCM 6th Ctrl Delay	26.4	
HCM 6th LOS	C	

Appendix E
Detailed Freeway Analysis Inputs and Calculations
Oceanside GPU Conditions

Freeway	Segment	Freeway Inputs and Analysis Results: Oceanside GPU										
		Peak Hour	Direction	Lanes	D	K	HVF	AADT	Peak Hour Volume	Speed	Density	LOS
I-5	Northern City Limit to SR-76	AM	N	5	55.8%	6.8%	6.0%	223,000	8,500	63.9	29.7	D
			S	5	44.2%	6.8%	6.0%	223,000	6,800	68.2	22.2	C
		PM	N	5	44.6%	6.6%	6.0%	223,000	6,600	68.5	21.5	C
			S	5	55.4%	6.6%	6.0%	223,000	8,200	65.1	28.1	D
	SR-76 to Mission Avenue	AM	N	5	55.8%	6.8%	6.0%	208,000	8,000	65.1	27.4	D
			S	5	44.2%	6.8%	6.0%	208,000	6,300	68.2	20.6	C
		PM	N	5	44.6%	6.6%	6.0%	208,000	6,200	68.2	20.3	C
			S	5	55.4%	6.6%	6.0%	208,000	7,700	65.9	26.1	D
	Mission Avenue to Oceanside Boulevard	AM	N	5	55.8%	6.8%	4.8%	204,000	7,800	65.1	26.4	D
			S	5	44.2%	6.8%	4.8%	204,000	6,200	67.3	20.3	C
		PM	N	5	54.0%	6.5%	4.8%	204,000	7,200	66.3	24.0	C
			S	5	46.0%	6.5%	4.8%	204,000	6,200	67.3	20.3	C
	Oceanside Boulevard to California Street	AM	N	5	55.8%	6.8%	4.8%	244,000	9,300	59.8	34.3	D
			S	5	44.2%	6.8%	4.8%	244,000	7,400	65.4	25.0	C
		PM	N	5	54.0%	6.5%	4.8%	244,000	8,600	62.4	30.4	D
			S	5	46.0%	6.5%	4.8%	244,000	7,400	65.4	25.0	C
	California Street to Cassidy Street	AM	N	5	55.8%	6.8%	4.8%	245,000	9,400	59.4	34.9	D
			S	5	44.2%	6.8%	4.8%	245,000	7,400	65.4	25.0	C
		PM	N	5	54.0%	6.5%	4.8%	245,000	8,700	62.1	30.9	D
			S	5	46.0%	6.5%	4.8%	245,000	7,400	65.4	25.0	C
	Cassidy Street to Vista Way/SR-78	AM	N	5	55.8%	6.8%	4.8%	239,000	9,100	61.0	32.9	D
			S	5	44.2%	6.8%	4.8%	239,000	7,300	66.1	24.4	C
		PM	N	5	54.0%	6.5%	4.8%	239,000	8,500	63.2	29.7	D
			S	5	46.0%	6.5%	4.8%	239,000	7,200	66.3	24.0	C
	Vista Way/SR-78 to Southern City Limits	AM	N	5	55.8%	6.8%	4.8%	234,000	9,000	61.0	32.9	D
			S	5	44.2%	6.8%	4.8%	234,000	7,100	66.4	23.6	C
		PM	N	5	54.0%	6.5%	4.8%	234,000	8,300	63.8	28.7	D
			S	5	46.0%	6.5%	4.8%	234,000	7,100	66.4	23.6	C
SR-78	I-5 to Jefferson Street	AM	E	4	56.9%	6.8%	4.7%	136,000	5,300	68.3	21.4	C
			W	4	43.1%	6.8%	4.7%	136,000	4,000	68.1	16.2	B
		PM	E	4	64.0%	7.6%	4.7%	136,000	6,600	64.9	28.0	D
			W	4	36.0%	7.6%	4.7%	136,000	3,800	68.1	15.4	B
	Jefferson Street to El Camino Real	AM	E	4	44.2%	6.8%	4.9%	141,000	4,300	68.1	17.4	B
			W	4	55.8%	6.8%	4.9%	141,000	5,400	67.5	22.1	C
		PM	E	4	54.3%	7.5%	4.9%	141,000	5,800	66.8	24.0	C
			W	4	45.7%	7.5%	4.9%	141,000	4,900	68.0	19.9	C
	El Camino Real to College Boulevard	AM	E	4	45.5%	6.9%	4.9%	145,000	4,600	69.1	18.4	C
			W	4	54.5%	6.9%	4.9%	145,000	5,500	68.2	22.2	C
		PM	E	4	46.7%	7.2%	4.9%	145,000	4,900	68.9	19.6	C
			W	4	53.3%	7.2%	4.9%	145,000	5,600	68.0	22.7	C
	College Boulevard to Eastern City Limits	AM	E	4	45.5%	6.9%	4.9%	138,000	4,400	70.1	17.3	B
			W	4	54.5%	6.9%	4.9%	138,000	5,300	68.9	21.2	C
		PM	E	4	46.7%	7.2%	4.9%	138,000	4,700	70.0	18.5	C
			W	4	53.3%	7.2%	4.9%	138,000	5,300	68.9	21.2	C
	Eastern City Limits to Emerald Drive	AM	E	4	45.5%	6.9%	4.9%	138,000	4,400	68.6	17.4	B
			W	4	54.5%	6.9%	4.9%	138,000	5,300	68.9	21.2	C
		PM	E	4	46.7%	7.2%	4.9%	138,000	4,700	69.5	18.6	C
			W	4	53.3%	7.2%	4.9%	138,000	5,300	68.9	21.2	C

Appendix F
HCS Software Worksheets
Oceanside GPU Conditions

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan AM
Project Description	AM I-5 NB Northern City Limit to SR-76	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8500	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1896
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2392
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2392
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.7
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.2		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 SB Northern City Limit to SR-76	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6800	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1517
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2392
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2392
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.2
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.2		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 NB Northern City Limit to SR-76	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6600	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1472
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2392
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2392
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.5
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.2		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 SB Northern City Limit to SR-76	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8200	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1829
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2392
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2392
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.1
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.2		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 NB SR-76 to Mission Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8000	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1784
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2384
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2384
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.4		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 SB SR-76 to Mission Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6300	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1405
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2384
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2384
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.6
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.4		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	7/30/2020
Agency	Chen Ryan Associates	Analysis Year	2020
Jurisdiction	City of Oceanside	Time Period Analyzed	Existing PM
Project Description	PM I-5 NB SR-76 to Mission Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6200	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1383
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2384
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2384
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.4		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 SB SR-76 to Mission Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7700	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1717
Total Trucks, %	5.98	Capacity (c), pc/h/ln	2384
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2384
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.4		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 NB Mission Avenue to Oceanside Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7800	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1721
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 SB Mission Avenue to Oceanside Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6200	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1368
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 NB Mission Avenue to Oceanside Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7200	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1589
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.0
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 SB Mission Avenue to Oceanside Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6200	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1368
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 NB Oceanside Boulevard to California Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	2052
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 SB Oceanside Boulevard to California Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1633
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 NB Oceanside Boulevard to California Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8600	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1898
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.4
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 SB Oceanside Boulevard to California Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1633
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 NB California Street to Cassidy Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	2074
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 SB California Street to Cassidy Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1633
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 NB California Street to Cassidy Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8700	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1920
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.9
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 SB California Street to Cassidy Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1633
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2366
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2366
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 NB Cassidy Street to Vista Way/SR-78	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9100	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	2008
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 SB Cassidy Street to Vista Way/SR-78	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1611
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 NB Cassidy Street to Vista Way/SR-78	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8500	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1876
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.7
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 SB Cassidy Street to Vista Way/SR-78	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7200	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1589
Total Trucks, %	4.80	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.0
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 NB Vista Way/ SR-78 to Southern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9100	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	2008
Total Trucks, %	4.81	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
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Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM I-5 SB Vista Way/ SR-78 to Southern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7100	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1567
Total Trucks, %	4.81	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
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Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 NB Vista Way/ SR-78 to Southern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1832
Total Trucks, %	4.81	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.7
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM I-5 SB Vista Way/ SR-78 to Southern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7100	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1567
Total Trucks, %	4.81	Capacity (c), pc/h/ln	2373
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2373
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.3		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 EB I-5 to Jefferson Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.37
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5300	Heavy Vehicle Adjustment Factor (f_{HV})	0.955
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1460
Total Trucks, %	4.67	Capacity (c), pc/h/ln	2388
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2388
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.8		

HCS7 Basic Freeway Report

Project Information

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Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 WB I-5 to Jefferson Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4000	Heavy Vehicle Adjustment Factor (f_{HV})	0.955
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1102
Total Trucks, %	4.67	Capacity (c), pc/h/ln	2381
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2381
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.1		

HCS7 Basic Freeway Report

Project Information

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Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 EB I-5 to Jefferson Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.37
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6600	Heavy Vehicle Adjustment Factor (f_{HV})	0.955
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1819
Total Trucks, %	4.67	Capacity (c), pc/h/ln	2388
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2388
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.8		

HCS7 Basic Freeway Report

Project Information

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Project Description	PM SR-78 WB I-5 to Jefferson Street	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3800	Heavy Vehicle Adjustment Factor (f_{HV})	0.955
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1047
Total Trucks, %	4.67	Capacity (c), pc/h/ln	2381
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2381
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 EB Jefferson Street to El Camino Real	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1186
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2381
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2381
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
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Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 WB Jefferson Street to El Camino Real	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1490
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2381
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2381
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 EB Jefferson Street to El Camino Real	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5800	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1600
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2381
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2381
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.0
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 WB Jefferson Street to El Camino Real	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4900	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1352
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2381
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2381
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 EB El Camino Real to College Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.22
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4600	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1269
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2391
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2391
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.4
Total Ramp Density Adjustment	6.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 WB El Camino Real to College Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.22
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5500	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1517
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2391
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2391
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.2
Total Ramp Density Adjustment	6.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.1		

HCS7 Basic Freeway Report

Project Information

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Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 EB El Camino Real to College Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.22
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4900	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1352
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2391
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2391
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.6
Total Ramp Density Adjustment	6.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 WB El Camino Real to College Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.22
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5600	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1545
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2391
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2391
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.7
Total Ramp Density Adjustment	6.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 EB College Boulevard to Eastern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1214
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.3
Total Ramp Density Adjustment	5.4	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.1		

HCS7 Basic Freeway Report

Project Information

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Project Description	AM SR-78 WB College Boulevard to Eastern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1462
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2396
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2396
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	5.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 EB College Boulevard to Eastern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4700	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1296
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.5
Total Ramp Density Adjustment	5.4	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.1		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 WB College Boulevard to Eastern City Limits	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1462
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2396
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2396
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	5.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 EB Eastern City Limits to Emerald Drive	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4400	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1214
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2396
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2396
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.4
Total Ramp Density Adjustment	5.8	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.6		

HCS7 Basic Freeway Report

Project Information

Analyst	Chen Ryan Associates	Date	1/14/2024
Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	AM SR-78 WB Eastern City Limits to Emerald Drive	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1462
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2396
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2396
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	5.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.6		

HCS7 Basic Freeway Report

Project Information

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Project Description	PM SR-78 EB Eastern City Limits to Emerald Drive	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4700	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1296
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2396
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2396
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.6
Total Ramp Density Adjustment	5.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.6		

HCS7 Basic Freeway Report

Project Information

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Agency	Chen Ryan Associates	Analysis Year	2050
Jurisdiction	City of Oceanside	Time Period Analyzed	Preferred Plan
Project Description	PM SR-78 WB Eastern City Limits to Emerald Drive	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	2.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	69.6
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5300	Heavy Vehicle Adjustment Factor (f_{HV})	0.954
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1462
Total Trucks, %	4.87	Capacity (c), pc/h/ln	2396
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2396
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	5.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	69.6		