Appendix K: Traffic Report

NUTMEG RESIDENTIAL CONDOMINIUMS

TRAFFIC IMPACT ANALYSIS

FINAL: APRIL 9, 2019

JOB NUMBER: 18503

RICK ENGINEERING COMPANY

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Nutmeg Residential Condominiums

Traffic Impact Analysis

Final: April 9, 2019

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1 EXECUTIVE SUMMARY

This traffic impact analysis evaluates the traffic conditions associated with the proposed Nutmeg Residential Condominiums Project (herein referred to as "the project") located on a vacant site along the east side of I-15, east of N. Centre City Parkway and north and south of N. Nutmeg Street in the City of Escondido. The project proposes a Multi-Family Site Development Plan to construct 137 residential townhome/condominium units on approximately 7.66 acres.

The site to the north of Nutmeg Street will be developed with 39 townhome residential units. The site to the south of Nutmeg Street would be developed with 98 townhome residential units.

The project will take access from Nutmeg Street from two driveways that will be aligned as a four-way intersection, with one driveway provided for the north and south parcels, respectively. The driveway approaches of the project access intersection will be stop-controlled, while the eastbound and westbound approaches on Nutmeg Street will be uncontrolled.

The project is forecast to generate approximately 1,096 average weekday trips, including 88 AM peak hour trips and 110 PM peak hour trips. A comparison in trip generation was performed between the currently proposed project and the previously approved commercial uses, which revealed that the proposed project is forecast to generate 1,202 fewer daily trips, 234 fewer AM peak hour trips, and 189 fewer PM peak hour trips than the previously approved uses.

The results of the existing conditions analysis showed that the study intersections currently operate at acceptable LOS except for the following intersections that currently operate at a deficient LOS E or F during the peak hours:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (PM: LOS E); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The existing conditions roadway segment analysis results showed that all study roadway segments are currently operating at acceptable LOS based on daily traffic volumes and roadway capacity.

Under Existing Plus Project conditions, the study intersections are forecast to continue operating at acceptable LOS except for the following intersections:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS F);
- W. Country Club Lane/ N. Nutmeg Street (PM: LOS E); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The forecast increase in delay to the following two intersections forecast to operate at LOS D, E or F would exceed the significance threshold of 2.0 seconds:

- N. Centre City Parkway/ N. Nutmeg Street (AM and PM); and
- W. Country Club Lane/ N. Nutmeg Street (AM and PM).

Therefore, the project would result in direct significant impacts at the two above-listed intersections under Existing Plus Project conditions.

The results of the roadway segment analysis under Existing Plus Project conditions showed that consistent with existing conditions, all study roadway segments are forecast to continue operating at acceptable LOS.

The Existing Plus Project analysis results also show that the increase in v/c ratio associated with the addition of project-related traffic to existing traffic volumes on the segment of N. Nutmeg Street between Country Club Lane and Via Alexandra would exceed the significance threshold of 0.02, resulting in a direct significant impact.

To determine the Existing Plus Cumulative conditions in the project study area, forecast project traffic associated with City of Escondido approved or pending projects was added to existing traffic volumes. The cumulative projects within the City of Escondido are forecast to generate approximately 10,672 trips per day, which includes approximately 983 AM peak hour trips and approximately 1,038 PM peak hour trips.

The results of the Existing Plus Cumulative conditions analysis showed that the following study intersections are forecast to operate at a deficient LOS E or F during the peak hours without the project:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (AM: LOS E; PM: LOS F); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The analysis results showed that with the addition of project-related traffic to Existing Plus Cumulative conditions traffic volumes, the following intersections are forecast to operate at a deficient LOS E or F during the peak hours:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS F; PM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (AM: LOS E; PM: LOS F); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The forecast increase in delay to the following two intersections forecast to operate at LOS D, E or F would exceed the significance threshold of 2.0 seconds:

- N. Centre City Parkway/ N. Nutmeg Street (AM and PM); and
- W. Country Club Lane/ N. Nutmeg Street (AM and PM).

The addition of project traffic to the N. Centre City Parkway/ N. Nutmeg Street intersection would also result in a change from an acceptable LOS D to a deficient LOS E during the PM peak hour under Existing Plus Cumulative Plus Project conditions. Therefore, the project would result in a direct significant impact at the N. Centre City Parkway/ N. Nutmeg Street intersection, and would result in a cumulative significant impact at the W. Country Club Lane/ N. Nutmeg Street intersection.

The results of the roadway segment analysis under Existing Plus Cumulative conditions showed that the study roadway segments are forecast to operate at acceptable LOS both without and with the proposed project.

The Existing Plus Cumulative Plus Project analysis results also show that the increase in v/c ratio associated with the addition of project-related traffic to Existing Plus Cumulative traffic volumes on the segment of N. Nutmeg Street between Country Club Lane and Via Alexandra would exceed the significance threshold of 0.02, resulting in a cumulative significant impact.

The signal warrant analysis results showed that at the intersection of N. Centre City Parkway/ N. Nutmeg Street, either Part A or Part B (or both) were satisfied under the following analysis scenarios:

- Existing Conditions (PM: Part B)
- Existing Plus Project Conditions (AM/PM: Part B)
- Existing Plus Cumulative Without Project Conditions (PM: Part B)
- Existing Plus Cumulative With Project Conditions (AM/PM: Part B)

The signal warrant analysis results also show that at the intersection of W. Country Club Lane/ N. Nutmeg Street, either Part A or Part B (or both) were satisfied under the following analysis scenarios:

- Existing Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Project Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Cumulative Without Project Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Cumulative With Project Conditions (AM/PM: Part A; AM/PM: Part B)

To mitigate the project's significant impacts under Existing Plus Project and Existing Plus Cumulative With Project conditions, the following mitigation measures are recommended:

MITIGATION MEASURE 1: N. Centre City Parkway/ N. Nutmeg Street

- Install a traffic signal at the intersection. Restripe the southbound approach to provide a dedicated left-turn lane, and construct a dedicated right-turn lane on the southbound approach to the satisfaction of the City engineer.

MITIGATION MEASURE 2: W. Country Club Lane/ N. Nutmeg Street

- Install a traffic signal at the intersection and restripe the southbound approach to provide a shared left-turn/through lane and a dedicated right-turn lane to the satisfaction of the City engineer.

MITIGATION MEASURE 3: N. Nutmeg Street, from W. Country Club Lane to Via Alexandra

- Widen the existing roadway between La Paloma Avenue and Via Alexandria to provide for a 14' wide southbound lane with curb, gutter and sidewalk designed as a green streets facility. Improvements shall include removal and reconstructions of existing driveways to private driveway standards and a parking restriction along the improved section of Nutmeg Street to the satisfaction of the City Engineer.

The results of a queuing analysis that was performed for the N. Centre City Parkway/ N. Nutmeg Street intersection under Existing Plus Cumulative Plus Project conditions with the recommended mitigation measures showed the following minimum storage lengths should be provided for the recommended left-turn and right-turn lanes:

- Eastbound Left-Turn Lane: 100 feet
- Southbound Left-turn Lane: 100 feet
- Southbound Right-Turn Lane: 125 feet

The results of the site access evaluation showed that no operational impacts are anticipated at the project access intersection on Nutmeg Street. The results of a queuing analysis that was performed for the Nutmeg Street / Project Access intersection showed that 50-foot left-turn pockets will be sufficient for the eastbound and westbound left-turn lanes.

The results of the sight distance assessment showed that the available sight distance looking east from both project driveway approaches is clear and unobstructed to Centre City Parkway at the intersection with Nutmeg Street.

The available sight distance looking west from both driveway approaches is currently obstructed by existing shrubs and rocks near the project site boundary with Caltrans right-of-way. Two perpendicular sections of chain link fencing separating the project site and the public street from Caltrans property are overgrown with shrubs and also obstruct line of sight looking west from the project driveways.

It is recommended that an approximately 25-foot section of fencing perpendicular to Nutmeg Street be removed. This section of fencing currently separates the project site from Caltrans right-of-way.

It is also recommended that an approximately 75-foot section of fencing parallel with Nutmeg Street be set back approximately 20 feet from its current location. It is also recommended that all existing shrubs be removed between the existing and relocated section of fencing.

The area between the existing and relocated section of fencing must be kept clear of any obstructions over 3 feet in height, and it is recommended that this area be covered in a hardscape surface such as gravel or decomposed granite (DG). This area and the recommended removal and relocation of fencing is on Caltrans property, and the project developer would be required to obtain an approved encroachment permit to remove and relocate the recommended sections of fencing, along with the removal of the existing shrubs and covering the ground surface in this area with gravel or DG.

Once the recommended removal and relocation of the existing obstructions is implemented, it is expected that the available sight distance from the southbound driveway approach will exceed 600 feet. It is expected that following removal and relocation of the existing obstructions, the available sight distance from the northbound driveway approach will exceed 400 feet. Therefore, the minimum intersection corner sight distance needed (385 feet based on roadway design speed of 35 mph) would be exceeded from both driveway approaches.

Nutmeg Street is proposed as a Class III bike route per the City's Bicycle Master Plan and General Plan Mobility Element. If the City plans to implement a Class III bike route along Nutmeg Street prior to occupancy of the proposed project, it is recommended that the project install Class III bike route signage along the project frontage on Nutmeg Street in each direction of travel.

2 INTRODUCTION

This traffic impact analysis evaluates the traffic conditions associated with the proposed Nutmeg Residential Condominiums Project (herein referred to as "the project") located on a 7.66-acre site along both sides of Nutmeg Street in the City of Escondido. **Exhibit 2-1** illustrates the regional project location.

2.1 Project Description

The project proposes to construct 137 townhome/condominium units on the 7.66-acre project site. The site to the north of Nutmeg Street will be developed with 39 townhome residential units. The site to the south of Nutmeg Street would be developed with 98 townhome residential units.

Currently the site is designated for a Commercial Office use in the City's General Plan, and the project is requesting a zoning and General Plan Amendment to change the General Plan and zoning designation on-site to Urban III-Medium Density Multi-Family Residential (17.89 DU/AC).

The project will take access from Nutmeg Street from two driveways that will be aligned as a four-way intersection, with one driveway provided for the north and south parcels, respectively. The driveway approaches of the project access intersection will be stop-controlled, while the eastbound and westbound approaches on Nutmeg Street will be uncontrolled.

The project will improve Nutmeg Street to its ultimate width as a Local Collector per the City's General Plan Mobility Element (42 feet curb-to-curb), and curbs, gutters and sidewalks will be constructed along the project frontage.

The project access intersection will be striped with left-turn lanes on the eastbound and westbound Nutmeg Street approaches to serve the project driveways. The project will also restripe the eastbound approach of the N. Centre City Parkway / N. Nutmeg Street intersection to provide a dedicated left-turn lane and a shared through/right-turn lane.

Exhibit 2-2 illustrates the project site plan.

Nutmeg Residential Condominiums Project

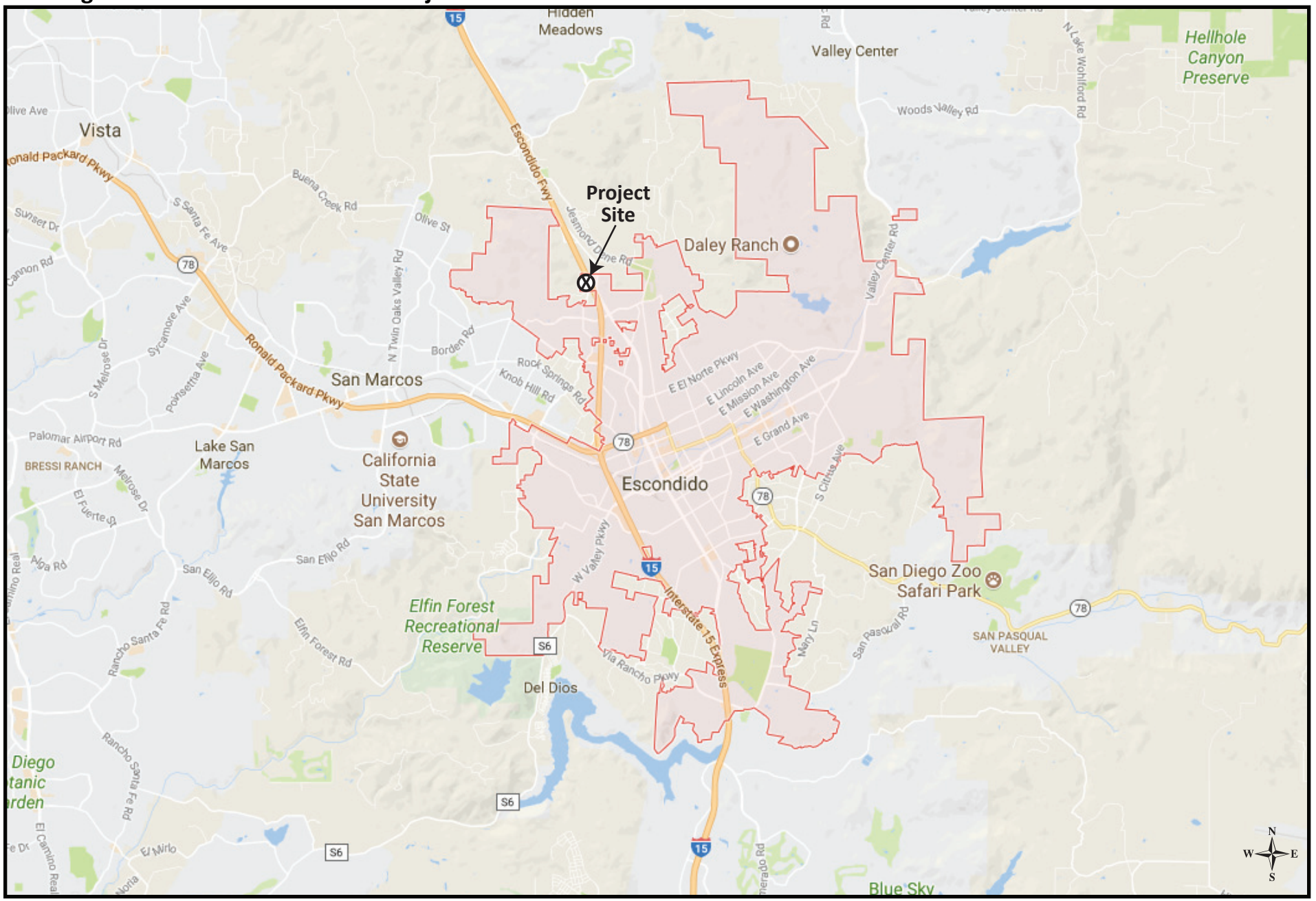

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Exhibit 2-1
Regional Project Location

Nutmeg Residential Condominiums Project

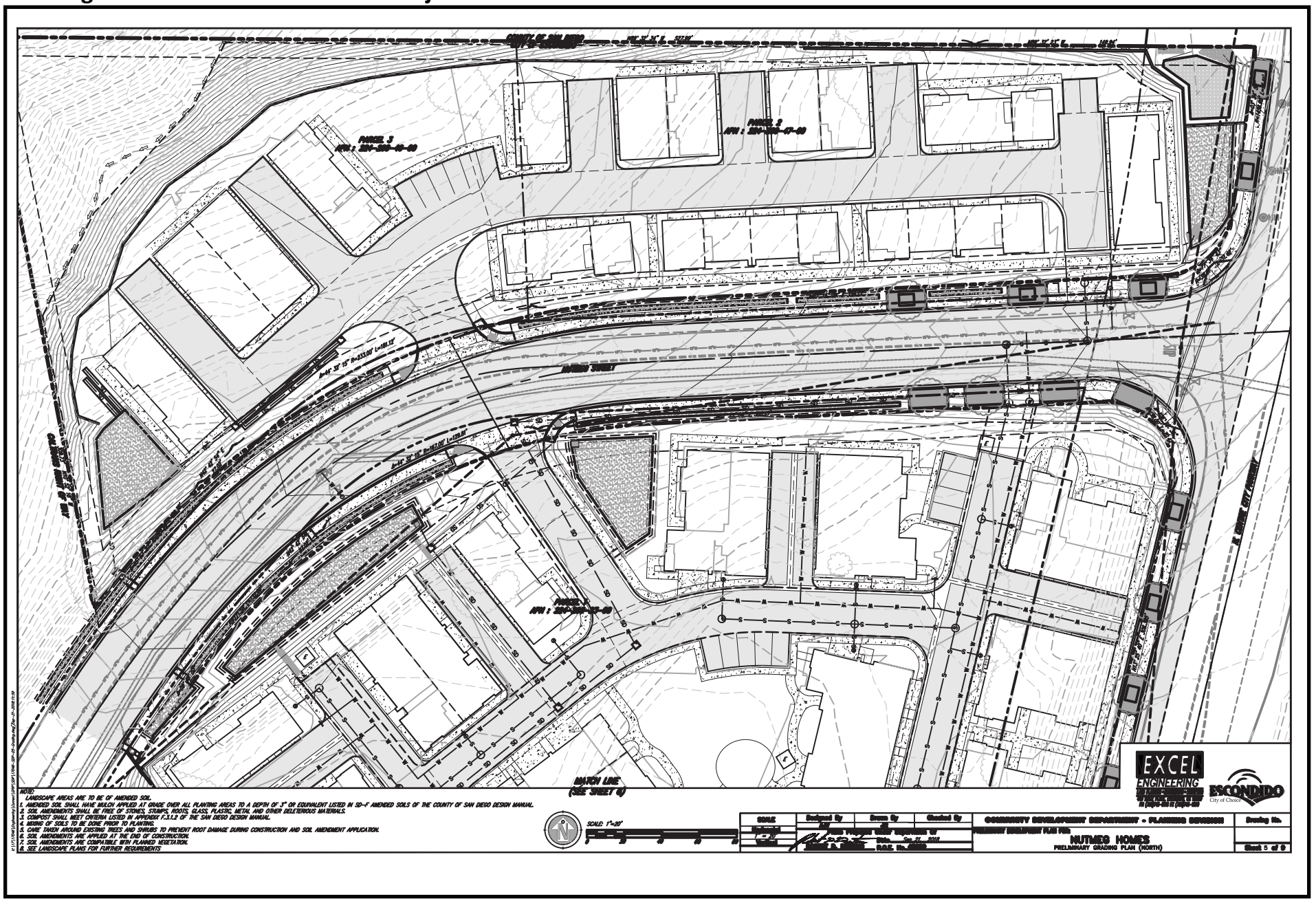

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Exhibit 2-2
Project Site Plan

2.2 Study Area

The *City of Escondido Traffic Impact Analysis Guidelines* includes ADT and intersection thresholds based on roadway classification to identify the locations that should be included in the TIA study area. **Table 2-1** below summarizes the City's study area thresholds for roadway segments and intersections according to roadway classification:

Table 2-1
Study Area Trip Thresholds for Roadway Segments and Intersections

Roadway Classification	Lanes	Parking/ No Parking	Roadway Segment Trip Thresholds (ADT)	Intersection Trip Thresholds (AM or PM peak hour trips added to any leg)
Prime Arterial	8 6	No Parking No Parking	900 800	50
Major Road	6 4	No Parking No Parking	700 500	40
Collector	4 4	No Parking Parking	500 250	30
Local Collector	2	No Parking/ Parking	200	20

Source: *City of Escondido Traffic Impact Analysis Guidelines*

Based on the City's study area thresholds as shown above, the proposed study area consists of the following 8 intersections and 9 roadway segments:

Intersections

1. N. Centre City Parkway/ N. Nutmeg Street (one-way stop controlled)
2. N. Centre City Parkway/ W. Country Club Lane (signalized)
3. W. Country Club Lane/ N. Nutmeg Street (all-way stop controlled)
4. N. Centre City Parkway/ S. Iris Lane (signalized)
5. N. Centre City Parkway/ W. El Norte Parkway (signalized)
6. W. El Norte Parkway/ Iris Lane (signalized)
7. W. El Norte Parkway/ N. Nutmeg Street (signalized)
8. N. Nutmeg Street / Project Access (two-way stop controlled)

Roadway Segments

1. N. Nutmeg Street, from N. Centre City Parkway to Project Access
2. N. Nutmeg Street, from Project Access to W. Country Club Lane
3. N. Nutmeg Street, from W. Country Club Lane to Via Alexandra
4. N. Nutmeg Street, from Via Alexandra to El Norte Parkway
5. N. Centre City Parkway, from N. Nutmeg Street to W. Country Club Lane
6. N. Centre City Parkway, from W. Country Club Lane to S. Iris Lane
7. N. Centre City Parkway, from S. Iris Lane to W. El Norte Parkway
8. S. Iris Lane, from N. Centre City Parkway to W. El Norte Parkway
9. W. El Norte Parkway, from S. Iris Lane to 1-15

Exhibit 2-3 illustrates the project study area.

Nutmeg Residential Condominiums Project

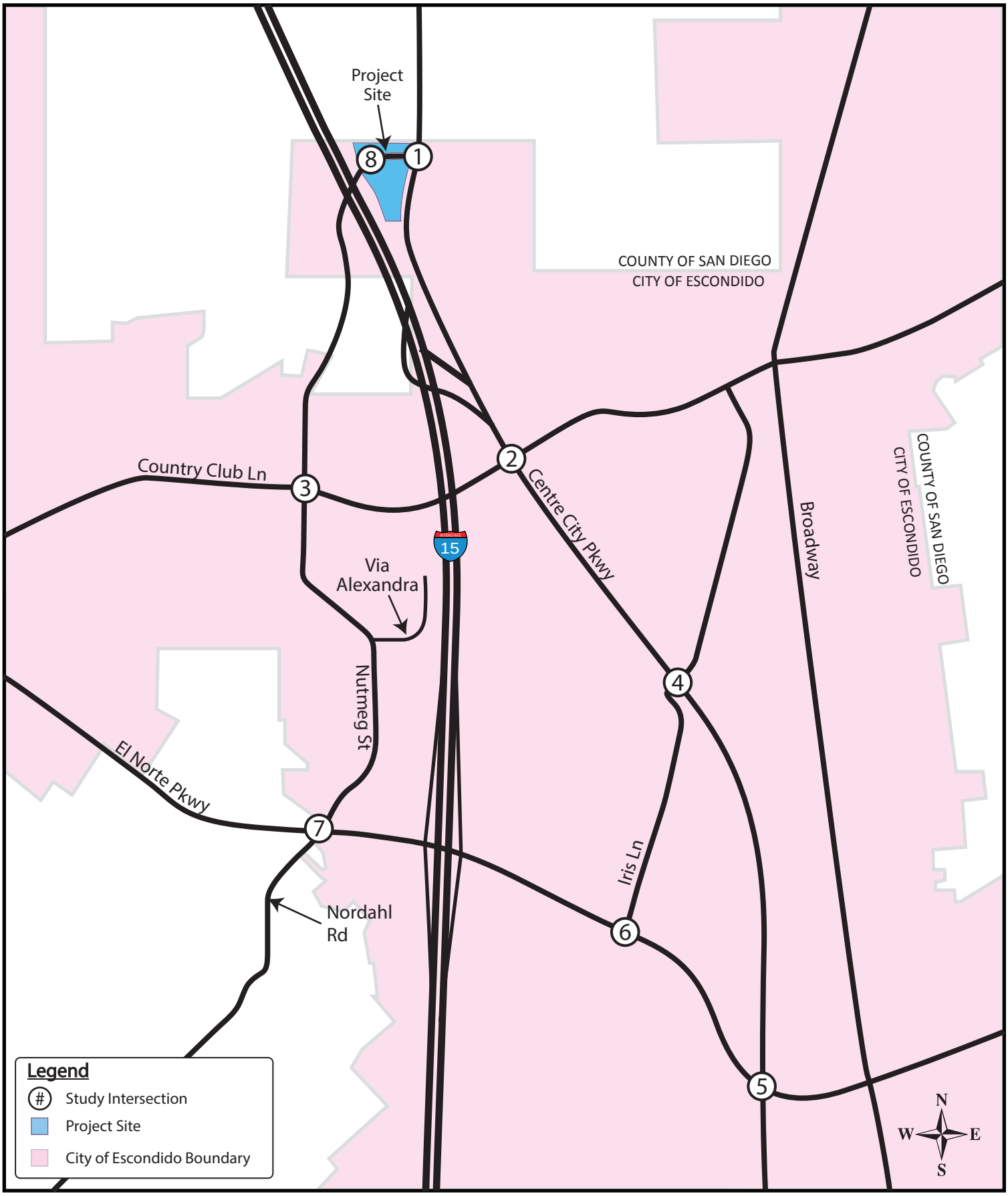

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Exhibit 2-3
Project Study Area

3 ANALYSIS APPROACH AND METHODOLOGY

This section summarizes the analysis approach and methodology used to evaluate the study intersections and roadway segments associated with the proposed project.

3.1 Analysis Timeframes

In accordance with the SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region (March 2000) and the City of Escondido's Traffic Impact Study Guidelines and General Plan, this study analyzes the following study scenarios:

- **Existing Conditions** – Analysis of existing (Year 2017) traffic count volumes, intersection geometry and existing roadway network.

- **Existing Plus Project Conditions** – Analysis of existing traffic volumes overlaid with the forecast project-generated traffic. The existing intersection geometry and roadway network were used in this analysis.

- **Existing Plus Cumulative Conditions Without Project** – Analysis of existing traffic volumes overlaid with traffic associated with approved or pending projects anticipated to be constructed by the project opening year (Year 2020).

- **Existing Plus Cumulative Conditions With Project** – Analysis of existing traffic volumes overlaid with cumulative project traffic and traffic generated by the proposed project.

As indicated in Section 2.2 of the report, the study area includes analysis of intersections and roadway segments along Centre City Parkway. Centre City Parkway is designated as a Congestion Management Program (CMP) Arterial according to the *Final 2008 Congestion Management Program Update* prepared by SANDAG. A CMP analysis is required for all large projects that would generate 2,400 or more daily trips, or 200 or more peak hour trips.

The proposed project would generate a total of 1,096 daily trips, with 88 trips during the AM peak hour and 110 trips during the PM peak hour. The project is estimated to add between 493 and 712 daily trips, between 40 and 57 AM peak hour trips, and between 50 and 67 PM peak hour trips to the study segments of Centre City Parkway between El Norte Parkway and North Nutmeg Street. Therefore, the project would not exceed the thresholds that would require a CMP analysis.

3.2 Methodology

3.2.1 Intersection Delay Analysis

Levels of service (LOS) were determined at the study area intersections for the AM and PM peak hours. The AM intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 7:00 AM and 9:00 AM. The PM intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 4:00 PM and 6:00 PM.

Intersection operations were analyzed based on the 2010 Highway Capacity Manual (HCM) methodology for signalized and unsignalized intersections. The Synchro 9.1 software program was used as an interface for the 2010 HCM methodology.

Signal timing data and parameters such as cycle lengths, splits, clearance intervals, etc. were obtained from the current signal timing sheets provided by the City and calibrated into the Synchro model. Synchro reports delays, which correspond to a particular LOS, to describe the overall operation of an intersection. The criteria for the LOS grade designations are provided in **Table 3-1**. LOS provides a quick overview of how well an intersection is performing. The City of Escondido accepts LOS D or better operations for all signalized and unsignalized intersections during peak traffic periods.

Table 3-1
LOS Criteria for Intersections

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections (a)	Unsignalized Intersections (b)	
A	≤10	≤10	Operations with very low delay and most vehicles do not stop.
B	>10 and ≤20	>10 and ≤15	Operations with good progression but with some restricted movements.
C	>20 and ≤35	>15 and ≤25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35 and ≤55	>25 and ≤35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55 and ≤80	>35 and ≤50	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80	>50	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Source: 2010 Highway Capacity Manual (HCM).

3.1.1 Roadway Segment Capacity Analysis

The basis for analysis of roadway segment performance is provided by LOS standards and thresholds. The LOS analysis considerations include the functional classification of the roadway, maximum capacity, roadway geometrics, and Average Daily Traffic (ADT) volumes. The analysis results provide a quick overview of whether a segment is under, approaching, or over capacity.

A daily roadway segment analysis was conducted for all study area roadways, in accordance with the City of Escondido General Plan Mobility Element and SANTEC/ITE TIS Guidelines. **Table 3-2** presents the roadway segment capacity and LOS standards utilized by the City of Escondido.

Table 3-2
LOS Criteria for Roadway Segments

Classification / Lanes	Level of Service				
	A	B	C	D	E
Prime Arterial / 8	23,2800	37,800	51,800	62,300	70,000
Prime Arterial / 6	20,400	32,400	44,400	53,400	60,000
Major Road / 6	17,000	27,000	37,000	44,500	50,000
Major Road / 4	12,600	20,000	27,400	32,900	37,000
Collector/4 (NP)	11,600	18,500	25,300	30,400	34,200
Collector/4 (WP)	6,800	10,800	14,800	17,800	20,000
Local Collector / 2 NP	5,100	8,100	11,100	13,400	15,000
Local Collector / 2 WP	3,400	5,400	7,400	8,900	10,000

Source: City of Escondido Traffic Impact Analysis Guidelines.
NP: No Parking, WP: With Parking

According to the City of Escondido General Plan Mobility Element Update, the City's goal is LOS C on all roadways and intersections, but where LOS C cannot be attained, LOS D is considered the threshold for determining significant impacts and mitigation.

3.3 Significance Criteria

The City of Escondido has established LOS D as the standard for acceptable intersection and roadway segment operations except for roadways within the Downtown Specific Plan area, where LOS E is the threshold for acceptable roadway and intersection operations.

In accordance with the SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region, the following thresholds shall be used to identify if a project is of significant traffic impact under any scenario. Based on SANTEC/ITE guidelines, if now or in the future, the Project's traffic impact causes the values in **Table 3-3** to be exceeded in a roadway segment or intersection that is operating at LOS D or worse, it is determined to be a significant impact and the Project shall identify mitigation measures.

Table 3-3
City of Escondido Significant Impact Thresholds

Level of Service with Project	Allowable Change due to Project Impact		
	Roadway Segments		Intersections Delay (sec.)
	V/C	Speed (mph)	
D, E, or F	0.02	1	2

Source: City of Escondido Traffic Impact Analysis Guidelines

*No Significant Impact occurs at areas in GP Downtown Specific Area that operates at LOS "D" or better.

*Mitigation measures should also be considered for any segment or intersection operating at LOS "F" subject to less than significant impact.

*V: Volume *C: Capacity (use LOS "E")

The City of Escondido uses the following criteria to determine direct and cumulative traffic impacts:

Direct Impacts

- Project-related traffic results in a change in level of service from acceptable (LOS D or better) to deficient (LOS E or F) at a study intersection or on a roadway segment; OR
- Project-related traffic added to existing traffic volumes results in an increase in delay or v/c ratio exceeding the thresholds shown in Table 3-3 at intersections or roadway segments operating at LOS D, E, or F under both the Existing and Existing Plus Project scenarios.

Cumulative Impacts

- Project-related traffic results in an increase in delay or v/c ratio exceeding the thresholds shown in Table 3-3 at intersections or roadway segments operating at LOS D, E, or F under both the Existing Plus Cumulative and Existing Plus Cumulative Plus Project scenarios.

When a direct impact is identified, the project would be fully responsible for mitigating the impact to restore the deficient intersection or roadway segment to an acceptable LOS.

When a cumulative impact is identified, the project would be responsible for payment of fair share contributions toward intersection or roadway improvements that would improve operations to pre-project or better conditions.

4 EXISTING CONDITIONS

This section summarizes the existing roadway network, peak hour and daily traffic volumes, and operations at the study area intersections and roadway segments.

4.1 Existing Roadway Network

Nutmeg Street is constructed as a two-lane roadway generally oriented in a north-south direction. Nutmeg Street extends from Centre City Parkway to El Norte Parkway. South of El Norte Parkway, Nutmeg Street transitions to Nordahl Road. The City of Escondido General Plan Mobility Element classifies Nutmeg Street as a Local Collector. Parking is generally prohibited except for the segment between Gary Lane and Country Club Lane, and the segment between Country Club Lane and Via Alexandra. The posted speed limit is 35 mph between El Norte Parkway and La Paloma Avenue, and transitions to 25 mph between La Paloma Avenue and Gary Lane. No speed limit is posted between Gary Lane and Centre City Parkway. An approximately 900-foot long segment of Nutmeg Street from Echo Valley Road to just north of Rockhoff Road is located within unincorporated San Diego County. However, most of the 0.8-mile long segment of Nutmeg Street between Centre City Parkway and Country Club Lane is located within the City of Escondido.

Centre City Parkway is constructed as a two-lane roadway north of Country Club Lane and transitions to a four-lane road south of Country Club Lane. Centre City Parkway is generally oriented in a north-south direction extending from the northern City boundary to the southern City boundary. The posted speed limit is 55 mph through the study area. The City of Escondido General Plan Mobility Element classifies Centre City Parkway as a Collector from the northern City boundary to Country Club Lane, and as a Major Road south of Country Club Lane. Centre City Parkway is designated as a Congestion Management Program (CMP) Arterial according to the *Final 2008 Congestion Management Program Update* prepared by SANDAG.

Iris Lane is constructed as a two-lane roadway generally oriented in a north-south direction, extending south from Country Club Lane and terminating at El Norte Parkway. Iris Lane is classified as a Local Collector in the City of Escondido General Plan Mobility Element. The posted speed limit is 35 mph from Country Club Lane to Centre City Parkway. The posted speed limit is 30 mph from Centre City Parkway to El Norte Parkway.

El Norte Parkway is constructed as a four-lane to six-lane roadway generally oriented in an east-west direction, extending from the western City boundary to Valley Parkway near the eastern City boundary. Within the study area, El Norte Parkway is constructed with four travel lanes between I-15 and Iris Lane, and four lanes are provided east of Centre City Parkway. El Norte Parkway is built with six travel lanes between Iris Lane and Centre City Parkway. El Norte Parkway is classified as a Major Road in the Escondido General Plan Mobility Element. The posted speed limit is 45 mph between I-15 and Centre City Parkway, and the posted speed limit is 40 mph east of Centre City Parkway.

Exhibit 4-1 illustrates the existing lane geometrics and controls at the study intersections.

Nutmeg Residential Condominiums Project

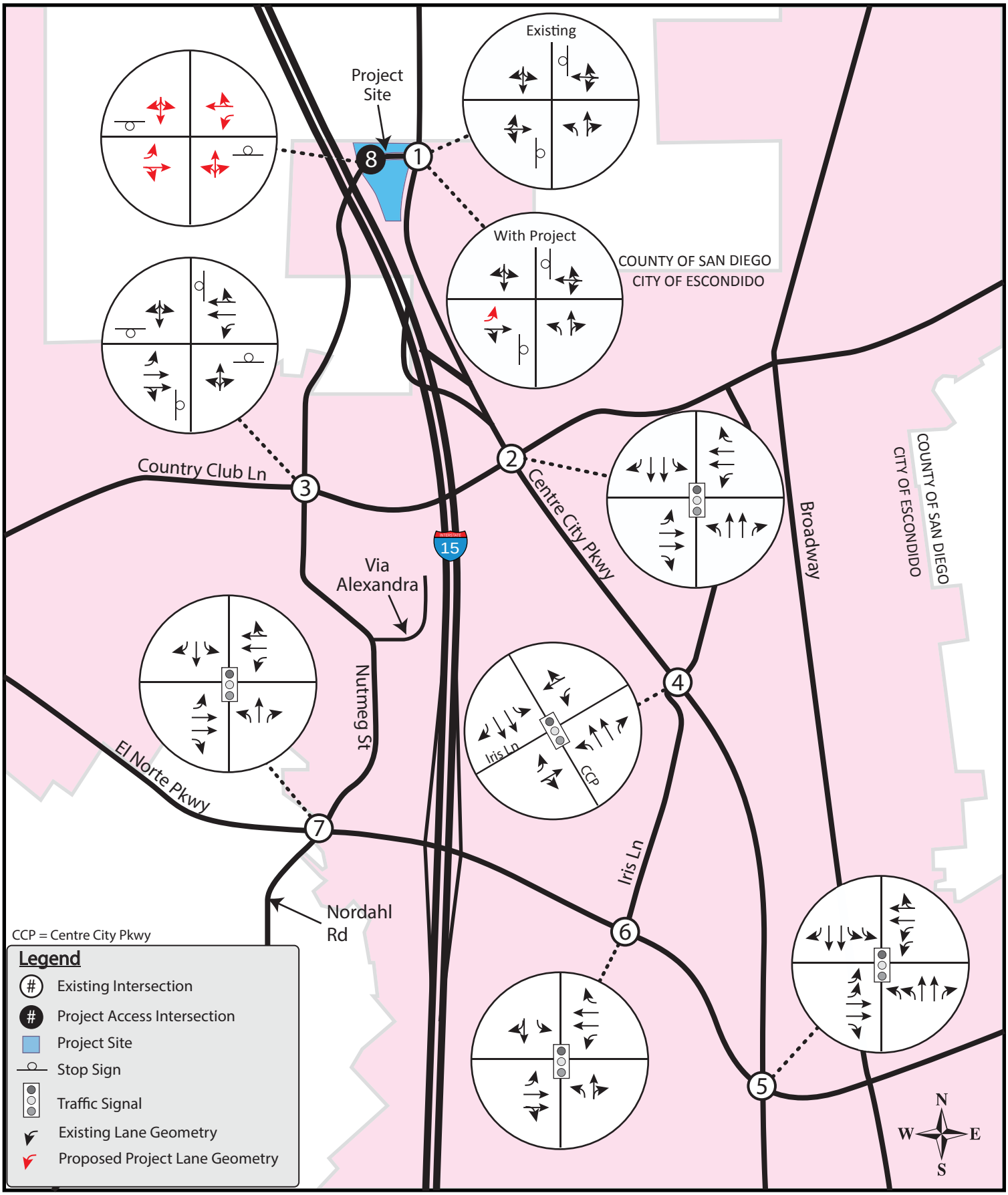

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Exhibit 4-1
Existing Intersection Lane Geometry

4.2 Alternate Modes of Travel

In addition to the vehicular roadway network, alternative modes of travel are provided within the study area and described in more detail below.

4.1.1 Transit Service

North County Transit District (NCTD) operates the local transit service within the City of Escondido. There are currently no transit facilities within walking distance (1/4 of a mile) of the proposed project site. Transit service is available along Country Club Lane. Routes 358/359 operates from Escondido Transit Center to the intersection of El Norte Parkway/Country Club Lane. Headways for east and westbound travel are every hour for both the AM and PM weekday peak hours. Route 358/359 does not operate on Saturdays, Sundays, or holidays.

4.1.2 Pedestrian and Bicycle Access

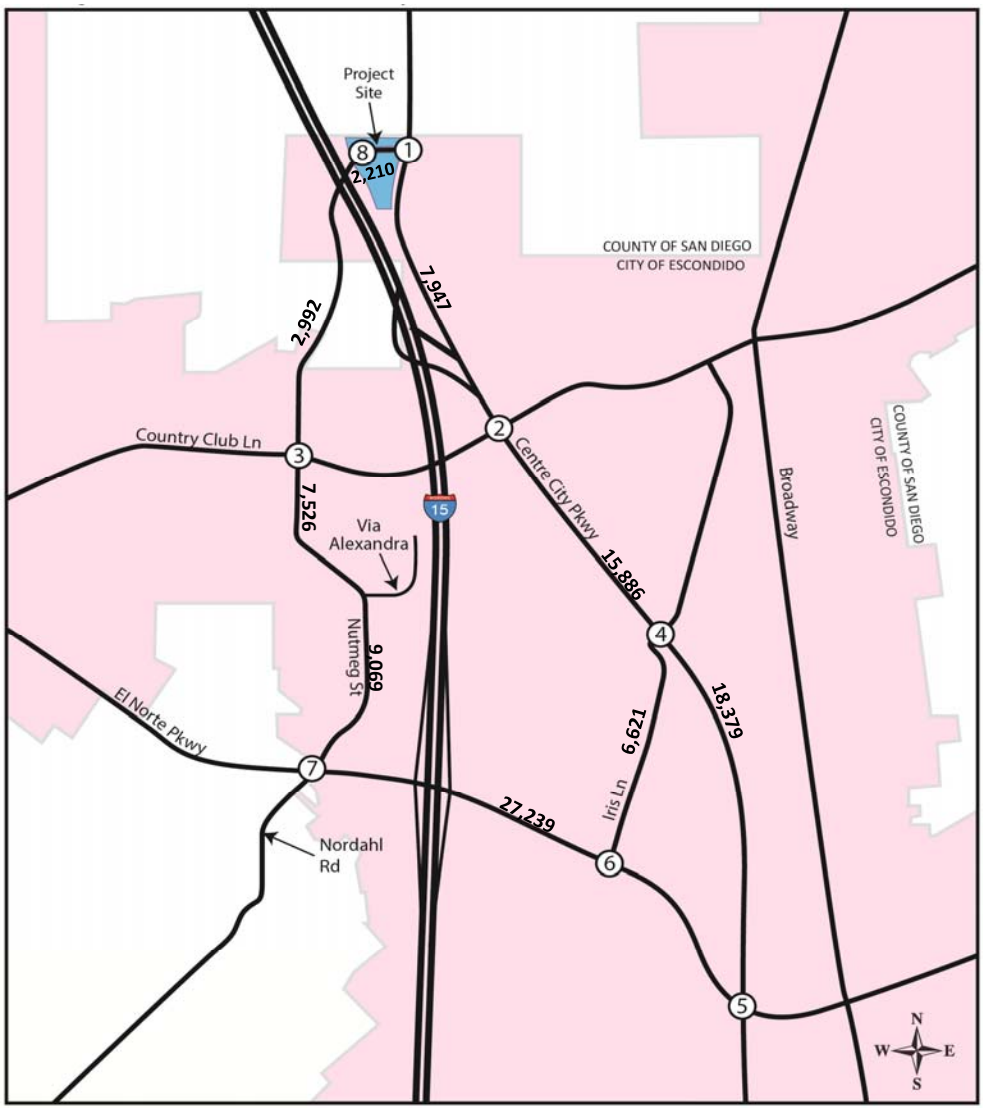
There are no sidewalks provided along Centre City Parkway near the project site or along North Nutmeg Street near the project location. However, the project will construct sidewalks along the project frontage on both sides of North Nutmeg Street.

There are currently Class II bike lanes provided on both sides of Centre City Parkway immediately north of the intersection with Nutmeg Street. There are currently no bicycle facilities provided on North Nutmeg Street from Centre City Parkway to El Norte Parkway. However, Nutmeg Street is proposed as a Class III bike route per the City's Bicycle Master Plan and General Plan Mobility Element. If the City plans to implement a Class III bike route on Nutmeg Street south of the project site prior to occupancy of the proposed project, it is recommended that the project install Class III bike route signage along the project frontage on Nutmeg Street in each direction of travel.

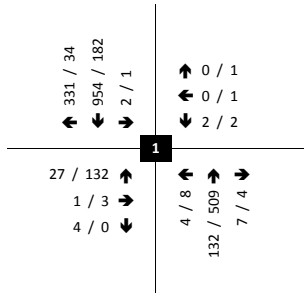
4.3 Traffic Volumes

Traffic volumes at the study area intersections were collected on Tuesday, September 12, 2017 for the AM peak period (7:00 AM to 9:00 AM) and PM peak period (4:00 PM to 6:00 PM) during typical weekday conditions with schools in session. Daily volumes on the study area roadway segments were also collected on Tuesday, September 12, 2017 over a 24-hour period in both directions of travel. The traffic volumes for the intersection of W. El Norte Parkway/ N. Nutmeg Street were provided by City of Escondido Traffic Engineering staff and were collected on Tuesday, May 17, 2016 for the *Escondido Country Club Villages Transportation Impact Analysis* (LLG, June 2017). A growth factor of 4.5% was applied to the 2016 traffic volumes for the W. El Norte Parkway/ N. Nutmeg Street to reflect annual growth of 1.5% from 2016 to 2019 (3 years).

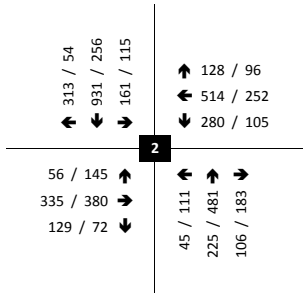
Exhibit 4-2 illustrates the existing conditions peak hour traffic volumes at the study intersections and daily traffic volumes on the study roadway segments. **Appendix A** contains the traffic count data sheets.



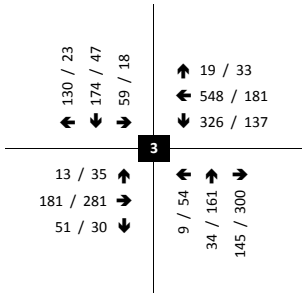
N. Centre City Parkway @ N. Nutmeg Street



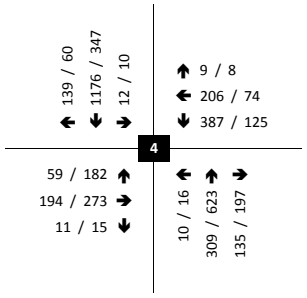
N. Centre City Parkway @ W. Country Club Lane



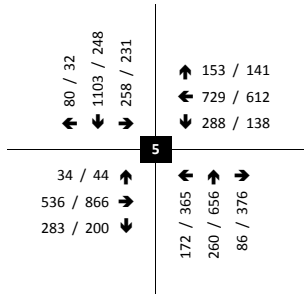
W. Country Club Lane @ N. Nutmeg Street



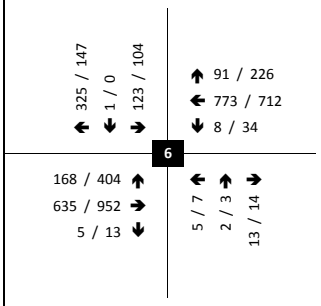
N. Centre City Parkway @ S. Iris Lane



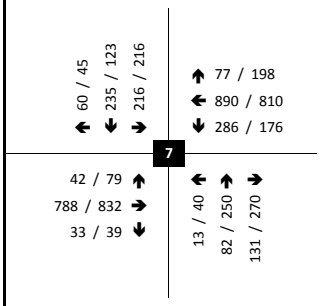
N. Centre City Parkway @ W. El Norte Parkway



W. El Norte Parkway @ S. Iris Lane



W. El Norte Parkway @ Nutmeg Street-Nordahl Road



LEGEND

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

X,XXX = ADT Volume

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Exhibit 4-2

Existing Peak Hour Intersection and Daily Roadway Segment Volumes

4.4 Intersection Analysis

Table 4-1 displays the LOS analysis results for the study intersections under Existing Conditions. **Appendix B** contains the intersection LOS worksheets.

Table 4-1
Existing Peak Hour Intersection LOS Summary

Intersection		Control	Peak Hour	Existing Conditions	
				Delay [(a)]	LOS
1	N. Centre City Parkway/ N. Nutmeg Street	TWSC	AM	**45.3**	**E**
			PM	25.4	D
2	N. Centre City Parkway/ W. Country Club Lane	Signal	AM	34.0	D
			PM	24.3	C
3	W. Country Club Lane/ N. Nutmeg Street	AWSC	AM	29.9	D
			PM	**39.2**	**E**
4	N. Centre City Parkway/ S. Iris Lane	Signal	AM	35.7	D
			PM	17.7	B
5	N. Centre City Parkway/ W. El Norte Parkway	Signal	AM	**60.3**	**E**
			PM	**59.0**	**E**
6	W. El Norte Parkway/ Iris Lane	Signal	AM	27.1	C
			PM	26.0	C
7	W. El Norte Parkway/ N. Nutmeg Street	Signal	AM	36.6	D
			PM	40.7	D

Notes: Deficient intersection delay and LOS indicated in **bold**. AWSC: All-Way Stop Control; TWSC: Two-Way Stop Control
(a) Seconds of delay are reported as the average control delay for the entire intersection at signalized intersections and the worst minor-street movement delay at stop-controlled intersections.

As shown in Table 4-1, the study intersections currently operate at an acceptable LOS (LOS D or better) during the peak hours except for the following intersections that currently operate at a deficient LOS E or F during the peak hours:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (PM: LOS E); and
- N. Centre City Parkway/ W. El Norte Parkway (AM: LOS E, PM: LOS E).

4.5 Roadway Segment Analysis

Table 4-2 summarizes the daily operations of the study area roadway segments under Existing Conditions. As shown in Table 4-2, all study roadway segments are currently operating at acceptable levels of service based on the existing daily volumes and roadway classifications.

Table 4-2
Existing Roadway Daily Segment LOS Summary

Roadway Segment	Classification / No. of Lanes	LOS E Capacity	ADT	v/c Ratio	LOS
N. Nutmeg Street					
N. Centre City Pkwy to Project Access	Local Collector NP (2)	15,000	2,210	0.147	A
Project Access to W. Country Club Ln	Local Collector NP (2)	15,000	2,992	0.199	A
W. Country Club Ln to Via Alexandra	Local Collector WP (2)	10,000	7,526	0.753	D
Via Alexandra to El Norte Pkwy	Local Collector NP (2)	15,000	9,069	0.605	C
N. Centre City Parkway					
N. Nutmeg Street to W. Country Club Lane	Collector (2)*	20,000	7,947	0.397	B
W. Country Club Lane to S. Iris Lane	Major Road (4)	37,000	15,886	0.429	B
S. Iris Lane to W. El Norte Parkway	Major Road (4)	37,000	18,379	0.497	A
S. Iris Lane					
N. Centre City Parkway to W. El Norte Parkway	Local Collector NP (2)	15,000	6,621	0.441	B
W. El Norte Parkway					
S. Iris Lane to 1-15	Major Road (4)	37,000	27,239	0.736	C

Notes: V/C = Volume to Capacity; NP = No Parking; WP = With Parking

*Centre City Parkway is classified as a 4-lane Collector per the City's General Plan, but transitions from 4 lanes to 2 lanes north of the I-15 ramps immediately north of Country Club Lane. The "Collector With Parking" ADT capacity threshold of 20,000 was applied to this segment of Centre City Parkway to reflect the lower daily capacity with 2 lanes versus 4 lanes.

5 PROJECT TRAFFIC

This section describes the proposed project, forecast trip generation, trip distribution, and assignment of trips on the adjacent roadway network.

5.1 Project Description

The project proposes to construct 137 townhome/condominium units on the 7.66-acre project site. The site to the north of Nutmeg Street will be developed with 39 townhome residential units. The site to the south of Nutmeg Street would be developed with 98 townhome residential units.

Currently the site is designated for a Commercial Office use in the City's General Plan, and the project is requesting a zoning and General Plan Amendment to change the General Plan and zoning designation on-site to Urban III-Medium Density Multi-Family Residential (17.89 DU/AC).

The project will take access from Nutmeg Street from two driveways that will be aligned as a four-way intersection, with one driveway provided for the north and south parcels, respectively. The driveway approaches of the project access intersection will be stop-controlled, while the eastbound and westbound approaches on Nutmeg Street will be uncontrolled.

The project will improve Nutmeg Street to its ultimate width as a Local Collector per the City's General Plan Mobility Element (42 feet curb-to-curb), and curbs, gutters and sidewalks will be constructed along the project frontage.

The project access intersection will be striped with left-turn lanes on the eastbound and westbound Nutmeg Street approaches to serve the project driveways. The project will also restripe the eastbound approach of the N. Centre City Parkway / N. Nutmeg Street intersection to provide a dedicated left-turn lane and a shared through/right-turn lane.

5.2 Project Trip Generation

To determine the trips forecast to be generated by the proposed project, SANDAG trip generations rates (April 2002) were utilized in accordance with SANTEC/ITE Traffic Study Guidelines. **Table 5-1** summarizes the trip generation rates used for the proposed condominium units and summarizes the forecast generated by the proposed project.

As shown in Table 5-1, the proposed project is forecast to generate approximately 1,096 trips per day, which includes approximately 88 AM peak hour trips and approximately 110 PM peak hour trips.

Table 5-1
Trip Generation Summary

TRIP GENERATION RATES												
Land Use	**Rate**				**AM PEAK HOUR**				**PM PEAK HOUR**			
Condominiums	8	trips	/	DU	8%	0.20	:	0.80	10%	0.70	:	0.30

TRIP GENERATION CALCULATIONS									
Land Use	**Amount**		**ADT**	**AM PEAK HOUR**			**PM PEAK HOUR**		
				Total	**In**	**Out**	**Total**	**In**	**Out**
Condominiums	137	DU	1,096	88	18	70	110	77	33
Total Project Trips			**1,096**	**88**	**18**	**70**	**110**	**77**	**33**

Source: *SANDAG (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.*
DU = Dwelling Unit

As discussed earlier in this report, the project site was previously approved for a commercial office use. For comparison purposes only, **Table 5-2** provides a trip generation comparison between the previously approved commercial use and the proposed 137 condominium units.

Table 5-2
Trip Generation Comparison: Proposed Project Vs. General Plan Land Uses

TRIP GENERATION RATES												
Land Use	**Rate**				**AM PEAK HOUR**				**PM PEAK HOUR**			
					% of ADT	**In:Out Ratio**			**% of ADT**	**In:Out Ratio**		
Condominiums	8	trips	/	DU	8%	0.20	:	0.80	10%	0.70	:	0.50
Commercial Office	300	trips	/	acre	14%	0.90	:	0.10	13%	0.20	:	0.80

TRIP GENERATION CALCULATIONS									
Land Use	**Amount**		**ADT**	**AM PEAK HOUR**			**PM PEAK HOUR**		
				Total	**In**	**Out**	**Total**	**In**	**Out**
Proposed Project									
Condominiums	137	DU	1,096	88	18	70	110	77	33
TOTAL PROJECT TRIPS			**1,096**	**88**	**18**	**70**	**110**	**77**	**33**
General Plan Land Use									
Commercial Office	7.66	acres	2,298	322	290	28	299	60	239
TOTAL TRIPS			**2,298**	**322**	**290**	**28**	**299**	**60**	**239**
Net Difference (Project – GPLU)			**-1,202**	**-234**	**-272**	**+42**	**-189**	**+17**	**-206**

Source: *SANDAG (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.*
DU = Dwelling Unit
Note: Table 5-2 is provided for informational purposes only and no analysis was conducted that compared the General Plan use with the proposed use.

As shown in Table 5-2, the proposed project would generate approximately 1,202 fewer daily trips, 234 fewer AM peak hour trips, and 189 fewer PM peak hour trips than the previously approved uses for the site.

5.3 Project Trip Distribution

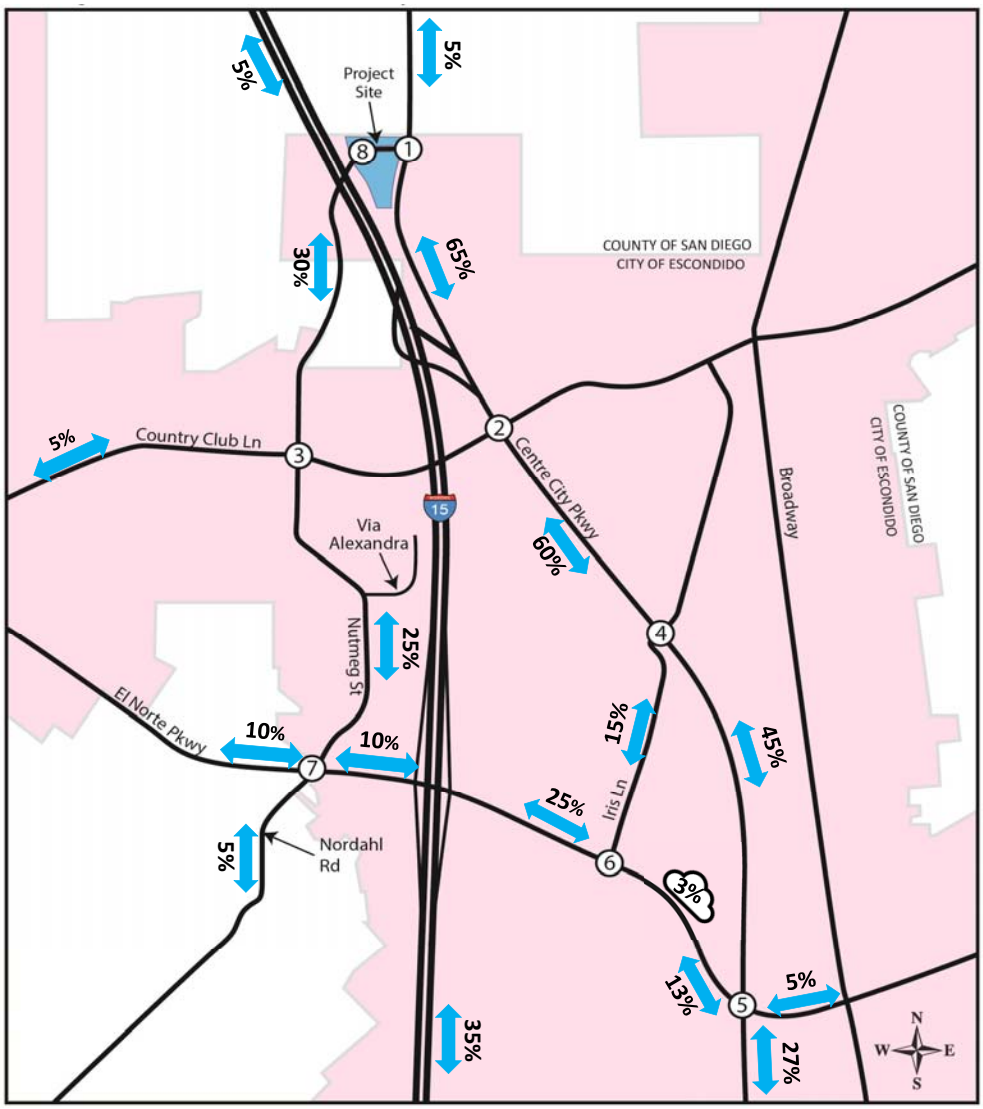
The project trip distribution was developed based on existing travel patterns and access to the major road networks in the study area. Considerations including local land use and local roadway network/freeway access were used in determining the trip distribution. The following list shows the general trip distribution assumed to and from the project site:

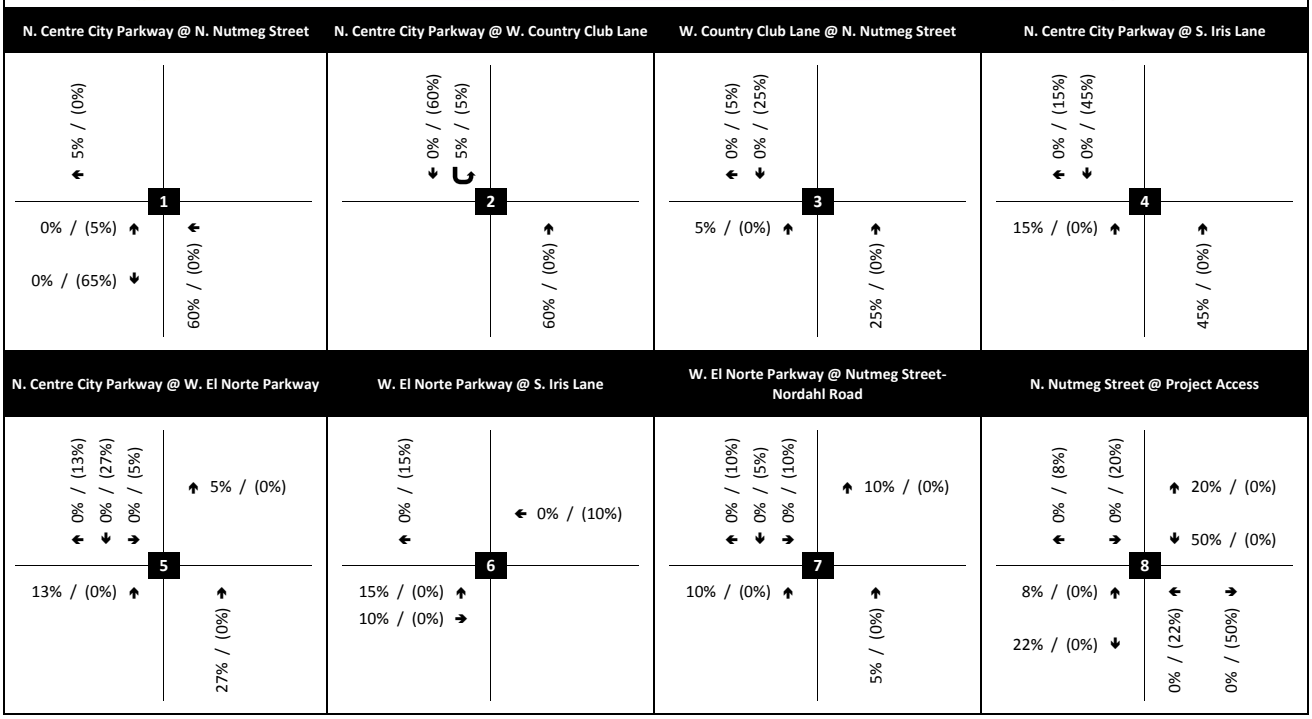
- 15 percent to/from the west
- 10 percent to/from the north
- 75 percent to/from the south

Exhibit 5-1 illustrates the trip distribution for the proposed project at the study intersections. .

5.4 Project Trip Assignment

Based on the trip distribution shown in Exhibit 5-1, project trips were assigned to the study area roadway network. **Exhibit 5-2** illustrates the AM/PM peak hour project trip assignment at the study intersections and the daily project trip assignment on the study roadway segments.





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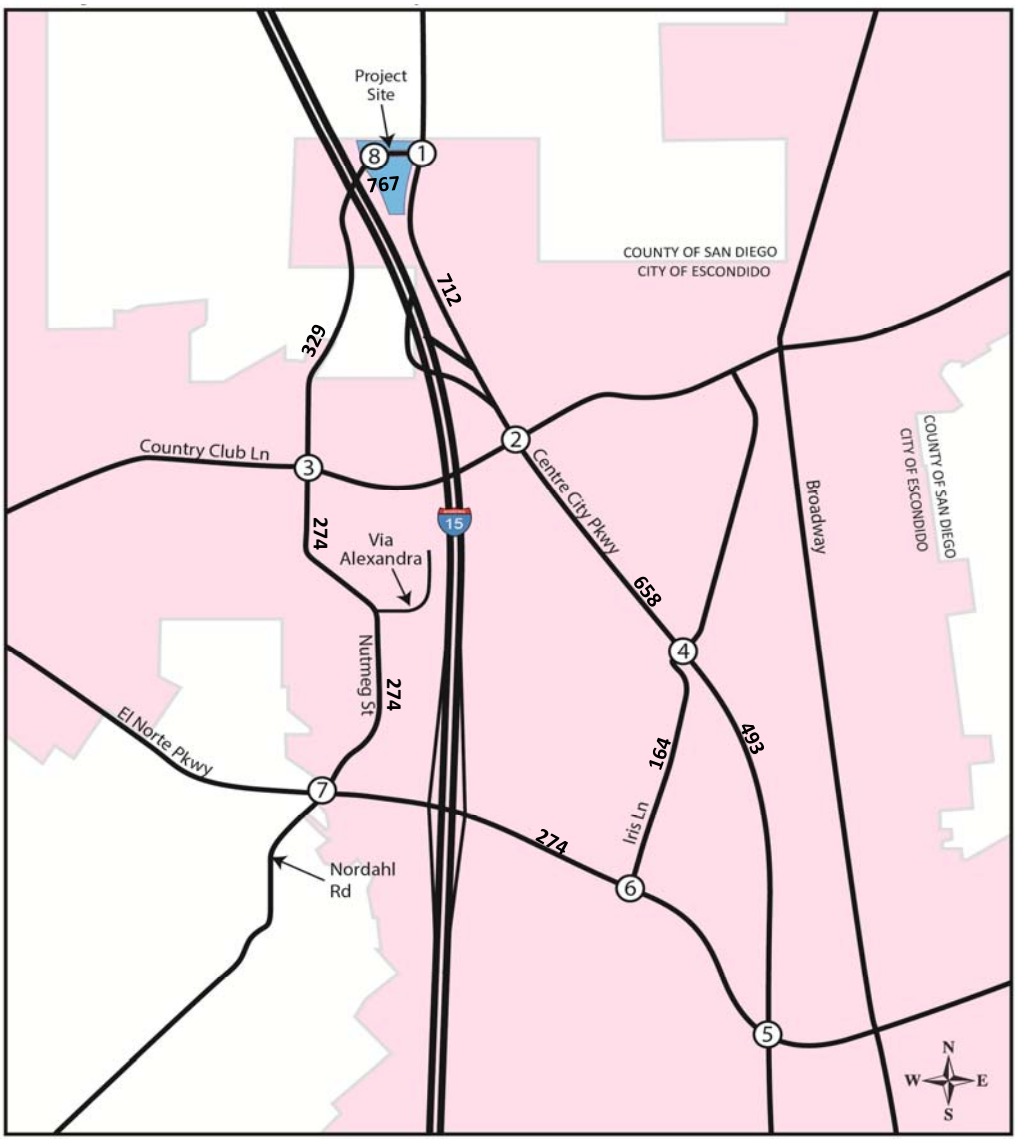
LEGEND

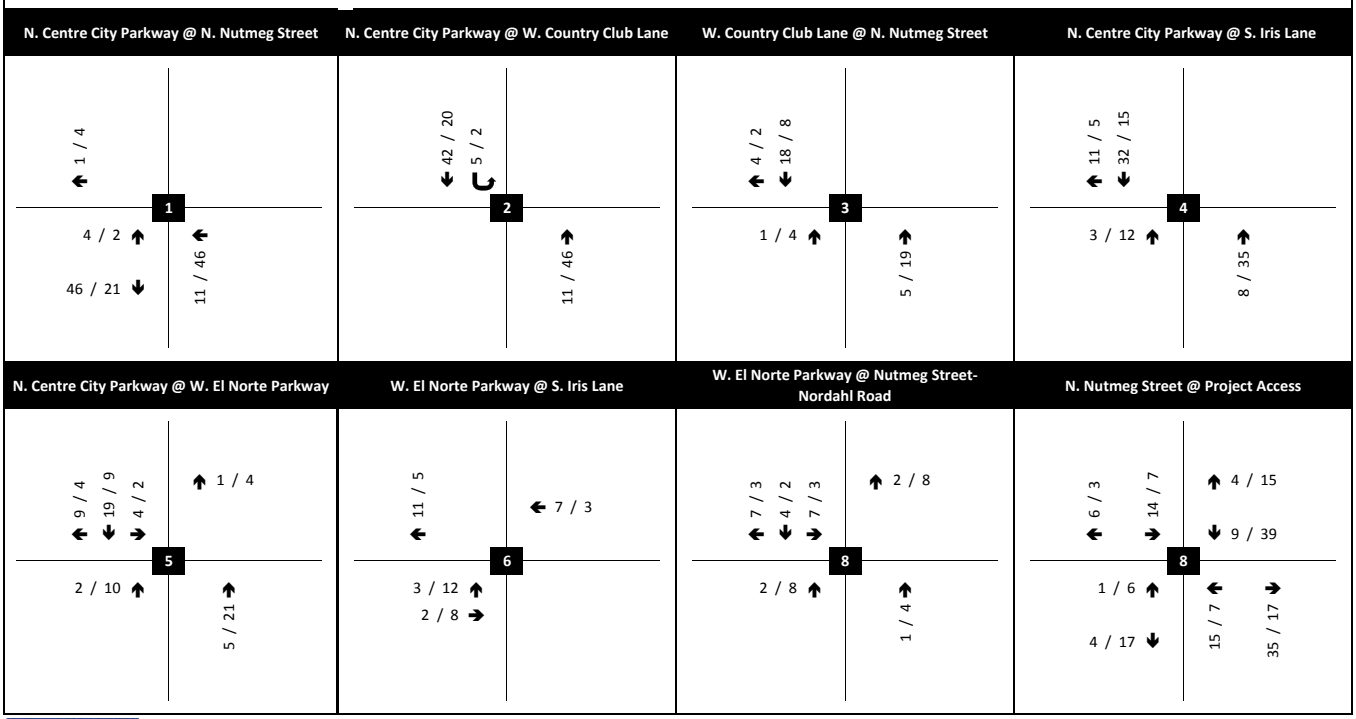
xx% / (yy%) = Inbound % /Outbound %

xx% = Trip Distribution Percentage

Exhibit 5-1

Project Trip Distribution





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LEGEND
xx / yy = AM / PM Peak-Hour Project Trips
X,XXX = ADT Volume

Exhibit 5-2
Peak Hour and Daily Project Trip Assignment

6 EXISTING PLUS PROJECT CONDITIONS

This section provides a summary of operations at the study area intersections and roadway segments with the addition of project traffic.

6.1 Traffic Volumes

Exhibit 6-1 illustrates the Existing Plus Project peak hour traffic volumes at the study intersections and daily traffic volumes at the study roadway segments.

6.2 Intersection Analysis

Table 6-1 displays the LOS analysis results for the study intersections under the Existing Plus Project scenario. **Appendix C** contains the intersection LOS worksheets.

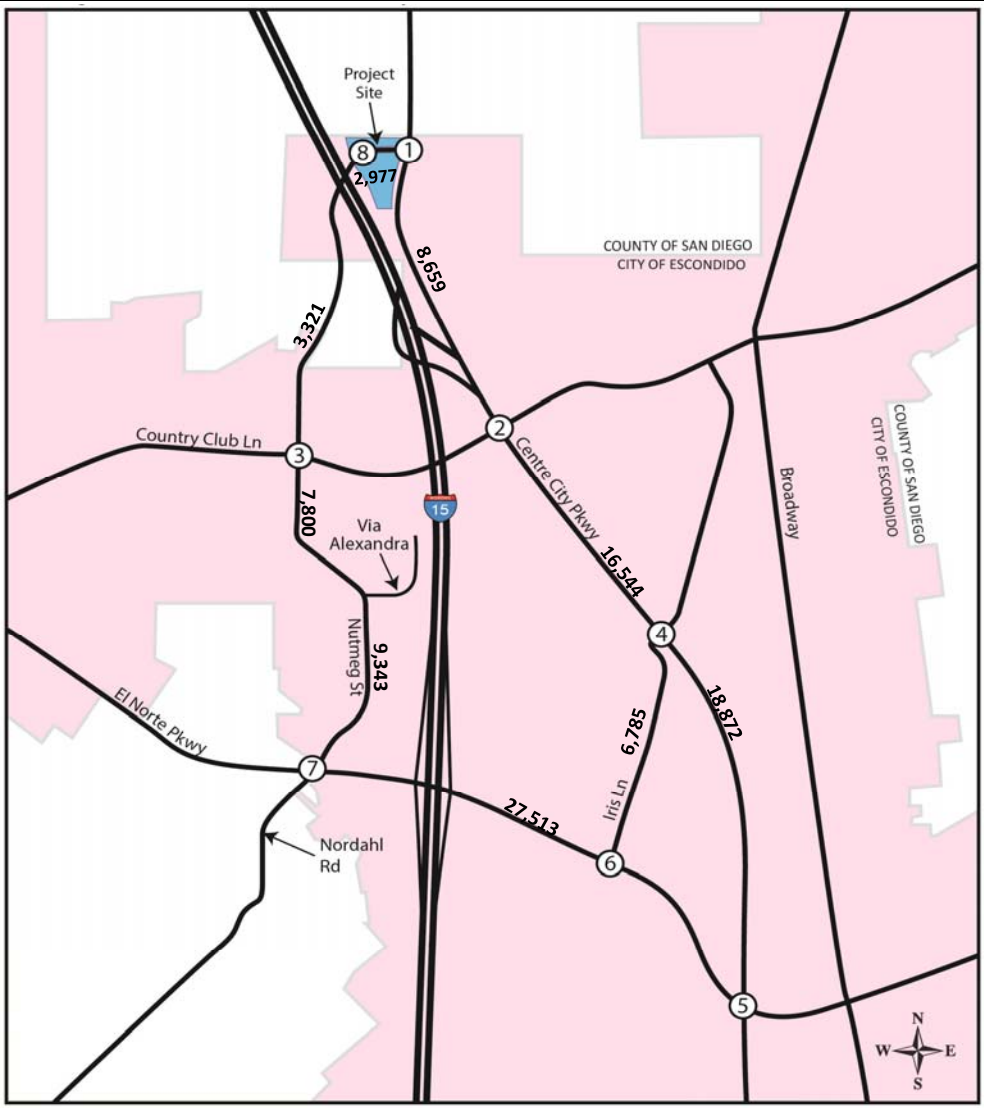
Table 6-1
Existing Plus Project Peak Hour Intersection LOS Summary

	Intersection	Control	Peak Hour	Existing Conditions		Existing Plus Project		Change in Delay
				Delay [a]	LOS	Delay [a]	LOS	
1	N. Centre City Parkway/ N. Nutmeg Street	TWSC	AM	**45.3**	**E**	**53.2**	**F**	**7.9**
			PM	25.4	D	33.5	D	**8.1**
2	N. Centre City Parkway/ W. Country Club Lane	Signal	AM	34.0	C	34.9	C	0.9
			PM	24.3	C	25.1	C	0.8
3	W. Country Club Lane/ N. Nutmeg Street	AWSC	AM	29.9	D	34.7	D	**4.8**
			PM	**39.2**	**E**	**43.3**	**E**	**4.1**
4	N. Centre City Parkway/ S. Iris Lane	Signal	AM	35.7	D	37.0	D	1.3
			PM	17.7	B	18.0	B	0.3
5	N. Centre City Parkway/ W. El Norte Parkway	Signal	AM	**60.3**	**E**	**60.3**	**E**	0.0
			PM	**59.0**	**E**	**58.4**	**E**	-0.6
6	W. El Norte Parkway/ Iris Lane	Signal	AM	27.1	C	27.6	C	0.5
			PM	26.0	C	26.2	C	0.2
7	W. El Norte Parkway/ N. Nutmeg Street	Signal	AM	36.6	D	37.4	D	0.8
			PM	40.7	D	41.4	D	0.7
8	N. Nutmeg Street/Project Access	TWSC	AM	DNE		12.0	B	-
			PM			10.2	B	-

Notes: Deficient intersection delay and LOS indicated in **bold**. Increase in delay in **bold** indicates a project-related significant impact.

DNE = Does not exist. AWSC: All-Way Stop Control; TWSC: Two-Way Stop Control

[a] Seconds of delay are reported as the average control delay for the entire intersection at signalized intersections and the worst minor-street movement delay at stop-controlled intersections.



N. Centre City Parkway @ N. Nutmeg Street

31 / 134 ↑	332 / 38 ←	0 / 1 ↑
1 / 3 →	954 / 182 ↓	0 / 1 ←
50 / 21 ↓	2 / 1 →	2 / 2 ↓
	1	
15 / 54 ←		
132 / 509 ↑		
7 / 4 →		

N. Centre City Parkway @ W. Country Club Lane

56 / 145 ↑	313 / 54 ←	128 / 96 ↑
335 / 380 →	973 / 276 ↓	514 / 252 ←
129 / 72 ↓	166 / 117 →	280 / 105 ↓
	2	
45 / 111 ←		
236 / 527 ↑		
106 / 183 →		

W. Country Club Lane @ N. Nutmeg Street

14 / 39 ↑	134 / 25 ←	19 / 33 ↑
181 / 281 →	192 / 55 ↓	548 / 181 ←
51 / 30 ↓	59 / 18 →	326 / 137 ↓
	3	
9 / 54 ←		
39 / 180 ↑		
145 / 300 →		

N. Centre City Parkway @ S. Iris Lane

62 / 194 ↑	150 / 65 ←	9 / 8 ↑
194 / 273 →	1208 / 362 ↓	206 / 74 ←
11 / 15 ↓	12 / 10 →	387 / 125 ↓
	4	
10 / 16 ←		
317 / 658 ↑		
135 / 197 →		

N. Centre City Parkway @ W. El Norte Parkway

36 / 54 ↑	89 / 36 ←	154 / 145 ↑
536 / 866 →	1122 / 257 ↓	729 / 612 ←
283 / 200 ↓	262 / 233 →	288 / 138 ↓
	5	
172 / 365 ←		
265 / 677 ↑		
86 / 376 →		

W. El Norte Parkway @ S. Iris Lane

171 / 416 ↑	336 / 152 ←	91 / 226 ↑
637 / 960 →	1 / 0 ↓	780 / 715 ←
5 / 13 ↓	123 / 104 →	8 / 34 ↓
	6	
5 / 7 ←		
2 / 3 ↑		
13 / 14 →		

W. El Norte Parkway @ Nutmeg Street-Nordahl Road

44 / 87 ↑	67 / 48 ←	79 / 206 ↑
788 / 832 →	239 / 125 ↓	890 / 810 ←
33 / 39 ↓	223 / 219 →	286 / 176 ↓
	8	
13 / 40 ←		
83 / 254 ↑		
131 / 270 →		

N. Nutmeg Street @ Project Access

1 / 6 ↑	6 / 3 ←	4 / 15 ↑
32 / 135 →	14 / 7 ↓	335 / 43 ←
4 / 17 ↓	→	9 / 39 ↓
	8	
15 / 7 ←		
→		
35 / 17 →		

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LEGEND
xx / yy = AM / PM Peak-Hour Turning Movement Volumes; X,XXX = ADT Volume

Exhibit 6-1

Existing Plus Project Peak Hour Intersection and Daily Roadway Segment Volumes

As shown in Table 6-1, consistent with existing conditions, the following study intersections would continue operating at deficient LOS (LOS E or F) during the peak hours with the addition of project-related traffic to existing traffic volumes:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS F);
- W. Country Club Lane/ N. Nutmeg Street (PM: LOS E); and
- N. Centre City Parkway/ W. El Norte Parkway (AM: LOS E, PM: LOS E).

The forecast increase in delay to the following two intersections would exceed the significance threshold of 2.0 seconds:

- N. Centre City Parkway/ N. Nutmeg Street (AM and PM); and
- W. Country Club Lane/ N. Nutmeg Street (AM and PM).

Therefore, the project would result in direct significant impacts at the two above-listed intersections under Existing Plus Project conditions.

The analysis results shown in Table 6-1 indicate that the forecast delay at the intersection of N. Centre City Parkway/ W. El Norte Parkway would decrease with the addition of project-related traffic to existing PM peak hour traffic volumes. The reason for the decrease in overall intersection delay is because project-related traffic would be added to non-critical movements during the peak hours.

6.3 Roadway Segment Analysis

Table 6-2 summarizes the daily operations of the study area roadway segments under Existing Plus Project conditions. As shown in Table 6-2, consistent with existing conditions, all study roadway segments will continue operating at acceptable levels of service under Existing Plus Project conditions.

Table 6-2 also shows that the increase in v/c ratio associated with the addition of project-related traffic to existing traffic volumes on the segment of N. Nutmeg Street between Country Club Lane and Via Alexandra would exceed the significance threshold of 0.02, resulting in a direct significant impact.

Table 6-2
Existing Plus Project Daily Roadway Segment LOS Summary

Roadway Segment	Classification / No. of Lanes	LOS E Capacity	Existing			Existing Plus Project			□ in V/C	Signifi-cant?
			ADT	v/c Ratio	LOS	ADT	v/c Ratio	LOS		
N. Nutmeg Street										
N. Centre City Pkwy to Project Access	Local Collector NP (2)	15,000	2,210	0.147	A	2,977	0.198	A	0.051	No
Project Access to W Country Club Ln	Local Collector NP (2)	15,000	2,992	0.199	A	3,321	0.221	A	0.022	No
W. Country Club Ln to Via Alexandra	Local Collector WP (2)	10,000	7,526	0.753	D	7,800	0.780	D	**0.027**	**Yes**
Via Alexandra to El Norte Pkwy	Local Collector NP (2)	15,000	9,069	0.605	C	9,343	0.623	C	0.018	No
N. Centre City Parkway										
N. Nutmeg Street to W. Country Club Lane	Collector (2)*	20,000	7,947	0.397	B	8,659	0.433	B	0.036	No
W. Country Club Lane to S. Iris Lane	Major Road (4)	37,000	15,886	0.429	B	16,544	0.447	B	0.018	No
S. Iris Lane to W. El Norte Parkway	Major Road (4)	37,000	18,379	0.497	B	18,872	0.510	B	0.013	No
S. Iris Lane										
N . Centre City Parkway to W. El Norte Parkway	Local Collector NP (2)	15,000	6,621	0.441	B	6,785	0.452	B	0.011	No
W. El Norte Parkway										
S. Iris Lane to 1-15	Major Road (4)	37,000	27,239	0.736	C	27,513	0.744	D	0.007	No

Notes: V/C = Volume to Capacity; NP = No Parking; WP = With Parking

*Centre City Parkway is classified as a 4-lane Collector per the City's General Plan, but transitions from 4 lanes to 2 lanes north of the I-15 ramps immediately north of Country Club Lane. The "Collector With Parking" ADT capacity threshold of 20,000 was applied to this segment of Centre City Parkway to reflect the lower daily capacity with 2 lanes versus 4 lanes.

7 EXISTING PLUS CUMULATIVE CONDITIONS

7.1 Cumulative Projects

To determine the Existing Plus Cumulative conditions in the project study area, forecast project traffic associated with City of Escondido approved or pending projects was added to existing traffic volumes. The City of Escondido provided a list of 13 cumulative projects that would generate traffic into the study area by the project opening year.

The list of cumulative projects and the trips generated by each project are presented in **Table 7-1**. **Appendix D** provides the trip distribution and daily trips for each of the cumulative projects on the study roadway segments.

Table 7-1
Cumulative Projects Trip Generation

ID #	Project Name	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	Inbound	Outbound	Total	Inbound	Outbound
1	Hidden Valley Ranch	1,790	143	43	100	179	125	54
2	Zenner	400	32	10	22	40	28	12
3	1221 Gamble St	30	2	1	1	3	2	1
4	Escondido Country Club- The Villages	4,280	319	97	222	420	293	127
5	Hubbard	120	10	3	7	12	8	4
6	Pradera	700	56	17	39	70	49	21
7	Baker Conway	140	11	3	8	14	10	4
8	Jungman Specifc Plan	688	688	79	55	24	81	30
9	Meadowbrook	396	32	6	26	36	25	11
10	Champine Manor	30	1	1	0	2	1	1
11	Calvin Christian	140	7	4	3	11	5	6
12	United Reformed Church	157	8	5	3	13	7	6
13	Starbucks	1,801	283	147	136	157	82	76
TOTAL CUMULATIVE PROJECT TRIPS		**10,672**	**983**	**392**	**591**	**1,038**	**666**	**372**

Source: City of Escondido Planning Department

As presented in Table 7-1, the cumulative projects within the City of Escondido are forecast to generate approximately 10,672 trips per day, which includes approximately 983 AM peak hour trips and approximately 1,038 PM peak hour trips. **Exhibit 7-1** shows the locations of the cumulative projects. **Exhibit 7-2** illustrates the peak hour and daily cumulative project trips at the study intersections and roadway segments.

Nutmeg Residential Condominiums Project

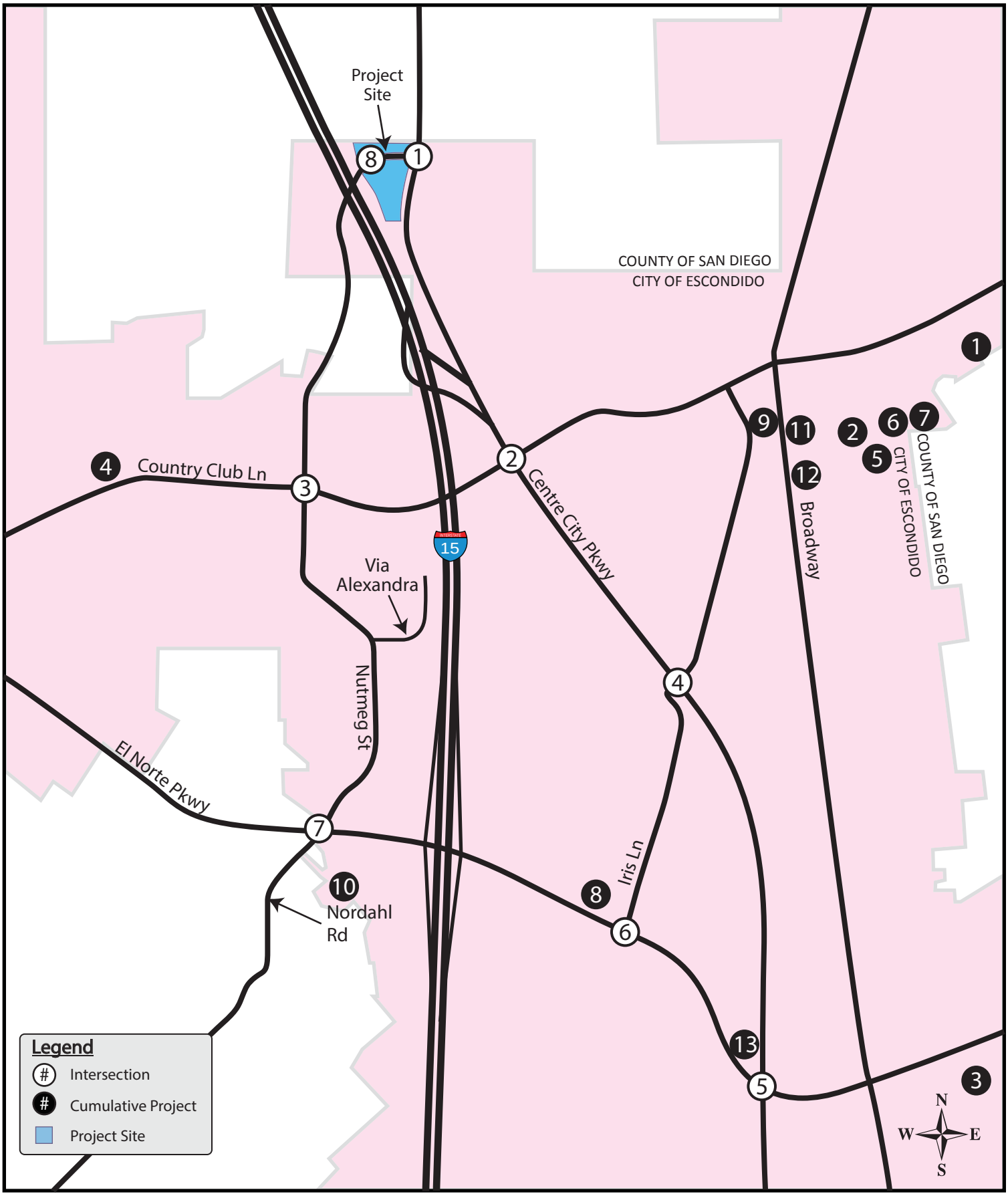

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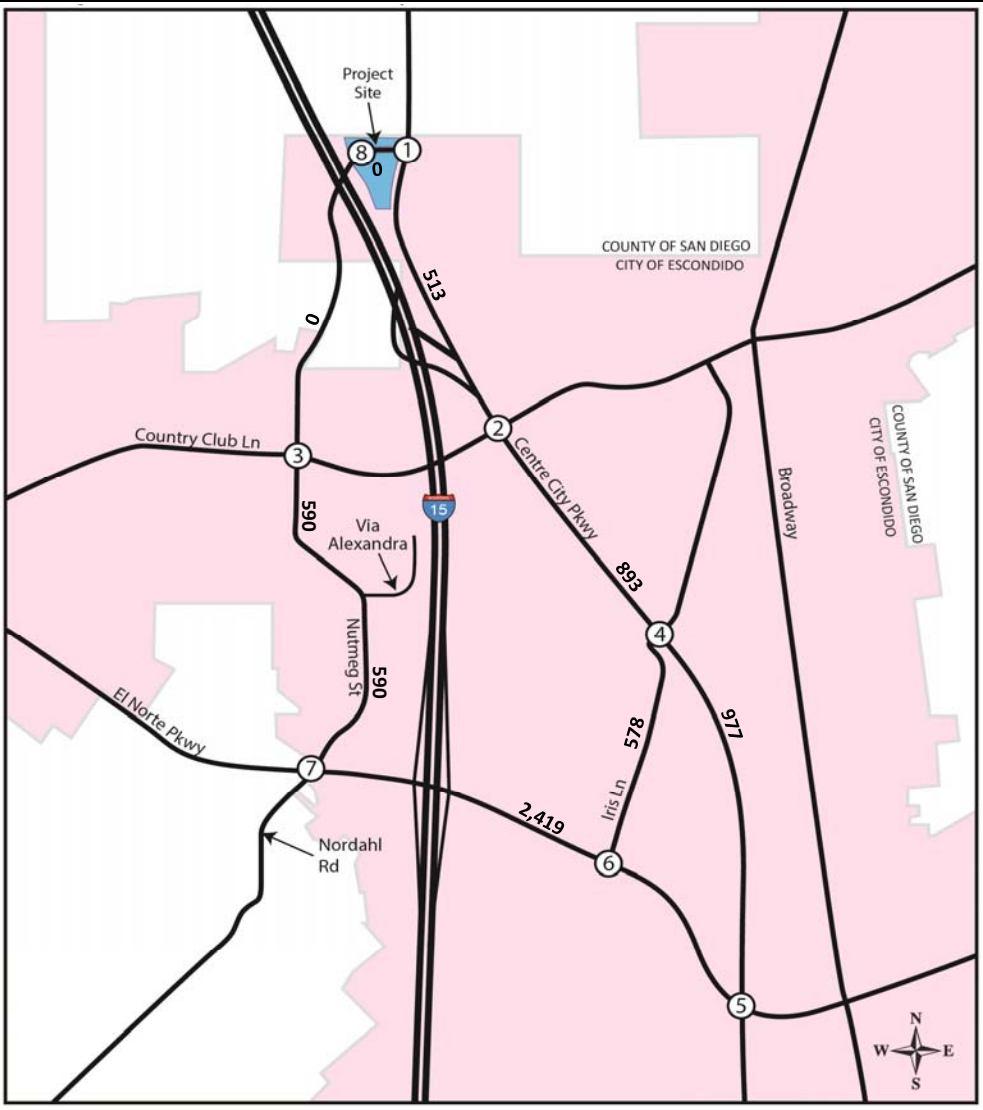
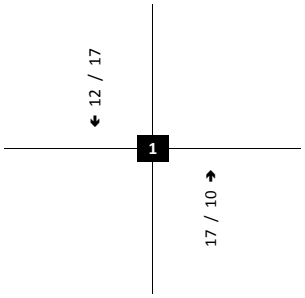
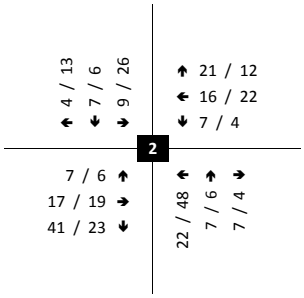
Exhibit 7-1
Cumulative Projects Locations



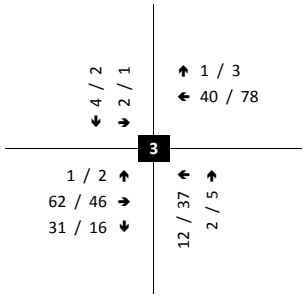
N. Centre City Parkway @ N. Nutmeg Street



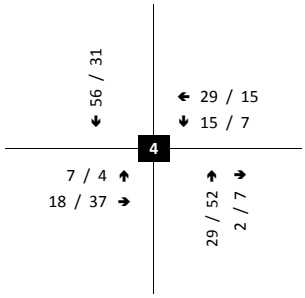
N. Centre City Parkway @ W. Country Club Lane



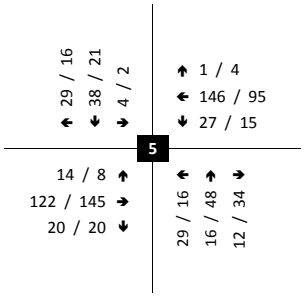
W. Country Club Lane @ N. Nutmeg Street



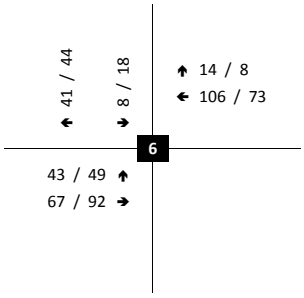
N. Centre City Parkway @ S. Iris Lane



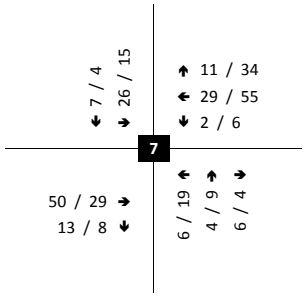
N. Centre City Parkway @ W. El Norte Parkway



W. El Norte Parkway @ S. Iris Lane



W. El Norte Parkway @ Nutmeg Street-Nordahl Road



LEGEND

xx / yy = AM / PM Peak-Hour Cumulative Project Trips

X,XXX = ADT Volume

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Exhibit 7-2

Peak Hour and Daily Cumulative Project Trips

7.2 Roadway Improvements

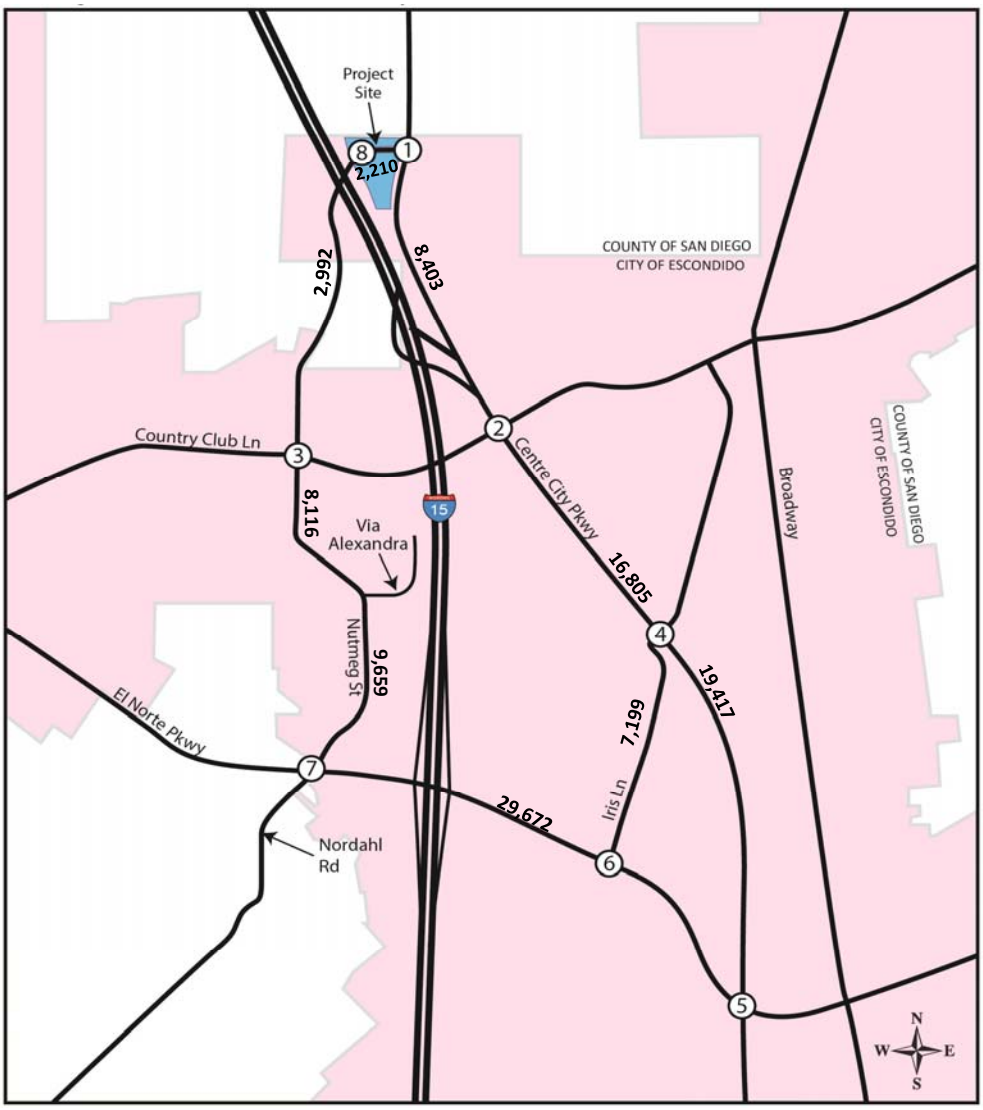
The approved The Villages at Escondido Country Club project, which will construct 392 single-family homes, also includes a Specific Alignment Plan (SAP) as a project design feature that will construct improvements along Country Club Lane from Golden Circle Drive to Nutmeg Street. Below is a list of the roadway and intersection improvements that will be constructed along the Country Club Lane corridor as a part of The Villages project:

- Buffered bike lanes
- Landscaped raised medians
- Raised crosswalks with curb bulbouts and rectangular rapid flashing beacons (RRFBs) or pedestrian hybrid beacons (PHBs)
- Roundabout at Country Club Lane / Golden Circle Drive
- Traffic signal at Country Club Lane / Gary Lane
- Roundabout at Country Club Lane / La Brea Street
- Traffic signal at Country Club Lane / Nutmeg Street

The Villages at Escondido Country Club project was approved in November 2017 and will likely be built and occupied before the proposed Nutmeg Residential Condominiums project is built. However, although the Existing Plus Cumulative conditions analysis includes the traffic volumes that would be generated by The Villages at Escondido Country Club project, it was conservatively assumed that the associated SAP roadway improvements would not be constructed. Therefore, it was assumed that the intersection of Country Club Lane / Nutmeg Street would remain as all-way-stop controlled under Existing Plus Cumulative conditions without and with the proposed project.

7.3 Traffic Volumes

To determine the Existing Plus Cumulative operating conditions in the study area, the cumulative project trips were added to the existing traffic volumes at the study intersection and roadway segment locations. **Exhibit 7-3** illustrate the peak hour and daily traffic volumes at the study intersections and roadway segments under Existing Plus Cumulative Without Project conditions. Existing Plus Cumulative With Project conditions peak hour and daily traffic volumes at the study intersections and roadway segments are illustrated in **Exhibit 7-4**.



N. Centre City Parkway @ N. Nutmeg Street

331 / 34 ←	↑ 0 / 1	
966 / 199 ↓	← 0 / 1	
2 / 1 →	↓ 2 / 2	
27 / 132 ↑	**1**	← 4 / 8 ↑ → 7 / 4
1 / 3 →		149 / 519 ↑
4 / 0 ↓		

N. Centre City Parkway @ W. Country Club Lane

317 / 67 ←	↑ 149 / 108	
938 / 262 ↓	← 530 / 274	
170 / 141 →	↓ 287 / 109	
63 / 151 ↑	**2**	← 67 / 159 ↑ → 113 / 187
352 / 399 →		232 / 487 ↑
170 / 95 ↓		

W. Country Club Lane @ N. Nutmeg Street

130 / 23 ←	↑ 20 / 36	
178 / 49 ↓	← 588 / 259	
61 / 19 →	↓ 326 / 137	
14 / 37 ↑	**3**	← 21 / 91 ↑ → 145 / 300
243 / 327 →		36 / 166 ↑
82 / 46 ↓		

N. Centre City Parkway @ S. Iris Lane

139 / 60 ←	↑ 9 / 8	
1232 / 378 ↓	← 235 / 89	
12 / 10 →	↓ 402 / 132	
66 / 186 ↑	**4**	← 10 / 16 ↑ → 137 / 204
212 / 310 →		338 / 675 ↑
11 / 15 ↓		

N. Centre City Parkway @ W. El Norte Parkway

109 / 48 ←	↑ 154 / 145	
1141 / 269 ↓	← 875 / 707	
262 / 233 →	↓ 315 / 153	
48 / 52 ↑	**5**	← 201 / 381 ↑ → 98 / 410
658 / 1011 →		276 / 704 ↑
303 / 220 ↓		

W. El Norte Parkway @ S. Iris Lane

366 / 191 ←	↑ 105 / 234	
1 / 0 ↓	← 879 / 785	
131 / 122 →	↓ 8 / 34	
211 / 453 ↑	**6**	← 5 / 7 ↑ → 13 / 14
702 / 1044 →		2 / 3 ↑
5 / 13 ↓		

W. El Norte Parkway @ Nutmeg Street-Nordahl Road

60 / 45 ←	↑ 88 / 232	
242 / 127 ↓	← 919 / 865	
242 / 231 →	↓ 288 / 182	
42 / 79 ↑	**7**	← 19 / 59 ↑ → 137 / 274
838 / 861 →		86 / 259 ↑
46 / 47 ↓		

LEGEND

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

X,XXX = ADT Volume

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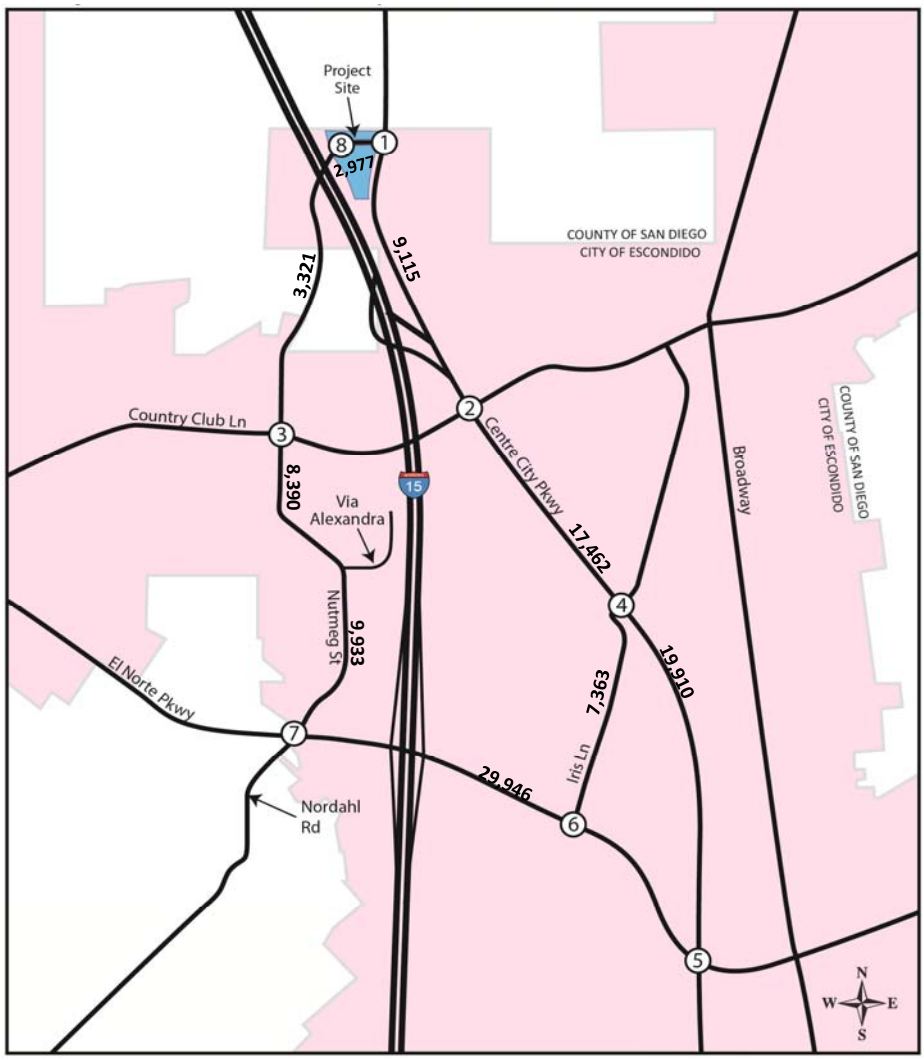
Exhibit 7-3
Existing Plus Cumulative Without Project Peak Hour Intersection and Daily Roadway Segment Volumes



N. Centre City Parkway @ N. Nutmeg Street

332 / 38 ←	↑ 0 / 1	
966 / 199 ↓	← 0 / 1	
2 / 1 →	↓ 2 / 2	
31 / 134 ↑	1	15 / 54 ←
1 / 3 →		149 / 519 ↑
50 / 21 ↓		7 / 4 →

N. Centre City Parkway @ W. Country Club Lane

317 / 67 ←	↑ 149 / 108	
980 / 282 ↓	← 530 / 274	
175 / 143 →	↓ 287 / 109	
63 / 151 ↑	2	67 / 159 ←
352 / 399 →		243 / 533 ↑
170 / 95 ↓		113 / 187 →

W. Country Club Lane @ N. Nutmeg Street

134 / 25 ←	↑ 20 / 36	
196 / 57 ↓	← 588 / 259	
61 / 19 →	↓ 326 / 137	
15 / 41 ↑	3	21 / 91 ←
243 / 327 →		41 / 185 ↑
82 / 46 ↓		145 / 300 →

N. Centre City Parkway @ S. Iris Lane

150 / 65 ←	↑ 9 / 8	
1264 / 393 ↓	← 235 / 89	
12 / 10 →	↓ 402 / 132	
69 / 198 ↑	4	10 / 16 ←
212 / 310 →		346 / 710 ↑
11 / 15 ↓		137 / 204 →

N. Centre City Parkway @ W. El Norte Parkway

118 / 52 ←	↑ 155 / 149	
1160 / 278 ↓	← 875 / 707	
266 / 235 →	↓ 315 / 153	
50 / 62 ↑	5	201 / 381 ←
658 / 1011 →		281 / 725 ↑
303 / 220 ↓		98 / 410 →

W. El Norte Parkway @ S. Iris Lane

377 / 196 ←	↑ 105 / 234	
1 / 0 ↓	← 886 / 788	
131 / 122 →	↓ 8 / 34	
214 / 465 ↑	6	5 / 7 ←
704 / 1052 →		2 / 3 ↑
5 / 13 ↓		13 / 14 →

W. El Norte Parkway @ Nutmeg Street-Nordahl Road

67 / 48 ←	↑ 90 / 240	
246 / 129 ↓	← 919 / 865	
249 / 234 →	↓ 288 / 182	
44 / 87 ↑	7	19 / 59 ←
838 / 861 →		87 / 263 ↑
46 / 47 ↓		137 / 274 →

N. Nutmeg Street @ Project Access

6 / 3 ←	↑ 4 / 15	
14 / 7 →	← 335 / 43	
	↓ 9 / 39	
1 / 6 ↑	8	15 / 7 ←
32 / 135 →		35 / 17 →
4 / 17 ↓		

LEGEND
xx / yy = AM / PM Peak-Hour Turning Movement Volumes; X,XXX = ADT Volume

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Exhibit 7-4

Existing Plus Cumulative With Project Peak Hour Intersection and Daily Roadway Segment Volumes

7.3 Intersection Analysis

Table 7-2 displays the LOS analysis results for the study intersections under Existing Plus Cumulative conditions without and with the proposed project. **Appendix E** contains the intersection LOS worksheets for Existing Plus Cumulative conditions without the project, and the Existing Plus Cumulative With Project conditions intersection LOS worksheets are provided in **Appendix F**.

As shown in Table 7-2, the following study intersections are forecast to operate at a deficient LOS E or F during the peak hours under Existing Plus Cumulative conditions without the project:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (AM: LOS E; PM: LOS F); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

With the addition of project-related traffic to Existing Plus Cumulative conditions traffic volumes, the following intersections are forecast to operate at a deficient LOS E or F during the peak hours:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS F; PM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (AM: LOS E; PM: LOS F); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The forecast increase in delay to the following two intersections forecast to operate at LOS D, E or F would exceed the significance threshold of 2.0 seconds:

- N. Centre City Parkway/ N. Nutmeg Street (AM and PM); and
- W. Country Club Lane/ N. Nutmeg Street (AM and PM).

The addition of project traffic to the N. Centre City Parkway/ N. Nutmeg Street intersection would also result in a change from an acceptable LOS D to a deficient LOS E during the PM peak hour. Therefore, the project would result in a direct significant impact at the N. Centre City Parkway/ N. Nutmeg Street intersection, and would result in a cumulative significant impact at the W. Country Club Lane/ N. Nutmeg Street intersection.

The analysis results shown in Table 7-2 indicate that the forecast delay at the intersection of N. Centre City Parkway/ W. El Norte Parkway would decrease with the addition of project-related traffic to existing PM peak hour traffic volumes. The reason for the decrease in overall intersection delay is because project-related traffic would be added to non-critical movements during the peak hours.

Table 7-2
Existing Plus Cumulative Conditions Without and With Project
Peak Hour Intersection LOS Summary

	Intersection	Control	Peak Hour	EXC Without Project		EXC With Project		Change in Delay
				Delay [a]	LOS	Delay [a]	LOS	
1	N. Centre City Parkway/ N. Nutmeg Street	TWSC	AM	**48.2**	**E**	**57.3**	**F**	**9.1**
			PM	27.0	D	**36.0**	**E**	**9.0**
2	N. Centre City Parkway/ W. Country Club Lane	Signal	AM	36.8	D	37.8	D	1.0
			PM	28.6	C	29.6	C	1.0
3	W. Country Club Lane/ N. Nutmeg Street	AWSC	AM	**41.1**	**E**	**44.8**	**E**	**3.7**
			PM	**59.4**	**F**	**68.6**	**F**	**9.2**
4	N. Centre City Parkway/ S. Iris Lane	Signal	AM	42.4	D	44.1	D	1.7
			PM	19.1	B	19.4	B	0.3
5	N. Centre City Parkway/ W. El Norte Parkway	Signal	AM	**61.8**	**E**	**61.9**	**E**	0.1
			PM	**60.0**	**E**	**59.4**	**E**	-0.6
6	W. El Norte Parkway/ Iris Lane	Signal	AM	31.9	C	33.5	C	1.6
			PM	28.2	C	28.5	C	0.3
7	W. El Norte Parkway/ N. Nutmeg Street	Signal	AM	39.9	D	40.8	D	0.9
			PM	43.2	D	44.1	D	0.9
8	N. Nutmeg Street/Project Access	TWSC	AM	DNE		12.0	B	-
			PM			10.2	B	-

Notes: Deficient intersection delay and LOS indicated in **bold**. Increase in delay in **bold** indicates a project-related significant impact.

DNE = Does not exist. AWSC: All-Way Stop Control; TWSC: Two-Way Stop Control

EXC = Existing Plus Cumulative

[a] Seconds of delay are reported as the average control delay for the entire intersection at signalized intersections and the worst minor-street movement delay at stop-controlled intersections.

7.4 Roadway Segment Analysis

Table 7-3 summarizes the daily operations of the study area roadway segments under Existing Plus Cumulative conditions without and with the proposed project. As shown in Table 7-3, all study roadway segments are forecast to operate at an acceptable LOS D or better under Existing Plus Cumulative conditions both without and with the proposed project.

Table 7-3 also shows that the increase in v/c ratio associated with the addition of project-related traffic to Existing Plus Cumulative traffic volumes on the segment of N. Nutmeg Street between Country Club Lane and Via Alexandra would exceed the significance threshold of 0.02, resulting in a cumulative significant impact.

Table 7-3
Existing Plus Cumulative Conditions Without and With Project
Daily Roadway Segment LOS Summary

Roadway Segment	Classification / No. of Lanes	LOS E Capacity	EXC Without Project			EXC With Project			□ in V/C	Signifi-cant?
			ADT	v/c Ratio	LOS	ADT	v/c Ratio	LOS		
N. Nutmeg Street										
N. Centre City Pkwy to Project Access	Local Collector NP (2)	15,000	2,210	0.147	A	2,977	0.198	A	0.051	No
Project Access to W Country Club Ln	Local Collector NP (2)	15,000	2,992	0.199	A	3,321	0.221	A	0.022	No
W. Country Club Ln to Via Alexandra	Local Collector WP (2)	10,000	8,116	0.812	D	8,390	0.839	D	**0.027**	**Yes**
Via Alexandra to El Norte Pkwy	Local Collector NP (2)	15,000	9,659	0.644	C	9,933	0.662	C	0.018	No
N. Centre City Parkway										
N. Nutmeg Street to W. Country Club Lane	Collector (2)	20,000	8,403	0.420	B	9,115	0.456	B	0.036	No
W. Country Club Lane to S. Iris Lane	Major Road (4)	37,000	16,805	0.454	B	17,462	0.472	B	0.018	No
S. Iris Lane to W. El Norte Parkway	Major Road (4)	37,000	19,417	0.525	B	19,910	0.538	B	0.013	No
S. Iris Lane										
N. Centre City Parkway to W. El Norte Parkway	Local Collector NP (2)	15,000	7,199	0.480	B	7,363	0.491	B	0.011	No
W. El Norte Parkway										
S. Iris Lane to 1-15	Major Road (4)	37,000	29,672	0.802	D	29,946	0.809	D	0.007	No

Notes: EXC = Existing Plus Cumulative; V/C = Volume to Capacity; NP = No Parking; WP = With Parking

*Centre City Parkway is classified as a 4-lane Collector per the City's General Plan, but transitions from 4 lanes to 2 lanes north of the I-15 ramps immediately north of Country Club Lane. The "Collector With Parking" ADT capacity threshold of 20,000 was applied to this segment of Centre City Parkway to reflect the lower daily capacity with 2 lanes versus 4 lanes

8 SIGNAL WARRANT ANALYSIS

A signal warrant analysis was conducted at the following two (2) unsignalized intersections to determine if existing and/or future traffic volumes at the intersections would justify installation of traffic signals:

- N. Centre City Parkway/ N. Nutmeg Street
- W. Country Club Lane/ N. Nutmeg Street

The signal warrant analysis for N. Centre City Parkway/ N. Nutmeg Street and W. Country Club Lane/ N. Nutmeg Street was performed all analysis scenarios without and with the proposed project.

The signal warrant analysis was performed in accordance with the 2014 California Manual on Uniform Traffic Devices (MUTCD). The signal warrants, if satisfied, provide justification for the installation of a traffic signal, but would not require the installation of a signal. The following individual signal warrants from Chapter 4C (Traffic Control Signal Needs Studies) of the 2014 California MUTCD were performed in this study:

- Warrant 3: Peak Hour (Part A and Part B)

Satisfaction of either Part A or Part B satisfies the Peak Hour Warrant. Due to the all-way stop control at the W. Country Club Lane/ N. Nutmeg Street intersection, traffic speeds were not considered and the conservative "70% Factor" threshold was not applied at that intersection.

The "70% Factor" threshold was applied to the N. Centre City Parkway/ N. Nutmeg Street intersection since the posted speed limit on N. Center Centre City Parkway (55 mph) exceeds 40 mph.

The findings of the traffic signal warrant analysis are summarized in **Table 8-1**. **Appendix G** contains the signal warrant worksheets.

Table 8-1 shows that at the intersection of N. Centre City Parkway/ N. Nutmeg Street, either Part A or Part B (or both) of the peak hour warrant were satisfied under the following analysis scenarios:

- Existing Conditions (PM: Part B)
- Existing Plus Project Conditions (AM/PM: Part B)
- Existing Plus Cumulative Without Project Conditions (PM: Part B)
- Existing Plus Cumulative With Project Conditions (AM/PM: Part B)

Table 8-1 also shows that at the intersection of W. Country Club Lane/ N. Nutmeg Street, either Part A or Part B (or both) of the peak hour warrant were satisfied under the following analysis scenarios:

- Existing Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Project Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Cumulative Without Project Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Cumulative With Project Conditions (AM/PM: Part A; AM/PM: Part B)

Table 8-1
Signal Warrant Analysis

Intersection	Peak Hour	Peak Hour Warrant							
		Existing		Existing + Project		Ex+Cum w/o Project		Ex+Cum w/ Project	
		Part A	Part B	Part A	Part B	Part A	Part B	Part A	Part B
N. Centre City Parkway/ N. Nutmeg Street	AM	NO	NO	NO	**YES**	NO	NO	NO	**YES**
	PM	NO	**YES**	NO	**YES**	NO	**YES**	NO	**YES**
W. Country Club Lane/ N. Nutmeg Street	AM	NO	**YES**	NO	**YES**	NO	**YES**	**YES**	**YES**
	PM	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

Source: California MUTCD 2014 Edition
Ex+Cum = Existing Plus Cumulative

9 SIGNIFICANT IMPACTS AND RECOMMENDED MITIGATION

As presented earlier in this report, the City of Escondido considers the following criteria to determine direct and cumulative significant traffic impacts:

Direct Impacts

- Project-related traffic results in a change in level of service from acceptable (LOS D or better) to deficient (LOS E or F) at a study intersection or on a roadway segment; OR
- Project-related traffic added to existing traffic volumes results in an increase in delay or v/c ratio exceeding the thresholds shown in Table 3-3 at intersections or roadway segments operating at LOS D, E, or F under both the Existing and Existing Plus Project scenarios.

Cumulative Impacts

- Project-related traffic results in an increase in delay or v/c ratio exceeding the thresholds shown in Table 3-3 at intersections or roadway segments operating at LOS D, E, or F under both the Existing Plus Cumulative and Existing Plus Cumulative Plus Project scenarios.

When a direct impact is identified, the project would be fully responsible for mitigating the impact to restore the deficient intersection or roadway segment to an acceptable LOS.

When a cumulative impact is identified, the project would be responsible for payment of fair share contributions toward intersection or roadway improvements that would improve operations to pre-project or better conditions.

The proposed project's traffic impacts and recommended mitigation measures are described in detail below:

Existing Plus Project Conditions: Significant Impacts and Recommended Mitigation

The results of the Existing Plus Project Conditions analysis show that the addition of project-related traffic to the existing traffic volumes at the following two intersections would result in significant impacts:

- N. Centre City Parkway/ N. Nutmeg Street (AM/PM: Direct Impact)
- W. Country Club Lane/ N. Nutmeg Street (AM/PM: Direct Impact)

Therefore, mitigation measures are required at the two above-listed intersections under Existing Plus Project conditions.

Existing Plus Cumulative With Project Conditions: Significant Impacts and Recommended Mitigation

The findings of the Existing Plus Cumulative With Project Conditions analysis show that the addition of project-related traffic to the following two intersections would result in significant impacts:

- N. Centre City Parkway/ N. Nutmeg Street (AM: Cumulative Impact; PM: Direct Impact)
- W. Country Club Lane/ N. Nutmeg Street (AM/PM: Cumulative Impact)

Therefore, mitigation measures are required at the two above-listed intersections under Existing Plus Cumulative With Project conditions.

The following improvements are recommended to mitigate the identified significant impacts under Existing Plus Project and Existing Plus Cumulative Plus Project conditions:

MITIGATION MEASURE 1: N. Centre City Parkway/ N. Nutmeg Street

- Install a traffic signal at the intersection. Restripe the southbound approach to provide a dedicated left-turn lane, and construct a dedicated right-turn lane on the southbound approach to the satisfaction of the City engineer.

MITIGATION MEASURE 2: W. Country Club Lane/ N. Nutmeg Street

- Install a traffic signal at the intersection and restripe the southbound approach to provide a shared left-turn/through lane and a dedicated right-turn lane to the satisfaction of the City engineer.

MITIGATION MEASURE 3: N. Nutmeg Street, from W. Country Club Lane to Via Alexandra

- Widen the existing roadway between La Paloma Avenue and Via Alexandria to provide for a 14' wide southbound lane with curb, gutter and sidewalk designed as a green streets facility. Improvements shall include removal and reconstructions of existing driveways to private driveway standards and a parking restriction along the improved section of Nutmeg Street to the satisfaction of the City Engineer.

The recommended improvements as described above are also illustrated graphically in **Exhibit 9-1**. A conceptual design plan for the recommended mitigation measures at the N. Centre City Parkway/N. Nutmeg Street intersection is provided as **Exhibit 9-2**.

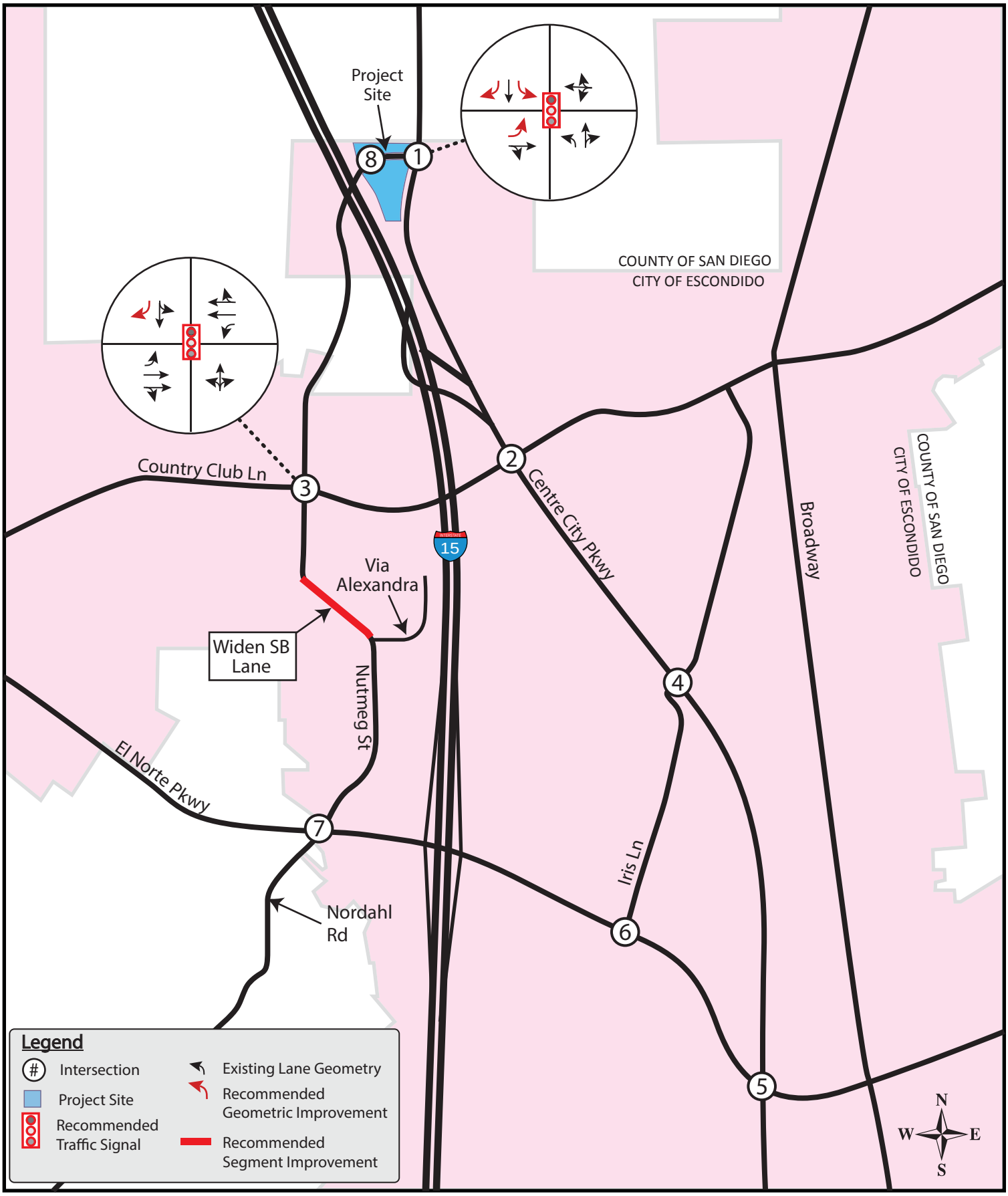
Table 9-1 summarizes the recommended mitigation measures for the identified locations that are significantly impacted by the proposed project.

As discussed earlier in Chapter 7 of the report, the approved The Villages at Escondido Country Club project will install a traffic signal at the intersection of W. Country Club Lane / N. Nutmeg Street as a project design feature. However, the Existing Plus Cumulative analysis conservatively assumed that The Villages at Escondido Country Club project was built but that the traffic signal at W. Country Club Lane / N. Nutmeg Street was not installed.

Therefore, if the proposed project is built before The Villages at Escondido Country Club project, the proposed project shall install the traffic signal and associated intersection improvements at the W. Country Club Lane / N. Nutmeg Street intersection. If The Villages at Escondido Country Club project and traffic signal at the W. Country Club Lane / N. Nutmeg Street intersection are built first, no mitigation at this intersection would be required for the proposed project.

The approved The Villages at Escondido Country Club project is required to construct the improvements on southbound N. Nutmeg Street between La Paloma Avenue and Via Alexandra to mitigate that project's impact on the segment of N. Nutmeg Street from W. Country Club Lane to Via Alexandra. However, if the proposed project is completed before The Villages at Escondido Country Club project, the proposed project will construct the improvements.

Nutmeg Residential Condominiums Project



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Traffic Division

Exhibit 9-1
Recommended Mitigation Measures

PROPOSED PHASE DIAGRAM			
Ø1	Ø2	Ø3	Ø4
*		NOT USED	NOT USED
Ø5	Ø6	Ø7	Ø8

* LAG LEFT TURN PHASE

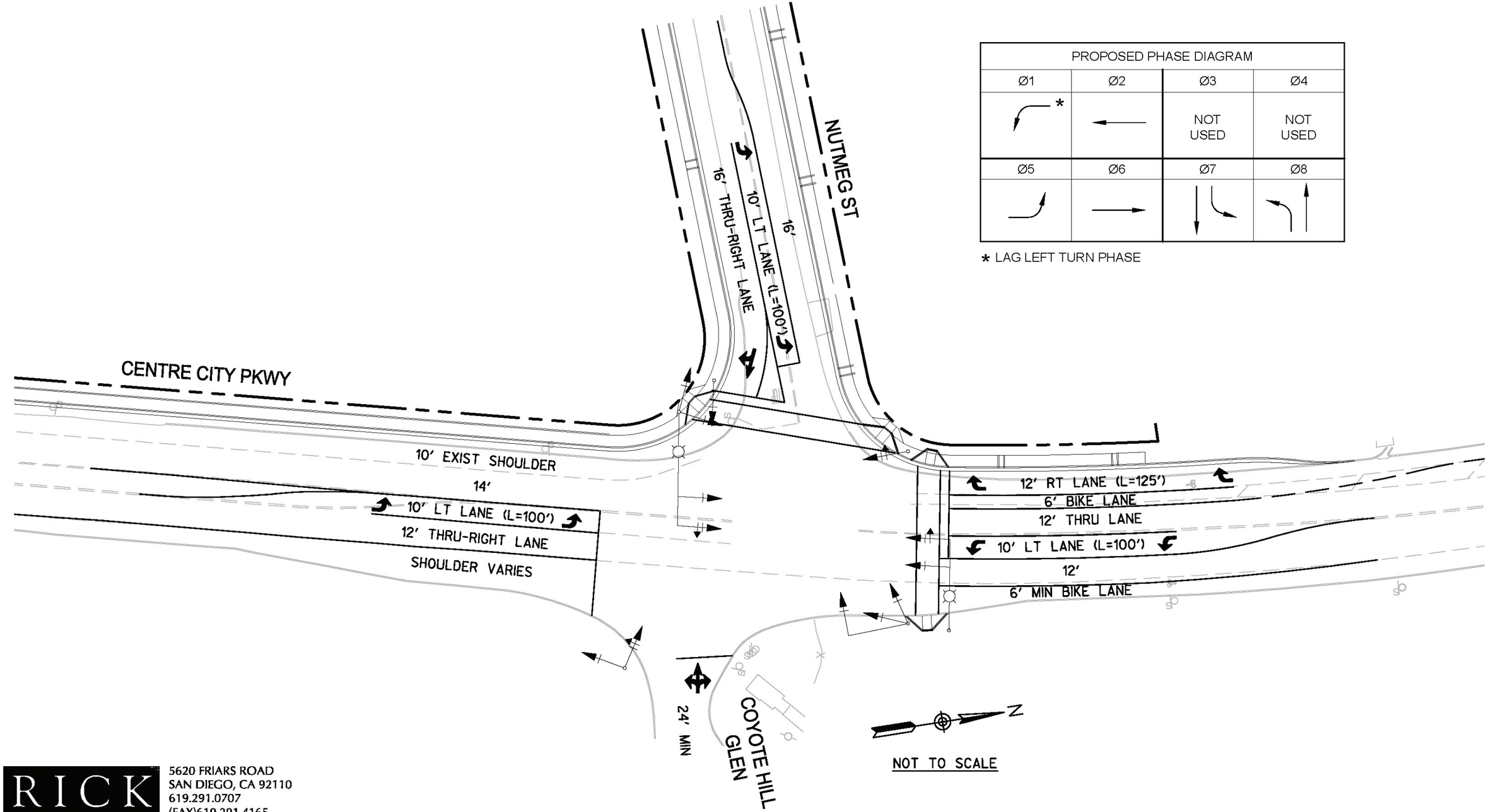

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Exhibit 9-2
Conceptual Design Plan for N. Centre City Parkway / N. Nutmeg Street

Table 9-1
Summary of Mitigation Measures

Intersection or Segment	Peak Hour	Significant Impacts		Recommended Mitigation	Project Responsibility (%)
		EXP	EXCP		
Intersections					
N. Centre City Parkway / N. Nutmeg Street	AM	Direct	Cumulative	Install a traffic signal. Restripe the southbound approach to provide a dedicated left-turn lane, and construct a dedicated right-turn lane on the southbound approach to the satisfaction of the City engineer. [(a)]	**100%**
	PM	Direct	Direct		
W. Country Club Lane / N. Nutmeg Street	AM	Direct	Cumulative	Install a traffic signal and restripe the southbound approach to provide a shared left-turn/through lane and a dedicated right-turn lane to the satisfaction of the City engineer.	**100%**
	PM	Direct	Cumulative		
Roadway Segments					
N. Nutmeg Street from W. Country Club Lane to Via Alexandra		Direct	Cumulative	Widen the existing roadway between La Paloma Avenue and Via Alexandria to provide for a 14' wide southbound lane with curb, gutter and sidewalk designed as a green streets facility. Improvements shall include removal and reconstructions of existing driveways to private driveway standards and a parking restriction along the improved section of Nutmeg Street to the satisfaction of the City Engineer.	**100%**

EXP = Existing Plus Project

EXCP = Existing Plus Cumulative Plus Project

[(a)] The recommended improvements on the southbound approach of the intersection may be partially within the County of San Diego's jurisdiction, and an encroachment permit will need to be obtained to perform the work to construct the recommended right-turn lane and restriping to provide a dedicated left-turn lane on the southbound approach.

Intersection operations with the recommended mitigation measures are presented in **Table 9-2**. As shown in Table 9-2, the recommended mitigation measures would improve operations at the significantly impacted intersections to an acceptable LOS D or better during the peak hour(s) in which the impact is forecast to occur.

A queuing analysis was performed for the N. Centre City Parkway/ N. Nutmeg Street intersection during the peak hours under Existing Plus Cumulative Plus Project conditions to determine the storage length needs of the left-turn and right-turn lanes with the recommended mitigation measures. The SimTraffic traffic simulation application included in the Synchro software program was used to perform the queuing analysis.

Based on the forecast 95th percentile queue lengths with the recommended mitigation measures, a minimum storage length of **100 feet** would need to be provided for the eastbound left-turn lane at the N. Centre City Parkway / N. Nutmeg Street intersection. A minimum storage length of **125 feet** would need to be provided for the recommended southbound right-turn lane at the N. Centre City Parkway / N. Nutmeg Street intersection. Although little to no queuing is forecast to occur for the southbound left-turn movement at the N. Centre City Parkway / N. Nutmeg Street intersection, a minimum storage length of **100 feet** is recommended due to the relatively high vehicular speeds on Centre City Parkway. The Synchro/SimTraffic queuing worksheets for the N. Centre City Parkway / N. Nutmeg Street intersection are provided in **Appendix I**.

Table 9-2
Intersection Operations With Mitigation

Intersection	Peak Hour	Without Mitigation		Recommended Mitigation	With Project With Mitigation
		Without Project	With Project		
		Delay [1] – LOS	Delay [1] – LOS		Delay [1] – LOS
Existing Plus Project Conditions					
N. Centre City Parkway/ N. Nutmeg Street	AM	**45.3 - E**	**53.2 - F**	Install a traffic signal. Restripe the southbound approach to provide a dedicated left-turn lane, and construct a dedicated right-turn lane on the southbound approach.	17.5 - B
	PM	25.4 - D	33.5 - D		16.2 - B
W. Country Club Lane/ N. Nutmeg Street	AM	29.9 - D	34.7 - D	Install a traffic signal and restripe the southbound approach to provide a shared left-turn/through lane and a dedicated right-turn lane.	28.8 - C
	PM	**39.2 - E**	**43.3 - E**		29.2 - C
Existing Plus Cumulative With Project Conditions					
N. Centre City Parkway/ N. Nutmeg Street	AM	**48.2 - E**	**57.3 - F**	Install a traffic signal. Restripe the southbound approach to provide a dedicated left-turn lane, and construct a dedicated right-turn lane on the southbound approach.	17.7 - B
	PM	27.0 - D	**36.0 - E**		16.2 - B
W. Country Club Lane/ N. Nutmeg Street	AM	**41.1 - E**	**44.8 - E**	Install a traffic signal and restripe the southbound approach to provide a shared left-turn/through lane and a dedicated right-turn lane.	33.1 - C
	PM	**59.4 - F**	**68.6 - F**		32.3 - C

[1] Seconds of delay per vehicle.

10 SITE ACCESS EVALUATION

As previously described, the project will take access from Nutmeg Street from two driveways that will be aligned as one four-way intersection, with one driveway provided for the north and south parcels, respectively. The driveway approaches of the project access intersection will be stop-controlled, while the eastbound and westbound approaches on Nutmeg Street will be uncontrolled.

Based on the results of the HCM intersection analysis, the unsignalized project access intersection at Nutmeg Street is forecast to operate at acceptable levels of service (LOS D or better) during the peak hours under all analysis scenarios with the project. Therefore, no operational impacts are anticipated at the project access intersection.

The project will improve Nutmeg Street to its ultimate width as a Local Collector per the City's General Plan Mobility Element (42 feet curb-to-curb) along the project frontage. It is recommended that the project stripe a two-way left-turn lane in the center of Nutmeg Street along the project frontage, transitioning to a dedicated left-turn lane in each direction on Nutmeg Street at the project access intersection.

A queuing analysis was performed for the Nutmeg Street / Project Access intersection during the peak hours under Existing Plus Cumulative Plus Project conditions to determine the storage length needs of the recommended left-turn lanes on the Nutmeg Street approaches of the intersection. The SimTraffic traffic simulation application included in the Synchro software program was used to perform the queuing analysis.

Based on the forecast 95th percentile queue lengths during the peak hours, **50-foot** left-turn pockets will be sufficient for the eastbound and westbound left-turn lanes at the Nutmeg Street / Project Access intersection. The Synchro/SimTraffic queuing worksheets for the Nutmeg Street / Project Access intersection are provided in **Appendix I**.

Sight Distance Assessment

The project access intersection would be located near the center of the horizontal curve on Nutmeg Street to maximize the available line of sight from the driveways. The Nutmeg Street / Project Access intersection is also located at the crest of a gradual vertical curve, which also maximizes visibility looking in both directions of travel. There is no posted speed limit on Nutmeg Street between Gary Lane and Centre City Parkway, but according to the City's Street Design Standards, the design speed for a Local Collector street is 35 miles per hour (mph). The minimum intersection corner sight distance needed for a design speed of 35 mph is approximately 385 feet according to the Caltrans Highway Design Manual (6th Edition, 2012).

A field visit to the project site was conducted to perform sight distance measurements from the approximate location of each driveway approach at the Nutmeg Street / Project Access intersection. Sight distance was measured 10 feet back from the existing edge of pavement on the south side of Nutmeg Street from the approximate location of the northbound driveway approach.

Thick vegetation and a steep slope on the north side of Nutmeg Street prevented the sight distance measurement from being taken 10 feet back from the edge of pavement; therefore, sight distance from the approximate location of the southbound driveway approach was measured right at the edge of pavement on Nutmeg Street. Sight distance from the approximate locations of both driveway approaches was measured from an eye height of 3.5 feet on the driveway approaches to an object height of 4.25 feet on Nutmeg Street.

A clear, unobstructed line of sight is available from each driveway approach looking east to Centre City Parkway at the intersection with Nutmeg Street. Centre City Parkway is located approximately 400 feet east of the project access intersection on Nutmeg Street. The slight downgrade toward the east along Nutmeg Street maximizes visibility looking east from both driveway approaches. Therefore, the available sight distance looking east from both project driveway approaches exceeds the minimum intersection corner sight distance needed (385 feet) based on the roadway design speed of 35 mph.

The horizontal curve somewhat limits line of sight looking west from the northbound driveway approach, but because the project access intersection is at the crest of a gradual vertical curve, the slight downgrade toward the west along Nutmeg Street maximizes visibility looking west from both driveway approaches.

However, existing shrubs, a pile of rocks, and a chain link fence along the south (or east) side of Nutmeg Street near and along the boundary with Caltrans right-of-way currently obstructs line of sight looking west from both driveway approaches. The available sight distance looking west from the northbound driveway approach is approximately **210 feet**. The available sight distance looking west from the southbound driveway approach is approximately **240 feet**. Therefore, the available sight distance looking west from both project driveway approaches currently does not meet the minimum intersection corner sight distance needed (385 feet) based on the roadway design speed of 35 mph.

The project site plan shows a proposed bioswale or detention basin on the south side of Nutmeg Street near the location of the existing shrubs, rock and fencing that currently obstruct line of sight. It is expected that the obstructing shrubs and rocks will be removed when the project is developed, and because the proposed bioswale or detention basin would be below the grade level of the street, line of sight would be improved over the existing condition.

There are two perpendicular sections of chain link fence at the project boundary with Caltrans right-of-way that are currently obstructing line of sight looking west from both project driveway approaches. There are also overgrown shrubs along these sections of fencing that further hinder line of sight.

It is recommended that an approximately 25-foot section of fencing perpendicular to Nutmeg Street be removed. The section to be removed extends 25 feet from near the edge of pavement on the south of Nutmeg Street. This section of fencing currently separates the project site from Caltrans right-of-way.

It is also recommended that an approximately 75-foot section of fencing parallel with Nutmeg Street be set back approximately 20 feet from its current location. The section to be set back extends from the project boundary (perpendicular fence) to the beginning of the I-15 freeway bridge abutment. This section of fencing is currently set back between 10 and 15 feet back from the edge of pavement on Nutmeg Street. It is also recommended that all existing shrubs be removed between the existing and relocated section of fencing.

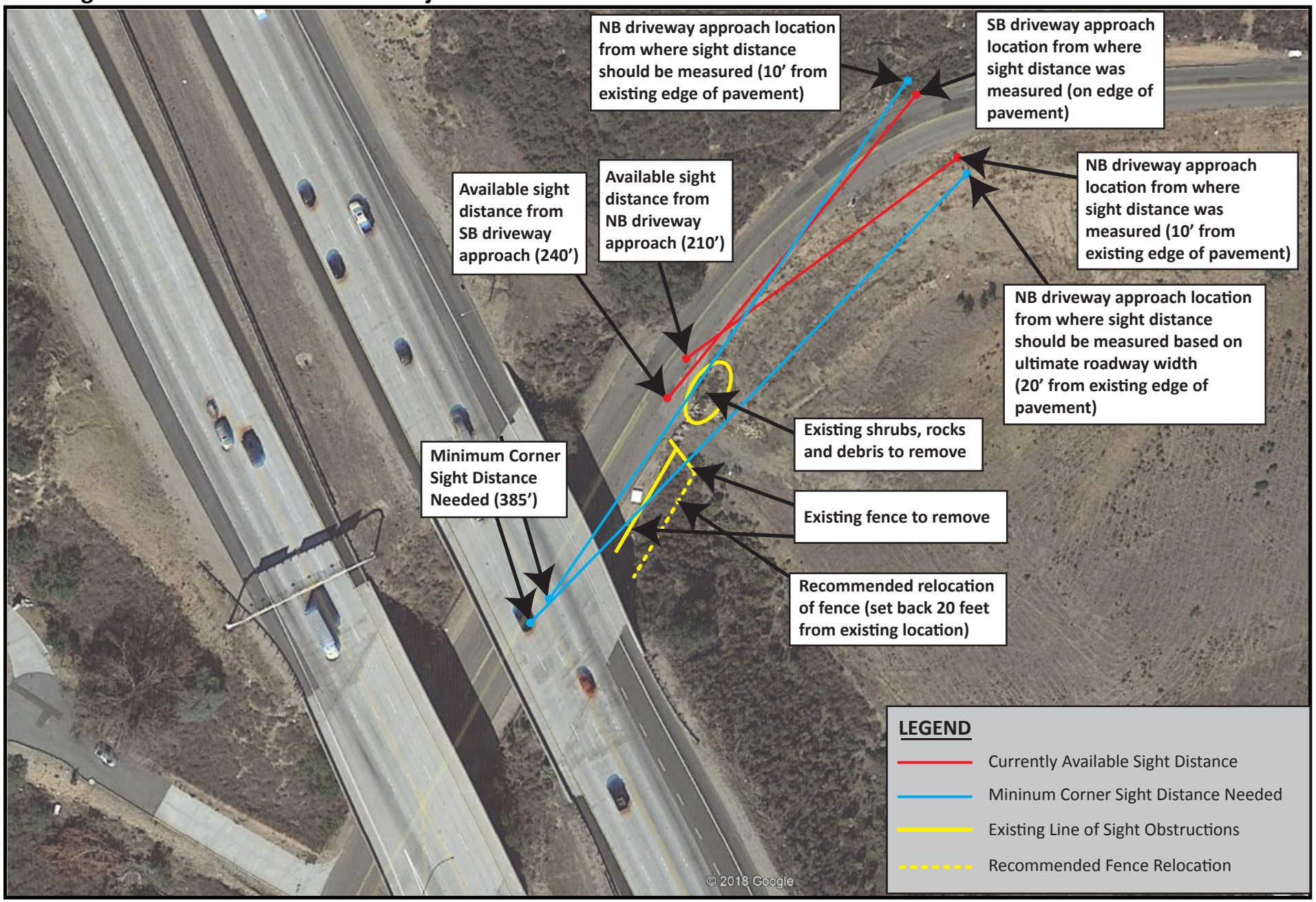
The area between the existing and relocated section of fencing must be kept clear of any obstructions over 3 feet in height, and it is recommended that this area be covered in a hardscape surface such as gravel or decomposed granite (DG). This area and the recommended removal and relocation of fencing is on Caltrans property, and the project developer would be required to obtain an approved encroachment permit to remove and relocate the recommended sections of fencing, along with the removal of the existing shrubs and covering the ground surface in this area with gravel or DG.

The recommended lengths of fencing to remove and relocate is based on the minimum corner sight distance needed from the driveway approaches after the project widens Nutmeg Street to its General Plan width (42 feet curb-to-curb). Near the project access intersection, the project will widen the south side of Nutmeg Street by approximately 10-12 feet. Therefore, the minimum corner sight distance needed would be based on a location approximately 20 feet back from the existing edge of pavement. The field measurement was not collected from 20 feet back from the edge of pavement because the existing south parcel gradually slopes downward from the road. It is expected that the grading of the south parcel will increase the grade near the project access intersection to the same level as Nutmeg Street.

The downgrade along Nutmeg Street to the west extends from the project access intersection to beyond the west side of the I-15 freeway overpass, a distance of approximately 700 feet. Once the recommended removal and relocation of the existing obstructions is implemented, it is expected that the available sight distance from the southbound driveway approach will exceed 600 feet. It is expected that following removal and relocation of the existing obstructions, the available sight distance from the northbound driveway approach will exceed 400 feet. Therefore, the minimum intersection corner sight distance needed (385 feet based on roadway design speed of 35 mph) would be exceeded from both driveway approaches.

Exhibit 10-1 illustrates the currently available sight distance, the minimum corner sight distance needed, and the locations of the existing objects obstructing line of sight that are recommended to be removed and relocated so that the minimum corner sight distance can be achieved.

Nutmeg Residential Condominiums Project



RICK ENGINEERING COMPANY
Traffic Division

Exhibit 10-1
Sight Distance Assessment Recommendations

11 SUMMARY AND RECOMMENDATIONS

This traffic impact analysis evaluates the traffic conditions associated with the proposed Nutmeg Residential Condominiums Project (herein referred to as "the project") located on a vacant site along the east side of I-15, east of N. Centre City Parkway and north and south of N. Nutmeg Street in the City of Escondido. The project proposes a Multi-Family Site Development Plan to construct 137 residential townhome/condominium units on approximately 7.66 acres.

The site to the north of Nutmeg Street will be developed with 39 townhome residential units. The site to the south of Nutmeg Street would be developed with 98 townhome residential units.

The project will take access from Nutmeg Street from two driveways that will be aligned as a four-way intersection, with one driveway provided for the north and south parcels, respectively. The driveway approaches of the project access intersection will be stop-controlled, while the eastbound and westbound approaches on Nutmeg Street will be uncontrolled.

The project is forecast to generate approximately 1,096 average weekday trips, including 88 AM peak hour trips and 110 PM peak hour trips. A comparison in trip generation was performed between the currently proposed project and the previously approved commercial uses, which revealed that the proposed project is forecast to generate 1,202 fewer daily trips, 234 fewer AM peak hour trips, and 189 fewer PM peak hour trips than the previously approved uses.

The results of the existing conditions analysis showed that the study intersections currently operate at acceptable LOS except for the following intersections that currently operate at a deficient LOS E or F during the peak hours:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (PM: LOS E); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The existing conditions roadway segment analysis results showed that all study roadway segments are currently operating at acceptable LOS based on daily traffic volumes and roadway capacity.

Under Existing Plus Project conditions, the study intersections are forecast to continue operating at acceptable LOS except for the following intersections:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS F);
- W. Country Club Lane/ N. Nutmeg Street (PM: LOS E); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The forecast increase in delay to the following two intersections forecast to operate at LOS D, E or F would exceed the significance threshold of 2.0 seconds:

- N. Centre City Parkway/ N. Nutmeg Street (AM and PM); and
- W. Country Club Lane/ N. Nutmeg Street (AM and PM).

Therefore, the project would result in direct significant impacts at the two above-listed intersections under Existing Plus Project conditions.

The results of the roadway segment analysis under Existing Plus Project conditions showed that consistent with existing conditions, all study roadway segments are forecast to continue operating at acceptable LOS.

The Existing Plus Project analysis results also show that the increase in v/c ratio associated with the addition of project-related traffic to existing traffic volumes on the segment of N. Nutmeg Street between Country Club Lane and Via Alexandra would exceed the significance threshold of 0.02, resulting in a direct significant impact.

To determine the Existing Plus Cumulative conditions in the project study area, forecast project traffic associated with City of Escondido approved or pending projects was added to existing traffic volumes. The cumulative projects within the City of Escondido are forecast to generate approximately 10,312 trips per day, which includes approximately 978 AM peak hour trips and approximately 1,010 PM peak hour trips.

The results of the Existing Plus Cumulative conditions analysis showed that the following study intersections are forecast to operate at a deficient LOS E or F during the peak hours without the project:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (AM: LOS E; PM: LOS F); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The analysis results showed that with the addition of project-related traffic to Existing Plus Cumulative conditions traffic volumes, the following intersections are forecast to operate at a deficient LOS E or F during the peak hours:

- N. Centre City Parkway/ N. Nutmeg Street (AM: LOS F; PM: LOS E);
- W. Country Club Lane/ N. Nutmeg Street (AM: LOS E; PM: LOS F); and
- N. Centre City Parkway/ W. El Norte Parkway (AM/PM: LOS E).

The forecast increase in delay to the following two intersections forecast to operate at LOS D, E or F would exceed the significance threshold of 2.0 seconds:

- N. Centre City Parkway/ N. Nutmeg Street (AM and PM); and
- W. Country Club Lane/ N. Nutmeg Street (AM and PM).

The addition of project traffic to the N. Centre City Parkway/ N. Nutmeg Street intersection would also result in a change from an acceptable LOS D to a deficient LOS E during the PM peak hour under Existing Plus Cumulative Plus Project conditions. Therefore, the project would result in a direct significant impact at the N. Centre City Parkway/ N. Nutmeg Street intersection, and would result in a cumulative significant impact at the W. Country Club Lane/ N. Nutmeg Street intersection.

The results of the roadway segment analysis under Existing Plus Cumulative conditions showed that the study roadway segments are forecast to operate at acceptable LOS both without and with the proposed project.

The Existing Plus Cumulative Plus Project analysis results also show that the increase in v/c ratio associated with the addition of project-related traffic to Existing Plus Cumulative traffic volumes on the segment of N. Nutmeg Street between Country Club Lane and Via Alexandra would exceed the significance threshold of 0.02, resulting in a cumulative significant impact.

The signal warrant analysis results showed that at the intersection of N. Centre City Parkway/ N. Nutmeg Street, either Part A or Part B (or both) were satisfied under the following analysis scenarios:

- Existing Conditions (PM: Part B)
- Existing Plus Project Conditions (AM/PM: Part B)
- Existing Plus Cumulative Without Project Conditions (PM: Part B)
- Existing Plus Cumulative With Project Conditions (AM/PM: Part B)

The signal warrant analysis results also show that at the intersection of W. Country Club Lane/ N. Nutmeg Street, either Part A or Part B (or both) were satisfied under the following analysis scenarios:

- Existing Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Project Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Cumulative Without Project Conditions (AM: Part B; PM: Parts A and B)
- Existing Plus Cumulative With Project Conditions (AM/PM: Part A; AM/PM: Part B)

To mitigate the project's significant impacts under Existing Plus Project and Existing Plus Cumulative With Project conditions, the following mitigation measures are recommended:

MITIGATION MEASURE 1: N. Centre City Parkway/ N. Nutmeg Street

- Install a traffic signal at the intersection. Restripe the southbound approach to provide a dedicated left-turn lane, and construct a dedicated right-turn lane on the southbound approach to the satisfaction of the City engineer.

MITIGATION MEASURE 2: W. Country Club Lane/ N. Nutmeg Street

- Install a traffic signal at the intersection and restripe the southbound approach to provide a shared left-turn/through lane and a dedicated right-turn lane to the satisfaction of the City engineer.

MITIGATION MEASURE 3: N. Nutmeg Street, from W. Country Club Lane to Via Alexandra

- Widen the existing roadway between La Paloma Avenue and Via Alexandria to provide for a 14' wide southbound lane with curb, gutter and sidewalk designed as a green streets facility. Improvements shall include removal and reconstructions of existing driveways to private driveway standards and a parking restriction along the improved section of Nutmeg Street to the satisfaction of the City Engineer.

The results of a queuing analysis that was performed for the N. Centre City Parkway/ N. Nutmeg Street intersection under Existing Plus Cumulative Plus Project conditions with the recommended mitigation measures showed the following minimum storage lengths should be provided for the recommended left-turn and right-turn lanes:

- Eastbound Left-Turn Lane: 100 feet
- Southbound Left-turn Lane: 100 feet
- Southbound Right-Turn Lane: 125 feet

The results of the site access evaluation showed that no operational impacts are anticipated at the project access intersection on Nutmeg Street. The results of a queuing analysis that was performed for the Nutmeg Street / Project Access intersection showed that 50-foot left-turn pockets will be sufficient for the eastbound and westbound left-turn lanes.

The results of the sight distance assessment showed that the available sight distance looking east from both project driveway approaches is clear and unobstructed to Centre City Parkway at the intersection with Nutmeg Street.

The available sight distance looking west from both driveway approaches is currently obstructed by existing shrubs and rocks near the project site boundary with Caltrans right-of-way. Two perpendicular sections of chain link fencing separating the project site and the public street from Caltrans property are overgrown with shrubs and also obstruct line of sight looking west from the project driveways.

It is recommended that an approximately 25-foot section of fencing perpendicular to Nutmeg Street be removed. This section of fencing currently separates the project site from Caltrans right-of-way.

It is also recommended that an approximately 75-foot section of fencing parallel with Nutmeg Street be set back approximately 20 feet from its current location. It is also recommended that all existing shrubs be removed between the existing and relocated section of fencing.

The area between the existing and relocated section of fencing must be kept clear of any obstructions over 3 feet in height, and it is recommended that this area be covered in a hardscape surface such as gravel or decomposed granite (DG). This area and the recommended removal and relocation of fencing is on Caltrans property, and the project developer would be required to obtain an approved encroachment permit to remove and relocate the recommended sections of fencing, along with the removal of the existing shrubs and covering the ground surface in this area with gravel or DG.

Once the recommended removal and relocation of the existing obstructions is implemented, it is expected that the available sight distance from the southbound driveway approach will exceed 600 feet. It is expected that following removal and relocation of the existing obstructions, the available sight distance from the northbound driveway approach will exceed 400 feet. Therefore, the minimum intersection corner sight distance needed (385 feet based on roadway design speed of 35 mph) would be exceeded from both driveway approaches.

Nutmeg Street is proposed as a Class III bike route per the City's Bicycle Master Plan and General Plan Mobility Element. If the City plans to implement a Class III bike route along Nutmeg Street prior to occupancy of the proposed project, it is recommended that the project install Class III bike route signage along the project frontage on Nutmeg Street in each direction of travel.

APPENDIX A

Traffic Counts Data

National Data & Surveying Services

Intersection Turning Movement Count

Location: N Centre City Pkwy & N Nutmeg St
City: Escondido
Control: 1-Way Stop(EB)

Project ID: 17-04283-001
Date: 9/12/2017

Total

NS/EW Streets:	N Centre City Pkwy				N Centre City Pkwy				N Nutmeg St				N Nutmeg St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	11	1	0	0	127	36	0	4	1	0	0	2	0	0	0	182
7:15 AM	1	18	0	0	0	166	56	0	6	0	1	0	0	0	1	0	249
7:30 AM	1	37	0	0	1	194	69	0	15	0	0	0	2	0	0	0	319
7:45 AM	0	38	3	0	0	164	75	1	15	0	1	0	3	0	0	0	300
8:00 AM	0	44	2	0	0	191	67	0	5	0	1	0	1	0	0	0	311
8:15 AM	2	21	2	0	1	234	83	0	6	0	0	0	0	0	0	0	349
8:30 AM	0	37	2	0	0	258	84	0	9	1	3	0	1	0	0	0	395
8:45 AM	2	30	1	0	1	271	97	0	7	0	0	0	0	0	0	0	409
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	236	11	0	3	1605	567	1	67	2	6	0	9	0	1	0	2514
APPROACH %'s :	2.37%	93.28%	4.35%	0.00%	0.14%	73.76%	26.06%	0.05%	89.33%	2.67%	8.00%	0.00%	90.00%	0.00%	10.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	4	132	7	0	2	954	331	0	27	1	4	0	2	0	0	0	1464
PEAK HR FACTOR :	0.500	0.750	0.875	0.000	0.500	0.880	0.853	0.000	0.750	0.250	0.333	0.000	0.500	0.000	0.000	0.000	0.895
	0.777				0.872				0.615				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	70	4	0	0	53	12	0	19	0	0	0	0	0	1	0	159
4:15 PM	1	92	0	0	1	31	8	0	21	1	2	0	0	1	1	0	159
4:30 PM	0	79	1	0	0	44	6	0	24	0	0	0	2	0	2	0	158
4:45 PM	1	95	3	0	1	36	14	0	23	0	0	0	0	0	1	0	174
5:00 PM	2	103	1	0	0	44	14	0	35	2	0	0	0	0	0	0	201
5:15 PM	4	132	0	0	1	44	5	0	26	0	0	0	0	0	0	0	212
5:30 PM	1	133	1	0	0	50	8	0	36	0	0	0	1	1	1	0	232
5:45 PM	1	141	2	0	0	44	7	0	35	1	0	0	1	0	0	0	232
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	10	845	12	0	3	346	74	0	219	4	2	0	4	2	6	0	1527
APPROACH %'s :	1.15%	97.46%	1.38%	0.00%	0.71%	81.80%	17.49%	0.00%	97.33%	1.78%	0.89%	0.00%	33.33%	16.67%	50.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	8	509	4	0	1	182	34	0	132	3	0	0	2	1	1	0	877
PEAK HR FACTOR :	0.500	0.902	0.500	0.000	0.250	0.910	0.607	0.000	0.917	0.375	0.000	0.000	0.500	0.250	0.250	0.000	0.945
	0.905				0.935				0.912				0.333				

N Centre City Pkwy & N Nutmeg St

Peak Hour Turning Movement Count

ID: 17-04283-001
City: Escondido

Day: Tuesday
Date: 09/12/2017

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

N Centre City Pkwy — SOUTHBOUND

AM	331	954	2	0	159	AM
NOON	0	0	0	0	0	NOON
PM	34	182	1	0	642	PM
	0	1	0	0		

N Nutmeg St — EASTBOUND

AM	NOON	PM	
335	0	43	
0	0	0	0
27	0	132	0
1	0	3	1
4	0	0	0
AM	NOON	PM	

N Nutmeg St — WESTBOUND

PM	NOON	AM	
1	0	0	0
1	0	0	1
2	0	2	0
0	0	0	0
8	0	10	
PM	NOON	AM	

CONTROL

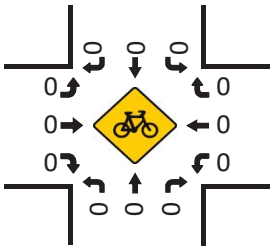
1-Way Stop(EB)

TEV	1464	0	877
	AM	NOON	PM
PHF	0.89		0.95

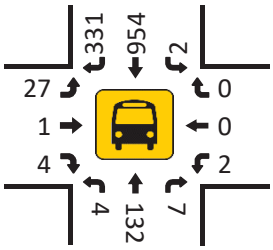
N Centre City Pkwy — NORTHBOUND

	0	1	1	0		
PM	184	0	8	509	4	PM
NOON	0	0	0	0	0	NOON
AM	960	0	4	132	7	AM

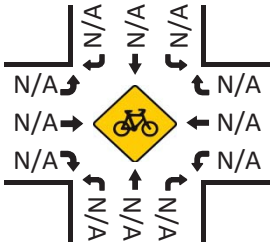
Bikes (AM)



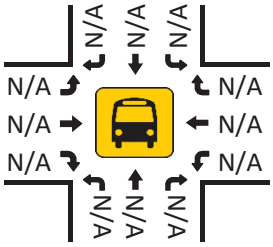
Total Vehicles (AM)



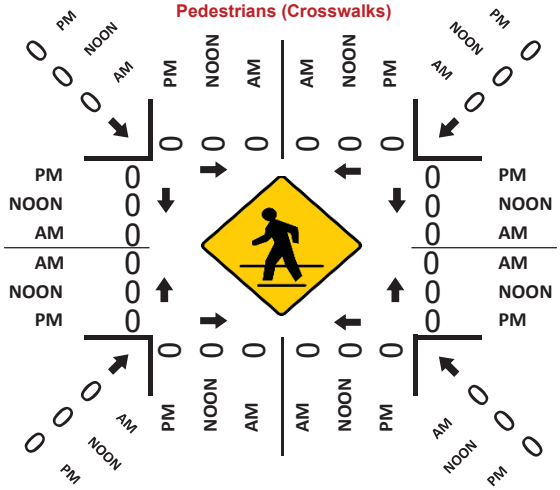
Bikes (NOON)



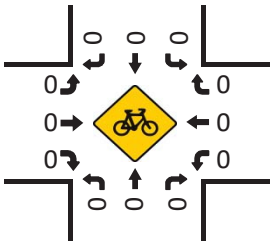
Total Vehicles (NOON)



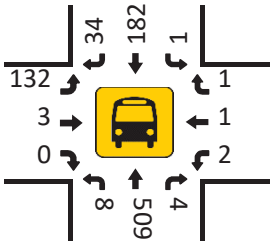
Pedestrians (Crosswalks)



Bikes (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Centre City Pkwy & W Country Club Ln
City: Escondido
Control: Signalized

Project ID: 17-04283-002
Date: 9/12/2017

Total

NS/EW Streets:	N Centre City Pkwy				N Centre City Pkwy				W Country Club Ln				W Country Club Ln				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	38	16	2	45	174	57	1	8	79	28	2	44	91	26	0	618
7:15 AM	6	56	27	0	53	236	78	0	9	110	38	2	45	129	25	1	815
7:30 AM	15	52	31	1	38	222	84	0	15	84	32	1	83	119	36	1	814
7:45 AM	13	58	31	2	37	254	82	2	13	90	28	1	74	104	28	4	821
8:00 AM	8	59	17	0	30	219	69	1	15	51	31	0	72	162	39	0	773
8:15 AM	21	62	22	3	20	320	89	0	11	33	27	0	42	76	24	1	751
8:30 AM	12	57	17	0	23	370	80	0	11	32	24	0	51	64	24	1	766
8:45 AM	16	46	17	0	40	326	76	1	7	26	21	3	36	47	20	0	682
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	98	428	178	8	286	2121	615	5	89	505	229	9	447	792	222	8	6040
APPROACH %'s :	13.76%	60.11%	25.00%	1.12%	9.45%	70.07%	20.32%	0.17%	10.70%	60.70%	27.52%	1.08%	30.43%	53.91%	15.11%	0.54%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	42	225	106	3	158	931	313	3	52	335	129	4	274	514	128	6	3223
PEAK HR FACTOR :	0.700	0.953	0.855	0.375	0.745	0.916	0.932	0.375	0.867	0.761	0.849	0.500	0.825	0.793	0.821	0.375	0.981
	0.904				0.937				0.818				0.844				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	83	33	0	31	66	18	0	36	68	24	1	20	49	16	0	459
4:15 PM	24	107	51	0	30	60	8	0	34	81	18	5	29	42	28	1	518
4:30 PM	29	70	34	1	24	56	15	1	39	88	18	4	25	50	22	0	476
4:45 PM	31	110	44	0	26	62	16	0	30	89	21	6	27	63	25	1	551
5:00 PM	26	103	45	0	33	56	11	1	42	91	19	8	34	62	22	0	553
5:15 PM	28	139	57	0	28	69	14	0	22	84	15	1	18	65	23	0	563
5:30 PM	24	129	37	2	27	69	13	0	33	116	17	3	24	62	26	1	583
5:45 PM	21	153	42	2	26	67	18	1	14	87	15	7	15	53	21	2	544
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	197	894	343	5	225	505	113	3	250	704	147	35	192	446	183	5	4247
APPROACH %'s :	13.69%	62.13%	23.84%	0.35%	26.60%	59.69%	13.36%	0.35%	22.01%	61.97%	12.94%	3.08%	23.24%	54.00%	22.15%	0.61%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	109	481	183	2	114	256	54	1	127	380	72	18	103	252	96	2	2250
PEAK HR FACTOR :	0.879	0.865	0.803	0.250	0.864	0.928	0.844	0.250	0.756	0.819	0.857	0.563	0.757	0.969	0.923	0.500	0.965
	0.865				0.957				0.883				0.960				

Prepared by National Data & Surveying Services

N Centre City Pkwy & W Country Club Ln

Peak Hour Turning Movement Count

ID: 17-04283-002
City: Escondido

Day: Tuesday
Date: 09/12/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

N Centre City Pkwy — SOUTHBOUND

AM	313	931	158	3	408	AM
NOON	0	0	0	0	0	NOON
PM	54	256	114	1	705	PM

W Country Club Ln — EASTBOUND

AM	NOON	PM		
873	0	433	⇦	
4	0	18	↰	0
52	0	127	↱	1
335	0	380	→	2
129	0	72	↱	1
AM	NOON	PM		

W Country Club Ln — WESTBOUND

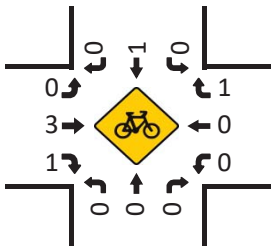
PM	NOON	AM		
96	0	128	↰	1
252	0	514	←	2
103	0	274	↰	1
2	0	6	↰	0
679	0	605	⇨	
PM	NOON	AM		

N Centre City Pkwy — NORTHBOUND

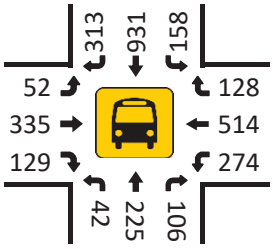
PM	433	2	109	481	183	PM
NOON	0	0	0	0	0	NOON
AM	1337	3	42	225	106	AM

CONTROL			
Signalized			
TEV	3223	0	2250
	AM	NOON	PM
PHF	0.98		0.96

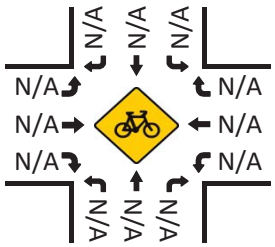
Bikes (AM)



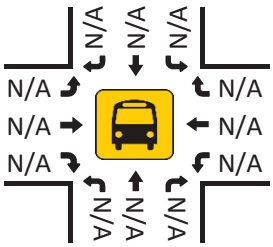
Total Vehicles (AM)



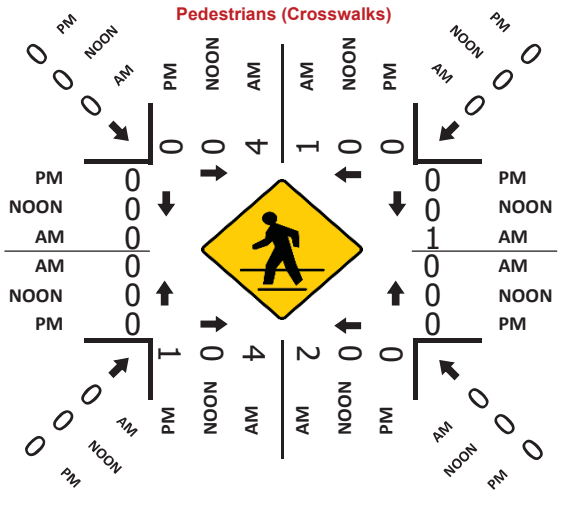
Bikes (NOON)



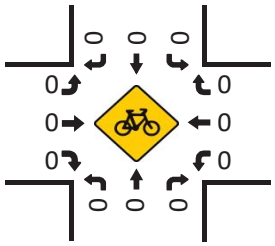
Total Vehicles (NOON)



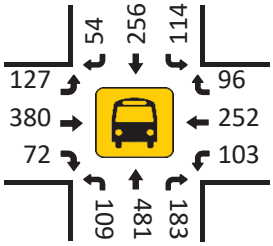
Pedestrians (Crosswalks)



Bikes (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Nutmeg St & W Country Club Ln
City: Escondido
Control: 4-Way Stop

Project ID: 17-04283-003
Date: 9/12/2017

Total

NS/EW Streets:	N Nutmeg St				N Nutmeg St				W Country Club Ln				W Country Club Ln				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	3	44	0	11	27	27	0	2	50	13	0	70	148	5	0	403
7:15 AM	1	8	44	0	18	50	29	0	3	36	11	0	77	148	7	0	432
7:30 AM	1	10	22	0	15	53	35	0	5	59	12	0	82	114	1	0	409
7:45 AM	4	13	35	0	15	44	39	0	3	36	15	0	97	138	6	0	445
8:00 AM	8	8	29	0	7	40	43	0	2	29	9	0	72	124	6	0	377
8:15 AM	6	10	15	0	8	35	43	0	4	34	8	0	46	111	3	0	323
8:30 AM	5	13	23	0	5	66	36	0	0	29	6	0	57	71	3	0	314
8:45 AM	2	5	21	0	3	57	35	0	3	21	8	0	69	78	5	0	307
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	30	70	233	0	82	372	287	0	22	294	82	0	570	932	36	0	3010
APPROACH %'s :	9.01%	21.02%	69.97%	0.00%	11.07%	50.20%	38.73%	0.00%	5.53%	73.87%	20.60%	0.00%	37.06%	60.60%	2.34%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	9	34	145	0	59	174	130	0	13	181	51	0	326	548	19	0	1689
PEAK HR FACTOR :	0.563	0.654	0.824	0.000	0.819	0.821	0.833	0.000	0.650	0.767	0.850	0.000	0.840	0.926	0.679	0.000	0.949
	0.887				0.881				0.806				0.926				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	23	63	0	2	11	3	0	4	79	10	0	24	31	4	0	268
4:15 PM	11	27	63	0	5	11	2	0	6	58	7	0	41	46	10	0	287
4:30 PM	13	30	72	0	5	7	3	0	9	82	8	0	38	35	7	0	309
4:45 PM	16	40	90	0	8	14	6	0	11	72	5	1	39	40	10	1	353
5:00 PM	11	35	62	0	4	11	8	0	4	60	4	0	32	47	8	0	286
5:15 PM	17	41	80	0	4	6	3	0	9	83	10	1	31	51	11	0	347
5:30 PM	10	45	68	0	2	16	6	0	8	66	11	1	34	43	4	0	314
5:45 PM	10	47	67	0	3	9	5	0	8	64	7	0	40	39	4	0	303
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	102	288	565	0	33	85	36	0	59	564	62	3	279	332	58	1	2467
APPROACH %'s :	10.68%	30.16%	59.16%	0.00%	21.43%	55.19%	23.38%	0.00%	8.58%	81.98%	9.01%	0.44%	41.64%	49.55%	8.66%	0.15%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	54	161	300	0	18	47	23	0	32	281	30	3	136	181	33	1	1300
PEAK HR FACTOR :	0.794	0.894	0.833	0.000	0.563	0.734	0.719	0.000	0.727	0.846	0.682	0.750	0.872	0.887	0.750	0.250	0.921
	0.882				0.786				0.840				0.944				

Prepared by National Data & Surveying Services

N Nutmeg St & W Country Club Ln

Peak Hour Turning Movement Count

ID: 17-04283-003
City: Escondido

Day: Tuesday
Date: 09/12/2017

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

SOUTHBOUND (N Nutmeg St)

AM	130	174	59	0	66	AM
NOON	0	0	0	0	0	NOON
PM	23	47	18	0	226	PM

EASTBOUND (W Country Club Ln)

AM	NOON	PM		
687	0	261	⇦	
0	0	3	↶	0
13	0	32	↱	1
181	0	281	→	2
51	0	30	↳	0
AM	NOON	PM		

WESTBOUND (W Country Club Ln)

PM	NOON	AM		
33	0	19	↰	0
181	0	548	←	2
136	0	326	↰	1
1	0	0	↶	0
600	0	385	⇨	
PM	NOON	AM		

NORTHBOUND (N Nutmeg St)

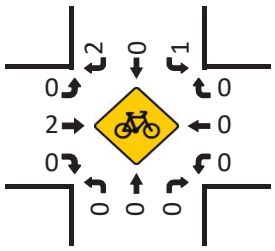
PM	213	0	54	161	300	PM
NOON	0	0	0	0	0	NOON
AM	551	0	9	34	145	AM

CONTROL

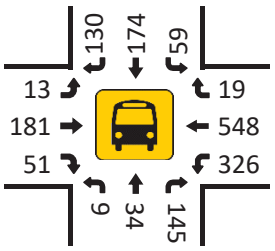
4-Way Stop

TEV	1689	0	1300
	AM	NOON	PM
PHF	0.95		0.92

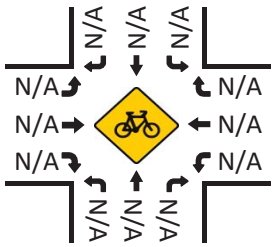
Bikes (AM)



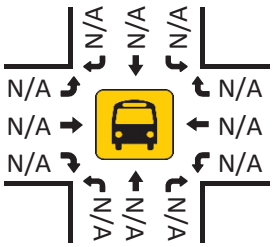
Total Vehicles (AM)



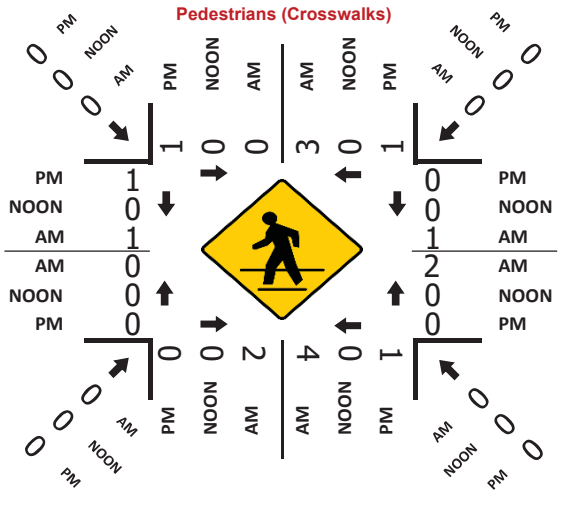
Bikes (NOON)



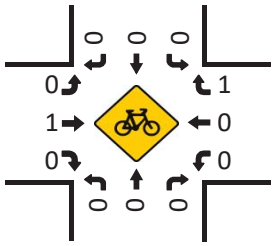
Total Vehicles (NOON)



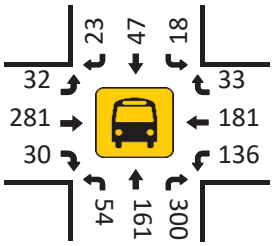
Pedestrians (Crosswalks)



Bikes (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Centre City Pkwy & S Iris Ln
City: Escondido
Control: Signalized

Project ID: 17-04283-004
Date: 9/12/2017

Total

NS/EW Streets:	N Centre City Pkwy				N Centre City Pkwy				S Iris Ln				S Iris Ln				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	54	19	0	0	200	26	1	9	40	4	0	87	48	3	0	493
7:15 AM	4	65	42	0	2	275	35	1	12	62	3	0	80	33	0	0	614
7:30 AM	2	87	47	1	3	291	34	0	20	53	3	0	113	54	4	0	712
7:45 AM	0	86	25	0	4	318	36	1	14	53	2	0	102	55	4	0	700
8:00 AM	1	71	21	2	1	292	34	0	13	26	3	0	92	64	1	0	621
8:15 AM	1	76	17	2	2	309	39	0	15	18	1	0	66	38	6	0	590
8:30 AM	1	80	21	1	1	436	41	1	9	16	1	0	42	13	0	0	663
8:45 AM	2	64	7	1	2	279	93	0	7	16	1	0	47	21	2	0	542
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	13	583	199	7	15	2400	338	4	99	284	18	0	629	326	20	0	4935
APPROACH %'s :	1.62%	72.69%	24.81%	0.87%	0.54%	87.05%	12.26%	0.15%	24.69%	70.82%	4.49%	0.00%	64.51%	33.44%	2.05%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	7	309	135	3	10	1176	139	2	59	194	11	0	387	206	9	0	2647
PEAK HR FACTOR :	0.438	0.888	0.718	0.375	0.625	0.925	0.965	0.500	0.738	0.782	0.917	0.000	0.856	0.805	0.563	0.000	0.929
	0.828				0.924				0.857				0.880				

NS/EW Streets:	N Centre City Pkwy				N Centre City Pkwy				S Iris Ln				S Iris Ln				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	105	41	1	3	96	11	0	27	51	1	0	32	17	1	0	388
4:15 PM	1	156	51	0	1	91	16	0	34	75	4	0	32	16	1	0	478
4:30 PM	3	99	34	0	2	91	5	1	31	68	1	0	34	15	6	0	390
4:45 PM	4	143	60	2	3	106	7	1	37	66	6	0	39	19	1	0	494
5:00 PM	4	120	42	1	1	82	20	0	42	53	2	0	40	22	4	0	433
5:15 PM	2	176	46	2	3	82	14	0	56	79	5	0	25	17	0	0	507
5:30 PM	2	146	66	1	1	91	15	0	49	70	5	0	21	15	1	0	483
5:45 PM	3	181	43	1	5	92	11	0	35	71	3	0	39	20	3	0	507
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	1126	383	8	19	731	99	2	311	533	27	0	262	141	17	0	3680
APPROACH %'s :	1.37%	73.21%	24.90%	0.52%	2.23%	85.90%	11.63%	0.24%	35.71%	61.19%	3.10%	0.00%	62.38%	33.57%	4.05%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	11	623	197	5	10	347	60	0	182	273	15	0	125	74	8	0	1930
PEAK HR FACTOR :	0.688	0.860	0.746	0.625	0.500	0.943	0.750	0.000	0.813	0.864	0.750	0.000	0.781	0.841	0.500	0.000	0.952
	0.917				0.965				0.839				0.784				

Prepared by National Data & Surveying Services

N Centre City Pkwy & S Iris Ln

Peak Hour Turning Movement Count

ID: 17-04283-004
City: Escondido

Day: Tuesday
Date: 09/12/2017

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

N Centre City Pkwy — SOUTHBOUND

	Right	Through	Left	U-Turn	Outbound
AM	139	1176	10	2	379
NOON	0	0	0	0	0
PM	60	347	10	0	813
Lanes	1	2	1	0	

S Iris Ln — EASTBOUND

	Lanes	AM	NOON	PM
Outbound		352	0	145
U-Turn	0	0	0	0
Left	1	59	0	182
Through	1	194	0	273
Right	0	11	0	15

S Iris Ln — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	8	0	9
Through	1	74	0	206
Left	1	125	0	387
U-Turn	0	0	0	0
Outbound		480	0	339

N Centre City Pkwy — NORTHBOUND

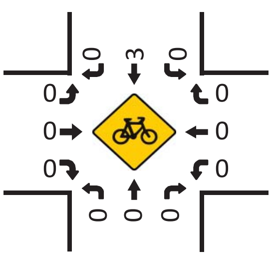
	Outbound	U-Turn	Left	Through	Right
Lanes		0	1	2	1
PM	492	5	11	623	197
NOON	0	0	0	0	0
AM	1577	3	7	309	135

CONTROL

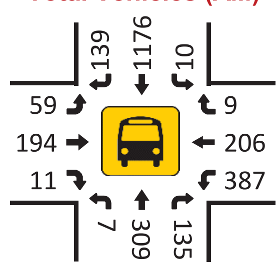
Signalized

	AM	NOON	PM
TEV	2647	0	1930
PHF	0.93		0.95

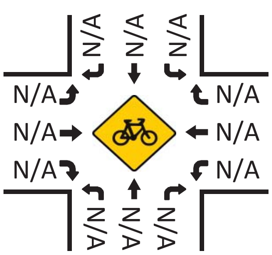
Bikes (AM)



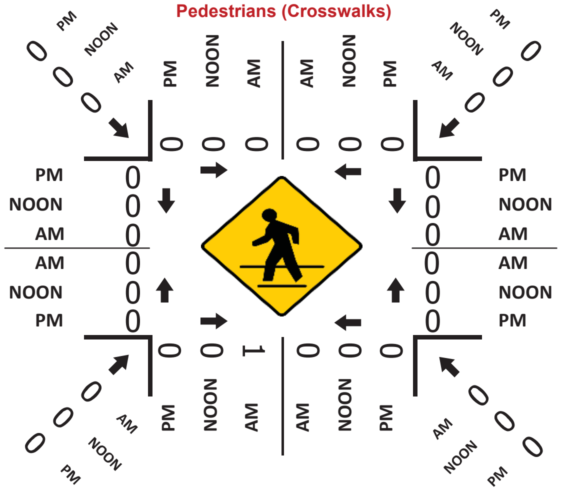
Total Vehicles (AM)



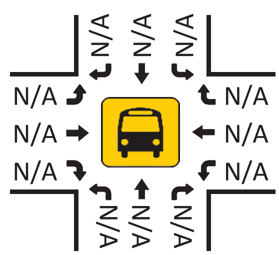
Bikes (NOON)



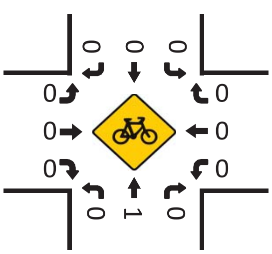
Pedestrians (Crosswalks)



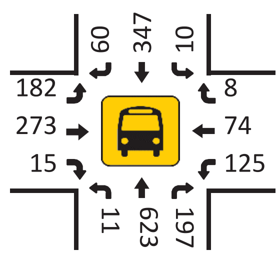
Total Vehicles (NOON)



Bikes (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Centre City Pkwy & W El Norte Pkwy
City: Escondido
Control: Signalized

Project ID: 17-04283-005
Date: 9/12/2017

Total

NS/EW Streets:	N Centre City Pkwy				N Centre City Pkwy				W El Norte Pkwy				W El Norte Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	2	2	1	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	34	50	20	0	45	230	14	0	3	112	53	3	91	183	29	0	867
7:15 AM	40	78	16	0	66	246	14	1	8	166	67	2	57	184	31	0	976
7:30 AM	35	66	24	0	73	291	16	1	4	124	50	0	80	182	50	0	996
7:45 AM	50	65	23	0	55	290	24	0	4	144	90	4	68	163	40	0	1020
8:00 AM	47	51	23	0	62	276	26	0	6	102	76	6	83	200	32	0	990
8:15 AM	45	65	14	0	54	315	17	0	6	112	90	7	59	155	34	1	974
8:30 AM	45	59	21	1	42	248	19	0	2	131	100	10	68	176	33	0	955
8:45 AM	46	55	27	0	65	277	15	3	1	129	128	13	58	147	26	0	990
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	342	489	168	1	462	2173	145	5	34	1020	654	45	564	1390	275	1	7768
APPROACH %'s :	34.20%	48.90%	16.80%	0.10%	16.59%	78.03%	5.21%	0.18%	1.94%	58.19%	37.31%	2.57%	25.29%	62.33%	12.33%	0.04%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	172	260	86	0	256	1103	80	2	22	536	283	12	288	729	153	0	3982
PEAK HR FACTOR :	0.860	0.833	0.896	0.000	0.877	0.948	0.769	0.500	0.688	0.807	0.786	0.500	0.867	0.911	0.765	0.000	0.976
	0.938				0.946				0.878				0.929				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	2	2	1	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	83	120	68	0	42	75	7	0	6	175	41	8	31	112	27	1	796
4:15 PM	76	134	88	0	42	56	7	1	5	215	44	5	50	164	41	0	928
4:30 PM	82	132	90	1	44	72	12	2	12	179	48	3	37	134	22	0	870
4:45 PM	72	139	91	0	55	59	18	4	17	226	55	4	27	170	39	2	978
5:00 PM	100	142	100	0	54	76	9	3	4	206	48	3	33	163	29	0	970
5:15 PM	101	168	106	0	45	54	8	4	13	226	38	1	29	164	30	2	989
5:30 PM	71	173	98	0	56	54	8	7	10	202	52	0	32	125	32	3	923
5:45 PM	93	173	72	0	61	64	7	1	12	232	62	1	37	160	50	2	1027
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	678	1181	713	1	399	510	76	22	79	1661	388	25	276	1192	270	10	7481
APPROACH %'s :	26.35%	45.90%	27.71%	0.04%	39.62%	50.65%	7.55%	2.18%	3.67%	77.15%	18.02%	1.16%	15.79%	68.19%	15.45%	0.57%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	365	656	376	0	216	248	32	15	39	866	200	5	131	612	141	7	3909
PEAK HR FACTOR :	0.903	0.948	0.887	0.000	0.885	0.816	0.889	0.536	0.750	0.933	0.806	0.417	0.885	0.933	0.705	0.583	0.952
	0.931				0.900				0.904				0.895				

Prepared by National Data & Surveying Services

N Centre City Pkwy & W El Norte Pkwy

Peak Hour Turning Movement Count

ID: 17-04283-005
City: Escondido

Day: Tuesday
Date: 09/12/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

N Centre City Pkwy — SOUTHBOUND

AM	80	1103	256	2	437	AM
NOON	0	0	0	0	0	NOON
PM	32	248	216	15	851	PM

W El Norte Pkwy — EASTBOUND

AM	NOON	PM	
993	0	1014	
12	0	5	0
22	0	39	2
536	0	866	2
283	0	200	1
AM	NOON	PM	

W El Norte Pkwy — WESTBOUND

PM	NOON	AM	
141	0	153	0
612	0	729	2
131	0	288	2
7	0	0	0
1465	0	878	
PM	NOON	AM	

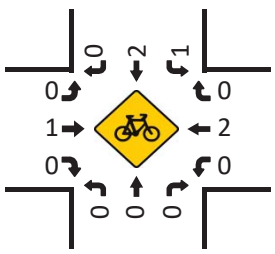
N Centre City Pkwy — NORTHBOUND

PM	579	0	365	656	376	PM
NOON	0	0	0	0	0	NOON
AM	1674	0	172	260	86	AM

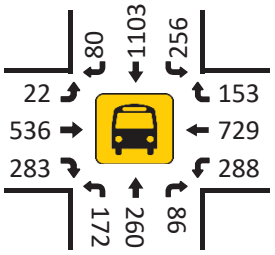
CONTROL			
Signalized			
TEV	3982	0	3909
	AM	NOON	PM
PHF	0.98		0.95

1 2 2 0 — 0 2 2 1

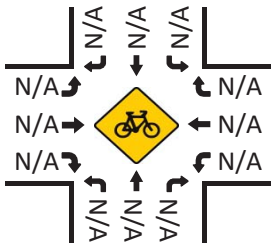
Bikes (AM)



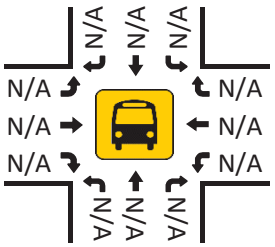
Total Vehicles (AM)



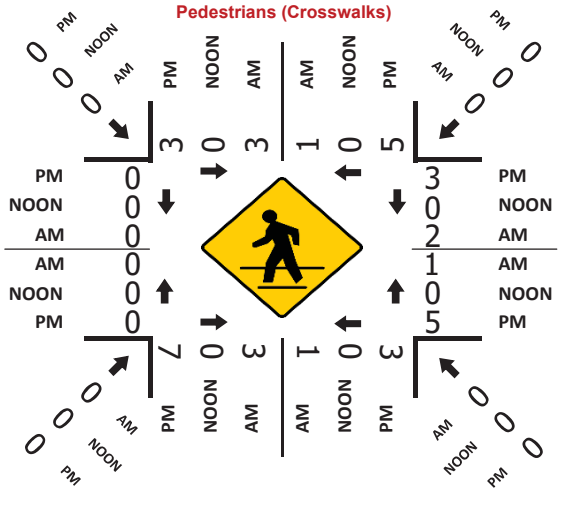
Bikes (NOON)



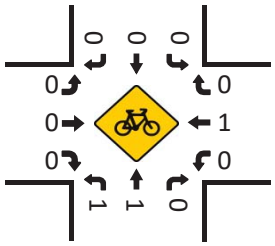
Total Vehicles (NOON)



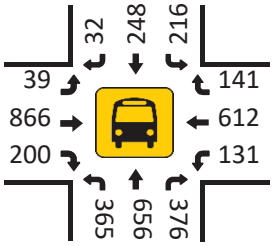
Pedestrians (Crosswalks)



Bikes (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Iris Ln & W El Norte Pkwy
City: Escondido
Control: Signalized

Project ID: 17-04283-006
Date: 9/12/2017

Total

NS/EW Streets:	S Iris Ln				S Iris Ln				W El Norte Pkwy				W El Norte Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	2	0	30	0	77	0	45	129	0	3	0	229	14	0	530
7:15 AM	2	0	3	0	20	0	85	0	41	144	0	5	0	214	31	0	545
7:30 AM	1	1	3	0	35	0	81	0	50	174	2	2	0	181	26	1	557
7:45 AM	0	0	4	0	35	0	79	0	22	139	1	4	3	193	15	3	498
8:00 AM	2	1	3	0	33	1	80	0	41	178	2	3	1	185	19	0	549
8:15 AM	2	0	2	0	42	0	68	0	30	179	3	2	1	181	16	5	531
8:30 AM	1	2	2	0	61	1	64	0	22	167	3	2	0	170	18	2	515
8:45 AM	1	0	2	0	61	0	64	0	33	162	0	8	2	181	18	3	535
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	10	4	21	0	317	2	598	0	284	1272	11	29	7	1534	157	14	4260
APPROACH %'s :	28.57%	11.43%	60.00%	0.00%	34.57%	0.22%	65.21%	0.00%	17.79%	79.70%	0.69%	1.82%	0.41%	89.60%	9.17%	0.82%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	5	2	13	0	123	1	325	0	154	635	5	14	4	773	91	4	2149
PEAK HR FACTOR :	0.625	0.500	0.813	0.000	0.879	0.250	0.956	0.000	0.770	0.892	0.625	0.700	0.333	0.903	0.734	0.333	0.965
	0.833				0.968				0.886				0.890				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	4	0	22	0	33	0	82	231	4	1	2	169	50	5	604
4:15 PM	1	1	0	0	19	1	37	0	95	234	3	6	1	172	43	3	616
4:30 PM	1	0	2	0	22	0	32	0	71	241	0	5	2	200	49	4	629
4:45 PM	2	0	1	0	23	0	35	0	71	255	2	6	3	171	54	4	627
5:00 PM	0	2	4	0	27	0	45	0	97	223	4	6	4	219	74	2	707
5:15 PM	4	1	4	0	31	0	34	0	114	227	4	3	9	152	47	3	633
5:30 PM	1	0	5	0	23	0	33	0	105	247	3	2	6	170	51	3	649
5:45 PM	4	2	5	0	23	0	34	0	73	230	2	1	3	174	52	3	606
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	6	25	0	190	1	283	0	708	1888	22	30	30	1427	420	27	5071
APPROACH %'s :	31.11%	13.33%	55.56%	0.00%	40.08%	0.21%	59.70%	0.00%	26.74%	71.30%	0.83%	1.13%	1.58%	74.95%	22.06%	1.42%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	7	3	14	0	104	0	147	0	387	952	13	17	22	712	226	12	2616
PEAK HR FACTOR :	0.438	0.375	0.700	0.000	0.839	0.000	0.817	0.000	0.849	0.933	0.813	0.708	0.611	0.813	0.764	0.750	0.925
	0.667				0.872				0.959				0.813				

Prepared by National Data & Surveying Services

S Iris Ln & W El Norte Pkwy

Peak Hour Turning Movement Count

ID: 17-04283-006
City: Escondido

Day: Tuesday
Date: 09/12/2017

PEAK HOURS

AM	07:15 AM - 08:15 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

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

S Iris Ln — SOUTHBOUND

AM	325	1	123	0	247	AM
NOON	0	0	0	0	0	NOON
PM	147	0	104	0	616	PM

W El Norte Pkwy — EASTBOUND

AM	NOON	PM	
1117	0	883	
14	0	17	0
154	0	387	1
635	0	952	2
5	0	13	0
AM	NOON	PM	

W El Norte Pkwy — WESTBOUND

PM	NOON	AM	
226	0	91	1
712	0	773	2
22	0	4	1
12	0	4	0
1082	0	775	
PM	NOON	AM	

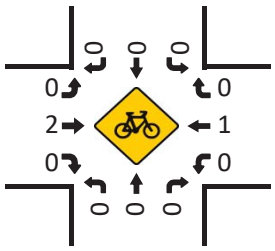
CONTROL: Signalized

TEV	2149 AM	0 NOON	2616 PM
PHF	0.96		0.93

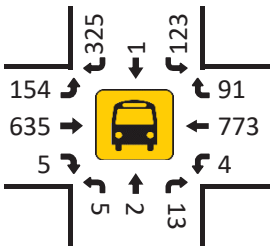
S Iris Ln — NORTHBOUND

PM	35	0	7	3	14	PM
NOON	0	0	0	0	0	NOON
AM	10	0	5	2	13	AM

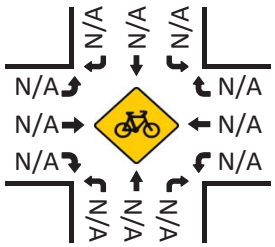
Bikes (AM)



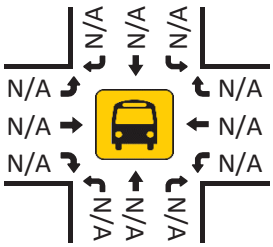
Total Vehicles (AM)



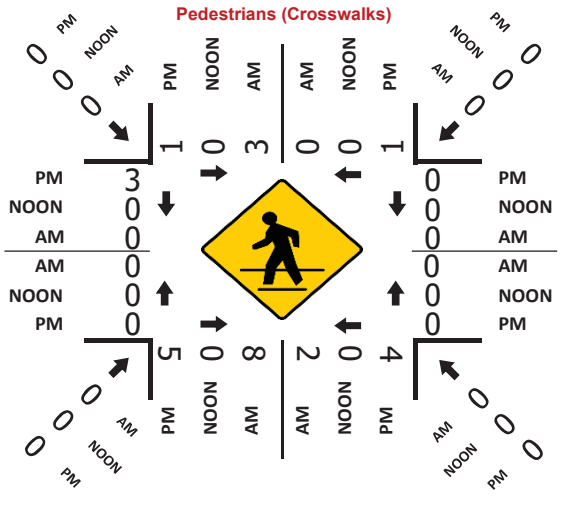
Bikes (NOON)



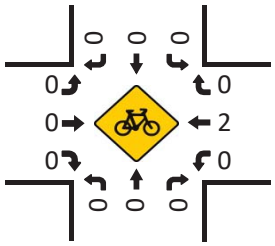
Total Vehicles (NOON)



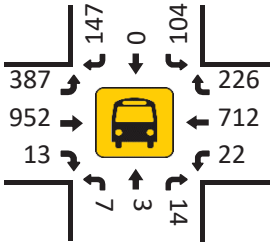
Pedestrians (Crosswalks)



Bikes (PM)

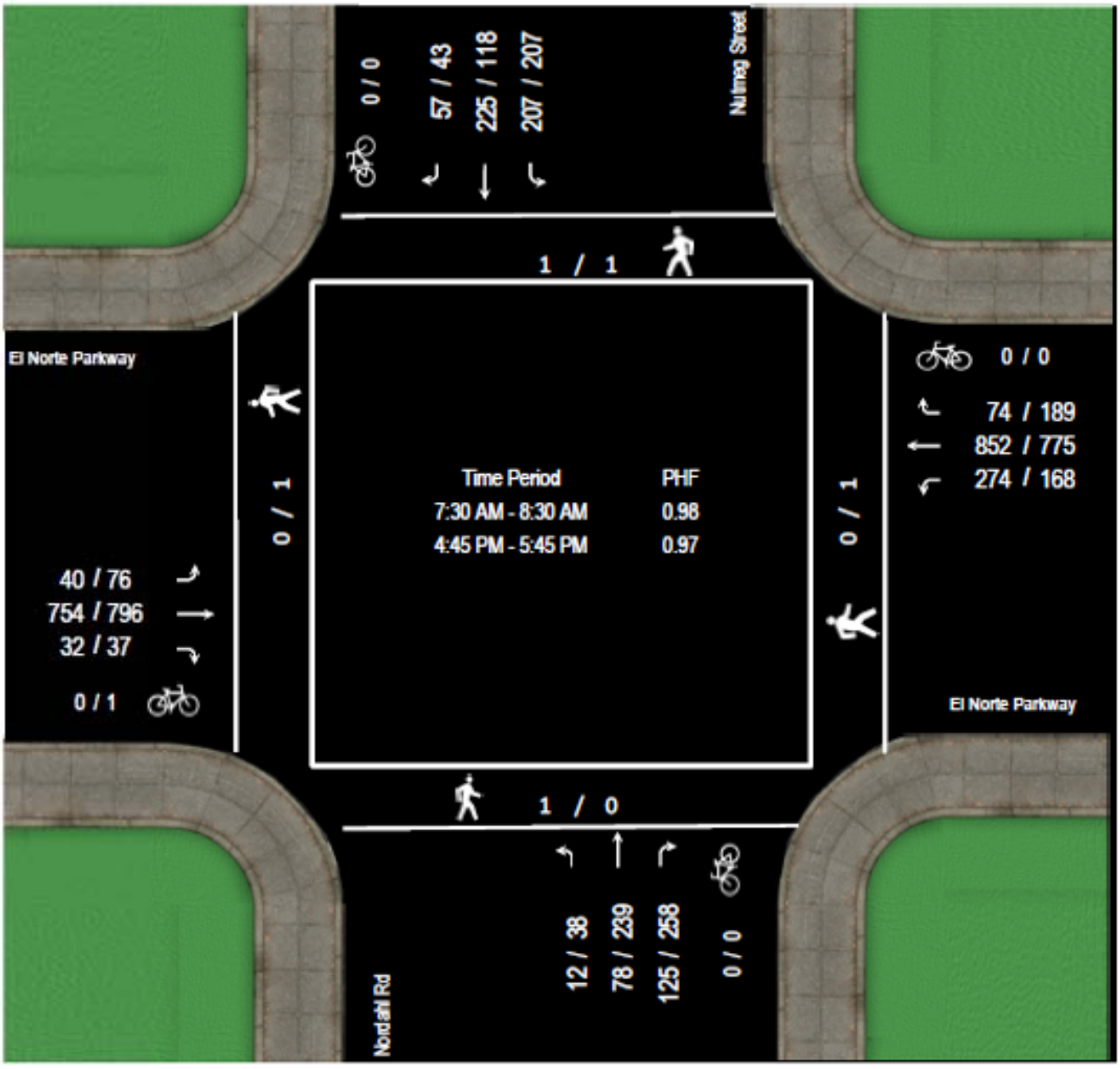


Total Vehicles (PM)



Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location:	El Norte Parkway	@	Nutmeg Street
Date of Count:	*Tuesday, May 17, 2016*		
Analysts:	*LV/CD*		
Weather:	*Sunny*		
AVC Proj No:	*16-0521*		



Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location: El Norte Parkway @ Nutmeg Street

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
7:00 AM	9	45	56	19	185	57	32	11	3	2	202	13	634
7:15 AM	14	45	49	12	219	67	24	14	2	4	172	8	630
7:30 AM	16	63	49	17	234	67	24	11	3	8	177	14	683
7:45 AM	12	71	49	14	215	64	26	25	1	14	179	11	681
8:00 AM	15	57	59	17	179	75	32	20	6	7	191	11	669
8:15 AM	14	34	50	26	224	68	43	22	2	3	207	4	697
8:30 AM	6	30	55	18	150	53	43	12	1	5	171	6	550
8:45 AM	4	15	47	29	145	61	32	12	6	4	164	9	528
Total	90	360	414	152	1,551	512	256	127	24	47	1,463	76	5,072

AM Intersection Peak Hour : **7:30 AM - 8:30 AM** Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	57	225	207	74	852	274	125	78	12	32	754	40	2,730
PHF	0.89	0.79	0.88	0.71	0.91	0.91	0.73	0.78	0.50	0.57	0.91	0.71	0.98
Movement PHF		0.93			0.94			0.80			0.96		0.98

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
4:00 PM	2	23	33	51	185	46	71	56	4	15	168	20	674
4:15 PM	3	30	35	59	218	38	70	43	10	12	204	15	737
4:30 PM	4	18	51	52	187	50	51	63	15	5	162	18	676
4:45 PM	4	20	43	55	209	41	55	54	7	12	213	16	729
5:00 PM	16	40	56	41	182	42	43	61	11	11	204	23	730
5:15 PM	11	29	53	49	185	45	72	57	11	7	187	17	723
5:30 PM	12	29	55	44	199	40	88	67	9	7	192	20	762
5:45 PM	11	17	65	35	193	46	46	68	10	6	202	18	717
Total	63	206	391	386	1,558	348	496	469	77	75	1,532	147	5,748

PM Intersection Peak Hour : **4:45 PM - 5:45 PM** Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	43	118	207	189	775	168	258	239	38	37	796	76	2944
PHF	0.67	0.738	0.924	0.859	0.927	0.933	0.733	0.892	0.864	0.771	0.934	0.826	0.97
Movement PHF		0.82			0.93			0.82			0.94		0.97

Prepared by NDS/ATD

VOLUME

N Nutmeg St Bet. N Centre City Pkwy & I-15 Underpass

Day: Tuesday
Date: 9/12/2017

City: Escondido
Project #: CA17_4284_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	930	1,280	2,210

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			14		5		19	
00:15			1		0		1		12:15			14		6		20	
00:30			1		0		1		12:30			12		5		17	
00:45			0	2	1	1	1	3	12:45			9	49	13	29	22	78
01:00			0		1		1		13:00			13		6		19	
01:15			0		0		0		13:15			19		8		27	
01:30			0		0		0		13:30			9		8		17	
01:45			0		0	1	0	1	13:45			10	51	9	31	19	82
02:00			0		0		0		14:00			7		14		21	
02:15			1		0		1		14:15			11		10		21	
02:30			1		0		1		14:30			18		12		30	
02:45			0	2	0		0	2	14:45			20	56	15	51	35	107
03:00			0		0		0		15:00			20		13		33	
03:15			0		0		0		15:15			15		10		25	
03:30			0		0		0		15:30			24		13		37	
03:45			1	1	1	1	2	2	15:45			20	79	17	53	37	132
04:00			0		0		0		16:00			22		12		34	
04:15			0		0		0		16:15			26		10		36	
04:30			0		1		1		16:30			21		6		27	
04:45			0		0	1	0	1	16:45			20	89	13	41	33	130
05:00			1		3		4		17:00			38		19		57	
05:15			0		1		1		17:15			22		9		31	
05:30			2		5		7		17:30			40		10		50	
05:45			2	5	5	14	7	19	17:45			35	135	9	47	44	182
06:00			3		11		14		18:00			46		7		53	
06:15			4		11		15		18:15			52		9		61	
06:30			4		20		24		18:30			60		6		66	
06:45			6	17	36	78	42	95	18:45			19	177	6	28	25	205
07:00			7		39		46		19:00			13		7		20	
07:15			4		68		72		19:15			17		4		21	
07:30			17		55		72		19:30			13		5		18	
07:45			12	40	83	245	95	285	19:45			8	51	1	17	9	68
08:00			6		67		73		20:00			11		1		12	
08:15			9		81		90		20:15			5		3		8	
08:30			11		88		99		20:30			5		4		9	
08:45			6	32	97	333	103	365	20:45			5	26	3	11	8	37
09:00			5		90		95		21:00			2		2		4	
09:15			5		88		93		21:15			6		3		9	
09:30			5		24		29		21:30			4		3		7	
09:45			3	18	13	215	16	233	21:45			5	17	1	9	6	26
10:00			5		5		10		22:00			4		2		6	
10:15			3		5		8		22:15			2		1		3	
10:30			7		7		14		22:30			6		2		8	
10:45			8	23	7	24	15	47	22:45			2	14	2	7	4	21
11:00			10		10		20		23:00			1		1		2	
11:15			11		9		20		23:15			0		1		1	
11:30			8		13		21		23:30			2		1		3	
11:45			10	39	8	40	18	79	23:45			4	7	0	3	4	10
TOTALS				179		953		**1132**	**TOTALS**				751		327		**1078**
SPLIT %				15.8%		84.2%		**51.2%**	**SPLIT %**				69.7%		30.3%		**48.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	930	1,280	2,210

AM Peak Hour			11:45	08:30	**08:30**	**PM Peak Hour**			17:45	15:00	**17:45**
AM Pk Volume			50	363	**390**	**PM Pk Volume**			193	53	**224**
Pk Hr Factor			0.893	0.936	**0.947**	**Pk Hr Factor**			0.804	0.779	**0.848**
7 - 9 Volume	0	0	72	578	**650**	**4 - 6 Volume**	0	0	224	88	**312**
7 - 9 Peak Hour			07:30	08:00	**08:00**	**4 - 6 Peak Hour**			17:00	16:45	**17:00**
7 - 9 Pk Volume	0	0	44	333	**365**	**4 - 6 Pk Volume**	0	0	135	51	**182**
Pk Hr Factor	0.000	0.000	0.647	0.858	**0.886**	**Pk Hr Factor**	0.000	0.000	0.844	0.671	**0.798**

Prepared by NDS/ATD

VOLUME

N Nutmeg St Bet. I-15 Underpass & W Country Club Ln

Day: Tuesday
Date: 9/12/2017

City: Escondido
Project #: CA17_4284_002

DAILY TOTALS	NB	SB	EB	WB	Total
	1,320	1,672	0	0	2,992

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	17		11				28	
00:15	1		0				1		12:15	24		11				35	
00:30	1		0				1		12:30	13		9				22	
00:45	1	3	1	1			2	4	12:45	13	67	20	51			33	118
01:00	0		1				1		13:00	20		13				33	
01:15	0		0				0		13:15	28		12				40	
01:30	3		1				4		13:30	13		10				23	
01:45	0	3	3	5			3	8	13:45	15	76	19	54			34	130
02:00	0		0				0		14:00	13		20				33	
02:15	1		0				1		14:15	18		19				37	
02:30	2		0				2		14:30	26		18				44	
02:45	0	3	0				0	3	14:45	24	81	17	74			41	155
03:00	0		1				1		15:00	26		19				45	
03:15	0		0				0		15:15	26		17				43	
03:30	1		0				1		15:30	31		14				45	
03:45	0	1	1	2			1	3	15:45	31	114	25	75			56	189
04:00	1		1				2		16:00	30		20				50	
04:15	0		3				3		16:15	31		14				45	
04:30	0		1				1		16:30	35		7				42	
04:45	0	1	1	6			1	7	16:45	33	129	15	56			48	185
05:00	2		4				6		17:00	45		22				67	
05:15	1		2				3		17:15	37		13				50	
05:30	2		11				13		17:30	47		12				59	
05:45	5	10	8	25			13	35	17:45	43	172	12	59			55	231
06:00	2		23				25		18:00	57		15				72	
06:15	4		15				19		18:15	58		14				72	
06:30	7		27				34		18:30	69		14				83	
06:45	8	21	45	110			53	131	18:45	23	207	10	53			33	260
07:00	5		51				56		19:00	28		11				39	
07:15	9		75				84		19:15	26		7				33	
07:30	20		82				102		19:30	15		6				21	
07:45	19	53	93	301			112	354	19:45	11	80	2	26			13	106
08:00	12		79				91		20:00	15		3				18	
08:15	16		98				114		20:15	10		4				14	
08:30	11		97				108		20:30	13		5				18	
08:45	7	46	102	376			109	422	20:45	9	47	6	18			15	65
09:00	9		95				104		21:00	9		2				11	
09:15	5		98				103		21:15	10		4				14	
09:30	13		30				43		21:30	8		6				14	
09:45	11	38	23	246			34	284	21:45	9	36	3	15			12	51
10:00	8		9				17		22:00	6		2				8	
10:15	10		12				22		22:15	5		2				7	
10:30	10		16				26		22:30	6		4				10	
10:45	12	40	12	49			24	89	22:45	4	21	2	10			6	31
11:00	15		17				32		23:00	1		1				2	
11:15	16		11				27		23:15	2		2				4	
11:30	11		15				26		23:30	3		0				3	
11:45	17	59	14	57			31	116	23:45	6	12	0	3			6	15
TOTALS		278		1178				**1456**	**TOTALS**		1042		494				**1536**
SPLIT %		19.1%		80.9%				**48.7%**	**SPLIT %**		67.8%		32.2%				**51.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	1,320	1,672	0	0	2,992

AM Peak Hour	11:45	08:15				**08:15**	**PM Peak Hour**	17:45	13:45				**17:45**
AM Pk Volume	71	392				**435**	**PM Pk Volume**	227	76				**282**
Pk Hr Factor	0.740	0.961				**0.954**	**Pk Hr Factor**	0.822	0.950				**0.849**
7 - 9 Volume	99	677	0	0		**776**	**4 - 6 Volume**	301	115	0	0		**416**
7 - 9 Peak Hour	07:30	08:00				**07:45**	**4 - 6 Peak Hour**	17:00	16:45				**17:00**
7 - 9 Pk Volume	67	376	0	0		**425**	**4 - 6 Pk Volume**	172	62	0	0		**231**
Pk Hr Factor	0.838	0.922	0.000	0.000		**0.932**	**Pk Hr Factor**	0.915	0.705	0.000	0.000		**0.862**

Prepared by NDS/ATD

VOLUME

N Nutmeg St Bet. Country Club Ln & Via Alexandra

Day: Wednesday
Date: 1/23/2019

City: Escondido
Project #: CA19_4027_001

DAILY TOTALS	NB	SB	EB	WB	Total
	3,757	3,769	0	0	7,526

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	7		1				8		12:00	47		36				83	
00:15	3		2				5		12:15	68		50				118	
00:30	4		2				6		12:30	53		49				102	
00:45	3	17	1	6			4	23	12:45	63	231	40	175			103	406
01:00	1		3				4		13:00	47		38				85	
01:15	2		1				3		13:15	60		44				104	
01:30	1		0				1		13:30	57		41				98	
01:45	4	8	2	6			6	14	13:45	64	228	44	167			108	395
02:00	2		3				5		14:00	66		52				118	
02:15	2		1				3		14:15	83		38				121	
02:30	2		1				3		14:30	70		55				125	
02:45	2	8	0	5			2	13	14:45	88	307	71	216			159	523
03:00	2		1				3		15:00	68		75				143	
03:15	0		6				6		15:15	88		45				133	
03:30	0		4				4		15:30	79		36				115	
03:45	0	2	7	18			7	20	15:45	67	302	46	202			113	504
04:00	2		5				7		16:00	104		42				146	
04:15	0		7				7		16:15	110		40				150	
04:30	0		9				9		16:30	102		59				161	
04:45	2	4	17	38			19	42	16:45	105	421	53	194			158	615
05:00	1		26				27		17:00	104		66				170	
05:15	6		28				34		17:15	120		43				163	
05:30	4		28				32		17:30	101		52				153	
05:45	2	13	41	123			43	136	17:45	109	434	49	210			158	644
06:00	6		71				77		18:00	98		63				161	
06:15	13		59				72		18:15	71		44				115	
06:30	16		77				93		18:30	80		32				112	
06:45	17	52	78	285			95	337	18:45	74	323	43	182			117	505
07:00	46		81				127		19:00	53		36				89	
07:15	54		169				223		19:15	59		20				79	
07:30	37		172				209		19:30	60		34				94	
07:45	42	179	146	568			188	747	19:45	58	230	22	112			80	342
08:00	46		105				151		20:00	43		18				61	
08:15	28		113				141		20:15	40		16				56	
08:30	32		56				88		20:30	33		19				52	
08:45	31	137	69	343			100	480	20:45	38	154	13	66			51	220
09:00	38		55				93		21:00	31		14				45	
09:15	32		45				77		21:15	23		8				31	
09:30	34		83				117		21:30	35		14				49	
09:45	33	137	78	261			111	398	21:45	25	114	5	41			30	155
10:00	33		97				130		22:00	17		7				24	
10:15	42		78				120		22:15	7		8				15	
10:30	41		63				104		22:30	24		6				30	
10:45	42	158	50	288			92	446	22:45	10	58	7	28			17	86
11:00	45		59				104		23:00	10		6				16	
11:15	46		53				99		23:15	8		2				10	
11:30	50		56				106		23:30	10		2				12	
11:45	64	205	56	224			120	429	23:45	7	35	1	11			8	46
TOTALS		920		2165				**3085**	**TOTALS**		2837		1604				**4441**
SPLIT %		29.8%		70.2%				**41.0%**	**SPLIT %**		63.9%		36.1%				**59.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	3,757	3,769	0	0	7,526

AM Peak Hour	11:45	07:15					**07:15**		**PM Peak Hour**	17:00	14:30					**16:30**		
AM Pk Volume	232	592					**771**		**PM Pk Volume**	434	246					**652**		
Pk Hr Factor	0.853	0.860					**0.864**		**Pk Hr Factor**	0.904	0.820					**0.959**		
7 - 9 Volume	316	911	0	0			**1227**		**4 - 6 Volume**	855	404	0	0			**1259**		
7 - 9 Peak Hour	07:00	07:15					**07:15**		**4 - 6 Peak Hour**	17:00	16:30					**16:30**		
7 - 9 Pk Volume	179	592	0	0			**771**		**4 - 6 Pk Volume**	434	221	0	0			**652**		
Pk Hr Factor	0.829	0.860	0.000	0.000			**0.864**		**Pk Hr Factor**	0.904	0.837	0.000	0.000			**0.959**		

Prepared by NDS/ATD

VOLUME

N Nutmeg St Bet. Via Alexandra & El Norte Pkwy

Day: Wednesday
Date: 1/23/2019

City: Escondido
Project #: CA19_4027_002

DAILY TOTALS	NB	SB	EB	WB	Total
	4,562	4,507	0	0	9,069

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	9		1						10		12:00	68		52						120	
00:15	5		4						9		12:15	82		54						136	
00:30	8		2						10		12:30	52		51						103	
00:45	4	26	0	7					4	33	12:45	74	276	51	208					125	484
01:00	1		3						4		13:00	56		51						107	
01:15	5		3						8		13:15	66		44						110	
01:30	3		0						3		13:30	63		46						109	
01:45	6	15	4	10					10	25	13:45	75	260	54	195					129	455
02:00	1		3						4		14:00	76		68						144	
02:15	3		1						4		14:15	101		51						152	
02:30	1		1						2		14:30	80		60						140	
02:45	2	7	1	6					3	13	14:45	110	367	65	244					175	611
03:00	3		1						4		15:00	90		84						174	
03:15	0		5						5		15:15	104		63						167	
03:30	1		6						7		15:30	103		55						158	
03:45	0	4	7	19					7	23	15:45	89	386	65	267					154	653
04:00	4		8						12		16:00	133		51						184	
04:15	2		12						14		16:15	140		42						182	
04:30	0		14						14		16:30	132		67						199	
04:45	1	7	22	56					23	63	16:45	126	531	67	227					193	758
05:00	2		31						33		17:00	131		75						206	
05:15	3		45						48		17:15	142		59						201	
05:30	2		39						41		17:30	128		55						183	
05:45	5	12	55	170					60	182	17:45	125	526	55	244					180	770
06:00	7		89						96		18:00	123		72						195	
06:15	15		72						87		18:15	95		53						148	
06:30	21		96						117		18:30	91		41						132	
06:45	19	62	91	348					110	410	18:45	92	401	56	222					148	623
07:00	29		103						132		19:00	69		36						105	
07:15	42		184						226		19:15	73		24						97	
07:30	35		192						227		19:30	68		34						102	
07:45	35	141	158	637					193	778	19:45	75	285	24	118					99	403
08:00	46		119						165		20:00	49		26						75	
08:15	35		128						163		20:15	53		17						70	
08:30	39		86						125		20:30	46		22						68	
08:45	41	161	79	412					120	573	20:45	43	191	17	82					60	273
09:00	45		67						112		21:00	43		16						59	
09:15	38		62						100		21:15	47		5						52	
09:30	43		100						143		21:30	48		16						64	
09:45	39	165	94	323					133	488	21:45	32	170	11	48					43	218
10:00	39		110						149		22:00	21		9						30	
10:15	49		90						139		22:15	9		10						19	
10:30	47		81						128		22:30	28		10						38	
10:45	60	195	55	336					115	531	22:45	20	78	8	37					28	115
11:00	52		72						124		23:00	8		9						17	
11:15	59		65						124		23:15	16		3						19	
11:30	60		67						127		23:30	10		3						13	
11:45	83	254	70	274					153	528	23:45	8	42	2	17					10	59
TOTALS		1049		2598						**3647**	**TOTALS**		3513		1909						**5422**
SPLIT %		28.8%		71.2%						**40.2%**	**SPLIT %**		64.8%		35.2%						**59.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,562	4,507	0	0	9,069

AM Peak Hour	11:30	07:15			**07:15**	**PM Peak Hour**	16:00	14:30			**16:30**
AM Pk Volume	293	653			**811**	**PM Pk Volume**	531	272			**799**
Pk Hr Factor	0.883	0.850			**0.893**	**Pk Hr Factor**	0.948	0.810			**0.970**
7 - 9 Volume	302	1049	0	0	**1351**	**4 - 6 Volume**	1057	471	0	0	**1528**
7 - 9 Peak Hour	08:00	07:15			**07:15**	**4 - 6 Peak Hour**	16:00	16:30			**16:30**
7 - 9 Pk Volume	161	653	0	0	**811**	**4 - 6 Pk Volume**	531	268	0	0	**799**
Pk Hr Factor	0.875	0.850	0.000	0.000	**0.893**	**Pk Hr Factor**	0.948	0.893	0.000	0.000	**0.970**

Prepared by NDS/ATD

VOLUME

N Centre City Pkwy Bet. N Nutmeg St & W Country Club Ln

Day: Tuesday
Date: 9/12/2017

City: Escondido
Project #: CA17_4284_003

DAILY TOTALS	NB	SB	EB	WB	Total
	3,553	4,394	0	0	7,947

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	6		5				11		12:00	32		42				74	
00:15	2		0				2		12:15	43		38				81	
00:30	2		2				4		12:30	37		41				78	
00:45	0	10	0	7			0	17	12:45	45	157	37	158			82	315
01:00	0		0				0		13:00	48		32				80	
01:15	1		0				1		13:15	49		44				93	
01:30	1		3				4		13:30	43		42				85	
01:45	1	3	1	4			2	7	13:45	46	186	34	152			80	338
02:00	0		1				1		14:00	50		44				94	
02:15	0		0				0		14:15	43		44				87	
02:30	2		1				3		14:30	39		48				87	
02:45	0	2	1	3			1	5	14:45	65	197	59	195			124	392
03:00	1		3				4		15:00	74		42				116	
03:15	1		2				3		15:15	73		52				125	
03:30	0		0				0		15:30	81		60				141	
03:45	1	3	2	7			3	10	15:45	81	309	43	197			124	506
04:00	1		3				4		16:00	65		54				119	
04:15	3		4				7		16:15	96		32				128	
04:30	4		9				13		16:30	88		48				136	
04:45	2	10	7	23			9	33	16:45	104	353	32	166			136	519
05:00	1		12				13		17:00	108		47				155	
05:15	4		18				22		17:15	122		43				165	
05:30	13		14				27		17:30	142		46				188	
05:45	12	30	26	70			38	100	17:45	150	522	51	187			201	709
06:00	15		28				43		18:00	141		43				184	
06:15	14		34				48		18:15	199		33				232	
06:30	21		81				102		18:30	153		36				189	
06:45	18	68	87	230			105	298	18:45	104	597	35	147			139	744
07:00	15		134				149		19:00	85		23				108	
07:15	20		178				198		19:15	59		29				88	
07:30	39		197				236		19:30	33		21				54	
07:45	43	117	170	679			213	796	19:45	29	206	18	91			47	297
08:00	45		196				241		20:00	26		11				37	
08:15	28		248				276		20:15	24		13				37	
08:30	36		257				293		20:30	30		15				45	
08:45	38	147	270	971			308	1118	20:45	26	106	7	46			33	152
09:00	26		234				260		21:00	24		11				35	
09:15	38		242				280		21:15	15		11				26	
09:30	31		106				137		21:30	15		7				22	
09:45	34	129	46	628			80	757	21:45	14	68	3	32			17	100
10:00	26		45				71		22:00	16		3				19	
10:15	32		40				72		22:15	12		10				22	
10:30	36		34				70		22:30	11		7				18	
10:45	36	130	50	169			86	299	22:45	9	48	6	26			15	74
11:00	24		51				75		23:00	7		9				16	
11:15	34		53				87		23:15	4		1				5	
11:30	35		41				76		23:30	4		2				6	
11:45	41	134	44	189			85	323	23:45	6	21	5	17			11	38
TOTALS		783		2980				**3763**	**TOTALS**		2770		1414				**4184**
SPLIT %		20.8%		79.2%				**47.4%**	**SPLIT %**		66.2%		33.8%				**52.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	3,553	4,394	0	0	7,947

AM Peak Hour	07:30	08:15			**08:30**	**PM Peak Hour**	17:45	14:45			**17:45**
AM Pk Volume	155	1009			**1141**	**PM Pk Volume**	643	213			**806**
Pk Hr Factor	0.861	0.934			**0.926**	**Pk Hr Factor**	0.808	0.888			**0.869**
7 - 9 Volume	264	1650	0	0	**1914**	**4 - 6 Volume**	875	353	0	0	**1228**
7 - 9 Peak Hour	07:30	08:00			**08:00**	**4 - 6 Peak Hour**	17:00	17:00			**17:00**
7 - 9 Pk Volume	155	971	0	0	**1118**	**4 - 6 Pk Volume**	522	187	0	0	**709**
Pk Hr Factor	0.861	0.899	0.000	0.000	**0.907**	**Pk Hr Factor**	0.870	0.917	0.000	0.000	**0.882**

Prepared by NDS/ATD

VOLUME

N Centre City Pkwy Bet. W Country Club Ln & S Iris Ln

Day: Tuesday
Date: 9/12/2017

City: Escondido
Project #: CA17_4284_004

DAILY TOTALS	NB	SB	EB	WB	Total
	7,056	8,830	0	0	15,886

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	13		8				21		12:00	85		88				173	
00:15	10		4				14		12:15	86		89				175	
00:30	9		4				13		12:30	82		88				170	
00:45	4	36	3	19			7	55	12:45	105	358	88	353			193	711
01:00	4		2				6		13:00	97		85				182	
01:15	5		5				10		13:15	98		97				195	
01:30	7		4				11		13:30	99		103				202	
01:45	5	21	3	14			8	35	13:45	86	380	92	377			178	757
02:00	1		3				4		14:00	97		82				179	
02:15	2		2				4		14:15	98		97				195	
02:30	2		1				3		14:30	120		116				236	
02:45	4	9	1	7			5	16	14:45	124	439	136	431			260	870
03:00	3		4				7		15:00	123		117				240	
03:15	4		4				8		15:15	158		124				282	
03:30	1		4				5		15:30	161		127				288	
03:45	6	14	10	22			16	36	15:45	132	574	109	477			241	1051
04:00	2		11				13		16:00	148		113				261	
04:15	2		17				19		16:15	164		100				264	
04:30	8		21				29		16:30	149		106				255	
04:45	8	20	34	83			42	103	16:45	165	626	113	432			278	1058
05:00	8		41				49		17:00	173		108				281	
05:15	19		62				81		17:15	214		100				314	
05:30	36		56				92		17:30	215		105				320	
05:45	30	93	74	233			104	326	17:45	217	819	92	405			309	1224
06:00	51		89				140		18:00	186		111				297	
06:15	37		102				139		18:15	275		73				348	
06:30	53		153				206		18:30	188		87				275	
06:45	64	205	163	507			227	712	18:45	147	796	81	352			228	1148
07:00	74		251				325		19:00	142		67				209	
07:15	89		314				403		19:15	111		65				176	
07:30	112		359				471		19:30	82		53				135	
07:45	94	369	334	1258			428	1627	19:45	82	417	49	234			131	651
08:00	87		317				404		20:00	63		38				101	
08:15	116		391				507		20:15	68		32				100	
08:30	75		442				517		20:30	70		34				104	
08:45	70	348	371	1521			441	1869	20:45	65	266	28	132			93	398
09:00	75		336				411		21:00	49		27				76	
09:15	78		308				386		21:15	43		29				72	
09:30	69		192				261		21:30	44		32				76	
09:45	72	294	130	966			202	1260	21:45	47	183	16	104			63	287
10:00	65		105				170		22:00	25		9				34	
10:15	76		94				170		22:15	28		20				48	
10:30	75		109				184		22:30	35		21				56	
10:45	74	290	95	403			169	693	22:45	25	113	15	65			40	178
11:00	72		106				178		23:00	20		15				35	
11:15	96		102				198		23:15	15		10				25	
11:30	81		100				181		23:30	14		11				25	
11:45	72	321	82	390			154	711	23:45	16	65	9	45			25	110
TOTALS		2020		5423				7443	TOTALS		5036		3407				8443
SPLIT %		27.1%		72.9%				46.9%	SPLIT %		59.6%		40.4%				53.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	7,056	8,830	0	0	15,886

AM Peak Hour	07:30	08:15				08:15	PM Peak Hour	17:30	14:45				17:30
AM Pk Volume	409	1540				1876	PM Pk Volume	893	504				1274
Pk Hr Factor	0.881	0.871				0.907	Pk Hr Factor	0.812	0.926				0.915
7 - 9 Volume	717	2779	0	0		3496	4 - 6 Volume	1445	837	0	0		2282
7 - 9 Peak Hour	07:30	08:00				08:00	4 - 6 Peak Hour	17:00	16:00				17:00
7 - 9 Pk Volume	409	1521	0	0		1869	4 - 6 Pk Volume	819	432	0	0		1224
Pk Hr Factor	0.881	0.860	0.000	0.000		0.904	Pk Hr Factor	0.944	0.956	0.000	0.000		0.956

Prepared by NDS/ATD

VOLUME

N Centre City Pkwy Bet. S Iris Ln & W El Norte Pkwy

Day: Tuesday
Date: 9/12/2017

City: Escondido
Project #: CA17_4284_005

DAILY TOTALS	NB	SB	EB	WB	Total
	7,830	10,549	0	0	18,379

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	9		8						17		12:00	95		108						203	
00:15	14		8						22		12:15	101		112						213	
00:30	14		4						18		12:30	99		114						213	
00:45	6	43	6	26					12	69	12:45	123	418	107	441					230	859
01:00	5		1						6		13:00	117		108						225	
01:15	6		7						13		13:15	116		111						227	
01:30	8		3						11		13:30	112		127						239	
01:45	5	24	2	13					7	37	13:45	109	454	126	472					235	926
02:00	2		2						4		14:00	125		129						254	
02:15	2		4						6		14:15	126		130						256	
02:30	1		4						5		14:30	131		151						282	
02:45	5	10	3	13					8	23	14:45	145	527	185	595					330	1122
03:00	3		8						11		15:00	141		158						299	
03:15	4		6						10		15:15	178		129						307	
03:30	1		5						6		15:30	180		153						333	
03:45	7	15	11	30					18	45	15:45	161	660	135	575					296	1235
04:00	5		11						16		16:00	151		139						290	
04:15	3		22						25		16:15	175		117						292	
04:30	8		24						32		16:30	167		135						302	
04:45	10	26	38	95					48	121	16:45	184	677	135	526					319	1203
05:00	8		48						56		17:00	190		123						313	
05:15	18		77						95		17:15	196		117						313	
05:30	38		89						127		17:30	261		113						374	
05:45	33	97	98	312					131	409	17:45	219	866	134	487					353	1353
06:00	53		127						180		18:00	215		127						342	
06:15	39		158						197		18:15	261		82						343	
06:30	61		198						259		18:30	200		92						292	
06:45	64	217	229	712					293	929	18:45	151	827	112	413					263	1240
07:00	96		315						411		19:00	150		92						242	
07:15	132		372						504		19:15	113		88						201	
07:30	111		434						545		19:30	100		67						167	
07:45	102	441	417	1538					519	1979	19:45	65	428	63	310					128	738
08:00	90		378						468		20:00	71		51						122	
08:15	104		426						530		20:15	87		40						127	
08:30	89		375						464		20:30	88		37						125	
08:45	80	363	353	1532					433	1895	20:45	73	319	35	163					108	482
09:00	76		351						427		21:00	69		30						99	
09:15	68		339						407		21:15	46		34						80	
09:30	72		213						285		21:30	44		30						74	
09:45	75	291	157	1060					232	1351	21:45	55	214	20	114					75	328
10:00	91		137						228		22:00	31		12						43	
10:15	68		136						204		22:15	37		12						49	
10:30	89		128						217		22:30	49		25						74	
10:45	85	333	123	524					208	857	22:45	42	159	20	69					62	228
11:00	72		118						190		23:00	13		11						24	
11:15	102		128						230		23:15	18		12						30	
11:30	102		131						233		23:30	13		6						19	
11:45	82	358	114	491					196	849	23:45	19	63	9	38					28	101
TOTALS		2218		6346						**8564**	**TOTALS**		5612		4203						**9815**
SPLIT %		25.9%		74.1%						**46.6%**	**SPLIT %**		57.2%		42.8%						**53.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	7,830	10,549	0	0	18,379

AM Peak Hour	07:00	07:30			**07:30**	**PM Peak Hour**	17:30	14:45			**17:30**
AM Pk Volume	441	1655			**2062**	**PM Pk Volume**	956	625			**1412**
Pk Hr Factor	0.835	0.953			**0.946**	**Pk Hr Factor**	0.916	0.845			**0.944**
7 - 9 Volume	804	3070	0	0	**3874**	**4 - 6 Volume**	1543	1013	0	0	**2556**
7 - 9 Peak Hour	07:00	07:30			**07:30**	**4 - 6 Peak Hour**	17:00	16:00			**17:00**
7 - 9 Pk Volume	441	1655	0	0	**2062**	**4 - 6 Pk Volume**	866	526	0	0	**1353**
Pk Hr Factor	0.835	0.953	0.000	0.000	**0.946**	**Pk Hr Factor**	0.830	0.946	0.000	0.000	**0.904**

Prepared by NDS/ATD

VOLUME

S Iris Ln Bet. N Centre City Pkwy & W El Norte Pkwy

Day: Tuesday
Date: 9/12/2017

City: Escondido
Project #: CA17_4284_006

DAILY TOTALS	NB	SB	EB	WB	Total
	3,955	2,666	0	0	6,621

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	7		3				10		12:00	42		27				69	
00:15	5		1				6		12:15	38		22				60	
00:30	2		1				3		12:30	48		30				78	
00:45	8	22	1	6			9	28	12:45	58	186	28	107			86	293
01:00	4		1				5		13:00	51		33				84	
01:15	5		0				5		13:15	50		26				76	
01:30	1		2				3		13:30	45		23				68	
01:45	2	12	2	5			4	17	13:45	59	205	19	101			78	306
02:00	5		3				8		14:00	61		28				89	
02:15	3		2				5		14:15	86		32				118	
02:30	2		0				2		14:30	86		50				136	
02:45	1	11	1	6			2	17	14:45	67	300	60	170			127	470
03:00	1		3				4		15:00	80		56				136	
03:15	1		1				2		15:15	77		27				104	
03:30	1		3				4		15:30	95		38				133	
03:45	1	4	6	13			7	17	15:45	71	323	30	151			101	474
04:00	1		4				5		16:00	97		29				126	
04:15	1		9				10		16:15	119		28				147	
04:30	0		12				12		16:30	97		22				119	
04:45	3	5	11	36			14	41	16:45	105	418	39	118			144	536
05:00	4		19				23		17:00	119		32				151	
05:15	8		26				34		17:15	139		33				172	
05:30	4		42				46		17:30	113		29				142	
05:45	11	27	49	136			60	163	17:45	117	488	25	119			142	607
06:00	16		39				55		18:00	100		39				139	
06:15	23		57				80		18:15	132		33				165	
06:30	20		62				82		18:30	108		30				138	
06:45	35	94	44	202			79	296	18:45	71	411	32	134			103	545
07:00	52		91				143		19:00	72		24				96	
07:15	71		72				143		19:15	78		21				99	
07:30	72		87				159		19:30	65		15				80	
07:45	42	237	96	346			138	583	19:45	47	262	16	76			63	338
08:00	40		93				133		20:00	51		12				63	
08:15	35		82				117		20:15	34		14				48	
08:30	24		75				99		20:30	34		14				48	
08:45	30	129	106	356			136	485	20:45	41	160	12	52			53	212
09:00	25		81				106		21:00	35		12				47	
09:15	41		40				81		21:15	32		8				40	
09:30	32		41				73		21:30	31		9				40	
09:45	20	118	35	197			55	315	21:45	31	129	6	35			37	164
10:00	27		36				63		22:00	23		4				27	
10:15	23		29				52		22:15	17		17				34	
10:30	31		24				55		22:30	20		4				24	
10:45	37	118	34	123			71	241	22:45	12	72	3	28			15	100
11:00	35		30				65		23:00	21		11				32	
11:15	38		32				70		23:15	10		8				18	
11:30	42		27				69		23:30	9		6				15	
11:45	52	167	30	119			82	286	23:45	17	57	5	30			22	87
TOTALS		944		1545				2489	TOTALS		3011		1121				4132
SPLIT %		37.9%		62.1%				37.6%	SPLIT %		72.9%		27.1%				62.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	3,955	2,666	0	0	6,621

AM Peak Hour	07:00	07:30					07:00		PM Peak Hour	17:00	14:15					16:45		
AM Pk Volume	237	358					583		PM Pk Volume	488	198					609		
Pk Hr Factor	0.823	0.932					0.917		Pk Hr Factor	0.878	0.825					0.885		
7 - 9 Volume	366	702	0	0			1068		4 - 6 Volume	906	237	0	0			1143		
7 - 9 Peak Hour	07:00	07:30					07:00		4 - 6 Peak Hour	17:00	16:45					16:45		
7 - 9 Pk Volume	237	358	0	0			583		4 - 6 Pk Volume	488	133	0	0			609		
Pk Hr Factor	0.823	0.932	0.000	0.000			0.917		Pk Hr Factor	0.878	0.853	0.000	0.000			0.885		

Prepared by NDS/ATD

VOLUME

W El Norte Pkwy Bet. S Iris Ln & I-15

Day: Tuesday
Date: 9/12/2017

City: Escondido
Project #: CA17_4284_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	13,932	13,307	27,239

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			23		20		43		12:00			202		193		395	
00:15			15		15		30		12:15			213		191		404	
00:30			19		14		33		12:30			195		155		350	
00:45			18	75	8	57	26	132	12:45			223	833	159	698	382	1531
01:00			12		11		23		13:00			185		162		347	
01:15			14		10		24		13:15			183		167		350	
01:30			11		9		20		13:30			166		183		349	
01:45			13	50	9	39	22	89	13:45			220	754	166	678	386	1432
02:00			9		7		16		14:00			214		219		433	
02:15			8		4		12		14:15			221		233		454	
02:30			7		5		12		14:30			266		213		479	
02:45			13	37	6	22	19	59	14:45			276	977	217	882	493	1859
03:00			11		15		26		15:00			281		253		534	
03:15			9		13		22		15:15			236		255		491	
03:30			8		12		20		15:30			280		233		513	
03:45			11	39	14	54	25	93	15:45			293	1090	195	936	488	2026
04:00			16		20		36		16:00			328		188		516	
04:15			14		25		39		16:15			312		221		533	
04:30			10		36		46		16:30			341		225		566	
04:45			24	64	56	137	80	201	16:45			334	1315	223	857	557	2172
05:00			28		68		96		17:00			328		290		618	
05:15			32		96		128		17:15			332		217		549	
05:30			40		111		151		17:30			372		190		562	
05:45			70	170	138	413	208	583	17:45			317	1349	221	918	538	2267
06:00			54		147		201		18:00			298		213		511	
06:15			111		203		314		18:15			321		205		526	
06:30			107		223		330		18:30			272		174		446	
06:45			161	433	248	821	409	1254	18:45			258	1149	166	758	424	1907
07:00			180		301		481		19:00			207		173		380	
07:15			178		303		481		19:15			182		158		340	
07:30			203		261		464		19:30			157		121		278	
07:45			195	756	280	1145	475	1901	19:45			131	677	129	581	260	1258
08:00			189		284		473		20:00			162		97		259	
08:15			233		240		473		20:15			131		106		237	
08:30			188		257		445		20:30			112		98		210	
08:45			210	820	249	1030	459	1850	20:45			106	511	93	394	199	905
09:00			138		221		359		21:00			119		84		203	
09:15			166		194		360		21:15			93		83		176	
09:30			183		195		378		21:30			96		69		165	
09:45			176	663	197	807	373	1470	21:45			81	389	63	299	144	688
10:00			162		175		337		22:00			63		54		117	
10:15			169		182		351		22:15			70		47		117	
10:30			154		157		311		22:30			73		46		119	
10:45			175	660	192	706	367	1366	22:45			56	262	34	181	90	443
11:00			145		194		339		23:00			48		39		87	
11:15			182		174		356		23:15			49		36		85	
11:30			168		200		368		23:30			36		30		66	
11:45			189	684	198	766	387	1450	23:45			42	175	23	128	65	303
TOTALS				4451		5997		10448	TOTALS				9481		7310		16791
SPLIT %				42.6%		57.4%		38.4%	SPLIT %				56.5%		43.5%		61.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	13,932	13,307	27,239

AM Peak Hour			07:30	07:00	07:00	PM Peak Hour			16:45	16:15	16:30
AM Pk Volume			820	1145	1901	PM Pk Volume			1366	959	2290
Pk Hr Factor			0.880	0.945	0.988	Pk Hr Factor			0.918	0.827	0.926
7 - 9 Volume	0	0	1576	2175	3751	4 - 6 Volume	0	0	2664	1775	4439
7 - 9 Peak Hour			07:30	07:00	07:00	4 - 6 Peak Hour			16:45	16:15	16:30
7 - 9 Pk Volume	0	0	820	1145	1901	4 - 6 Pk Volume	0	0	1366	959	2290
Pk Hr Factor	0.000	0.000	0.880	0.945	0.988	Pk Hr Factor	0.000	0.000	0.918	0.827	0.926

APPENDIX B

Existing Conditions Intersection LOS Worksheets

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	1	4	2	0	0	4	132	7	2	954	331
Future Vol, veh/h	27	1	4	2	0	0	4	132	7	2	954	331
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	1	4	2	0	0	4	147	8	2	1060	368

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1407	1411	1244	1410	1591	151	1428	0	0	154	0	0
Stage 1	1248	1248	-	159	159	-	-	-	-	-	-	-
Stage 2	159	163	-	1251	1432	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	117	138	213	116	107	895	476	-	-	1426	-	-
Stage 1	212	245	-	843	766	-	-	-	-	-	-	-
Stage 2	843	763	-	211	200	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	116	136	213	111	105	895	476	-	-	1426	-	-
Mov Cap-2 Maneuver	116	136	-	111	105	-	-	-	-	-	-	-
Stage 1	210	243	-	836	760	-	-	-	-	-	-	-
Stage 2	836	757	-	204	198	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45.3	38.1	0.4	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	476	-	-	124	111	1426	-	-
HCM Lane V/C Ratio	0.009	-	-	0.287	0.02	0.002	-	-
HCM Control Delay (s)	12.6	-	-	45.3	38.1	7.5	-	-
HCM Lane LOS	B	-	-	E	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	335	129	280	514	128	45	225	106	161	931	313
Future Volume (veh/h)	56	335	129	280	514	128	45	225	106	161	931	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	342	132	286	524	131	46	230	108	164	950	319
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	663	296	320	1125	503	79	938	420	197	1172	524
Arrive On Green	0.05	0.19	0.19	0.18	0.32	0.32	0.04	0.26	0.26	0.11	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	342	132	286	524	131	46	230	108	164	950	319
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.0	8.1	6.9	14.7	11.1	5.8	2.4	4.8	5.0	8.5	23.0	15.8
Cycle Q Clear(g_c), s	3.0	8.1	6.9	14.7	11.1	5.8	2.4	4.8	5.0	8.5	23.0	15.8
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	88	663	296	320	1125	503	79	938	420	197	1172	524
V/C Ratio(X)	0.65	0.52	0.45	0.89	0.47	0.26	0.58	0.25	0.26	0.83	0.81	0.61
Avail Cap(c_a), veh/h	178	1325	593	370	1707	764	114	1079	483	247	1343	601
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	43.6	34.2	33.7	37.5	25.5	23.7	43.8	27.0	27.1	40.7	28.6	26.2
Incr Delay (d2), s/veh	3.0	0.6	1.0	19.6	0.3	0.3	2.5	0.1	0.3	14.7	3.4	1.4
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	1.5	4.0	3.1	9.0	5.4	2.5	1.2	2.3	2.2	4.9	11.8	7.1
LnGrp Delay(d),s/veh	46.6	34.8	34.7	57.1	25.8	24.0	46.3	27.2	27.4	55.5	32.0	27.6
LnGrp LOS	D	C	C	E	C	C	D	C	C	E	C	C
Approach Vol, veh/h		531			941			384			1433	
Approach Delay, s/veh		36.1			35.1			29.5			33.7	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	32.3	21.4	23.5	10.2	38.5	9.1	35.7
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	13.0	28.5	19.5	35.0	6.0	35.5	9.4	45.1
Max Q Clear Time (g_c+I1), s	10.5	7.0	16.7	10.1	4.4	25.0	5.0	13.1
Green Ext Time (p_c), s	0.0	9.0	0.1	7.4	0.0	6.0	0.0	7.9

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	29.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	181	51	326	548	19	9	34	145	59	174	130
Future Vol, veh/h	13	181	51	326	548	19	9	34	145	59	174	130
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	191	54	343	577	20	9	36	153	62	183	137
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	14.8	31.4	18	42.7
HCM LOS	B	D	C	E

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	5%	100%	0%	0%	100%	0%	0%	16%
Vol Thru, %	18%	0%	100%	54%	0%	100%	91%	48%
Vol Right, %	77%	0%	0%	46%	0%	0%	9%	36%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	188	13	121	111	326	365	202	363
LT Vol	9	13	0	0	326	0	0	59
Through Vol	34	0	121	60	0	365	183	174
RT Vol	145	0	0	51	0	0	19	130
Lane Flow Rate	198	14	127	117	343	385	212	382
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.461	0.036	0.312	0.276	0.779	0.817	0.447	0.853
Departure Headway (Hd)	8.381	9.354	8.829	8.491	8.279	7.758	7.689	8.039
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	433	385	409	425	439	469	471	447
Service Time	6.081	7.066	6.54	6.203	5.979	5.458	5.389	5.837
HCM Lane V/C Ratio	0.457	0.036	0.311	0.275	0.781	0.821	0.45	0.855
HCM Control Delay	18	12.4	15.5	14.4	34.6	36.7	16.5	42.7
HCM Lane LOS	C	B	C	B	D	E	C	E
HCM 95th-tile Q	2.4	0.1	1.3	1.1	6.8	7.7	2.3	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	194	11	387	206	9	10	309	135	12	1176	139
Future Volume (veh/h)	59	194	11	387	206	9	10	309	135	12	1176	139
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	63	209	12	416	222	10	11	332	145	13	1265	149
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	683	39	432	692	31	28	1360	608	33	1368	612
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.02	0.38	0.38	0.02	0.39	0.39
Sat Flow, veh/h	1144	1745	100	1155	1769	80	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	63	0	221	416	0	232	11	332	145	13	1265	149
Grp Sat Flow(s),veh/h/ln	1144	0	1845	1155	0	1849	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	0.0	7.8	29.2	0.0	8.3	0.6	6.0	5.9	0.7	32.3	6.0
Cycle Q Clear(g_c), s	12.1	0.0	7.8	37.0	0.0	8.3	0.6	6.0	5.9	0.7	32.3	6.0
Prop In Lane	1.00		0.05	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	424	0	722	432	0	723	28	1360	608	33	1368	612
V/C Ratio(X)	0.15	0.00	0.31	0.96	0.00	0.32	0.39	0.24	0.24	0.40	0.92	0.24
Avail Cap(c_a), veh/h	430	0	732	432	0	723	113	1360	608	206	1403	628
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	24.3	0.0	19.9	34.8	0.0	20.0	46.1	19.8	19.7	45.9	27.7	19.6
Incr Delay (d2), s/veh	0.1	0.0	0.2	33.4	0.0	0.2	3.2	0.2	0.4	2.9	10.9	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	1.2	0.0	4.0	14.8	0.0	4.2	0.3	3.0	2.7	0.4	17.7	2.7
LnGrp Delay(d),s/veh	24.4	0.0	20.1	68.2	0.0	20.2	49.3	20.0	20.2	48.8	38.6	20.1
LnGrp LOS	C		C	E		C	D	B	C	D	D	C
Approach Vol, veh/h		284			648			488			1427	
Approach Delay, s/veh		21.0			51.0			20.7			36.7	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	43.8		43.0	7.5	44.1		43.0
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 33		* 38	6.0	37.5		37.0
Max Q Clear Time (g_c+I1), s	2.7	8.0		14.1	2.6	34.3		39.0
Green Ext Time (p_c), s	0.0	20.0		4.1	0.0	2.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	536	283	288	729	153	172	260	86	258	1103	80
Future Volume (veh/h)	34	536	283	288	729	153	172	260	86	258	1103	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	547	289	294	744	156	176	265	88	263	1126	82
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	816	365	387	880	184	280	1235	552	306	1244	557
Arrive On Green	0.05	0.23	0.23	0.11	0.30	0.30	0.08	0.35	0.35	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	2914	611	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	35	547	289	294	452	448	176	265	88	263	1126	82
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1755	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.6	23.2	28.3	13.7	39.5	39.5	8.2	8.7	3.8	12.4	49.9	4.2
Cycle Q Clear(g_c), s	1.6	23.2	28.3	13.7	39.5	39.5	8.2	8.7	3.8	12.4	49.9	4.2
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	816	365	387	534	530	280	1235	552	306	1244	557
V/C Ratio(X)	0.21	0.67	0.79	0.76	0.85	0.85	0.63	0.21	0.16	0.86	0.91	0.15
Avail Cap(c_a), veh/h	209	1094	489	387	626	621	292	1235	552	407	1244	557
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)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.35	0.35	0.35
Uniform Delay (d), s/veh	75.5	57.8	59.7	71.1	54.0	54.0	73.4	37.8	13.6	74.2	50.9	18.7
Incr Delay (d2), s/veh	0.4	1.6	8.0	7.6	10.4	10.5	2.9	0.1	0.2	4.2	4.4	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	0.8	11.6	13.3	6.9	20.9	20.7	4.0	4.3	1.7	6.1	25.2	1.9
LnGrp Delay(d),s/veh	75.9	59.3	67.8	78.7	64.4	64.5	76.3	37.9	13.8	78.4	55.3	18.9
LnGrp LOS	E	E	E	E	E	E	E	D	B	E	E	B
Approach Vol, veh/h		871			1194			529			1471	
Approach Delay, s/veh		62.8			68.0			46.7			57.4	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	64.5	24.9	44.4	20.3	64.9	13.1	56.1
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	14.5	52.7	17.4	* 51	14.0	* 58	10.0	58.4
Max Q Clear Time (g_c+I1), s	11.4	10.7	15.7	30.3	10.2	51.9	3.6	41.5
Green Ext Time (p_c), s	0.2	2.4	1.3	7.7	0.3	3.8	0.0	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	60.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	635	5	8	773	91	5	2	13	123	1	325
Future Volume (veh/h)	168	635	5	8	773	91	5	2	13	123	1	325
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	173	655	5	8	797	94	5	2	13	127	1	335
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	1964	15	142	1822	815	100	51	333	387	1	376
Arrive On Green	0.12	0.55	0.55	0.08	0.51	0.51	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3600	27	1774	3539	1583	1040	215	1400	1393	5	1579
Grp Volume(v), veh/h	173	322	338	8	797	94	5	0	15	127	0	336
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	1774	1770	1583	1040	0	1616	1393	0	1584
Q Serve(g_s), s	10.5	11.1	11.1	0.5	15.5	3.4	0.5	0.0	0.8	8.5	0.0	22.6
Cycle Q Clear(g_c), s	10.5	11.1	11.1	0.5	15.5	3.4	23.1	0.0	0.8	9.3	0.0	22.6
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	204	965	1013	142	1822	815	100	0	385	387	0	377
V/C Ratio(X)	0.85	0.33	0.33	0.06	0.44	0.12	0.05	0.00	0.04	0.33	0.00	0.89
Avail Cap(c_a), veh/h	379	965	1013	142	1822	815	131	0	433	423	0	418
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	0.62	0.62	0.62	1.00	0.00	1.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	47.7	13.9	13.9	46.8	16.7	13.8	51.7	0.0	32.2	35.8	0.0	40.5
Incr Delay (d2), s/veh	7.0	0.9	0.9	0.1	0.5	0.2	0.2	0.0	0.0	0.5	0.0	19.0
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	5.5	5.6	5.9	0.2	7.6	1.5	0.2	0.0	0.4	3.3	0.0	11.9
LnGrp Delay(d),s/veh	54.7	14.8	14.8	46.8	17.2	13.9	51.9	0.0	32.3	36.3	0.0	59.5
LnGrp LOS	D	B	B	D	B	B	D		C	D		E
Approach Vol, veh/h		833			899			20			463	
Approach Delay, s/veh		23.1			17.1			37.2			53.1	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	65.0		31.2	17.2	61.6		31.2
Change Period (Y+Rc), s	5.0	* 5		5.0	4.5	5.0		* 5
Max Green Setting (Gmax), s	6.5	* 60		29.0	23.5	43.0		* 30
Max Q Clear Time (g_c+I1), s	12.5	13.1		24.6	12.5	17.5		25.1
Green Ext Time (p_c), s	0.0	4.0		1.1	0.2	5.7		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	788	33	286	890	77	13	82	131	216	235	60
Future Volume (veh/h)	42	788	33	286	890	77	13	82	131	216	235	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	804	0	292	908	79	13	84	134	220	240	61
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	1447	647	308	1810	157	26	219	186	242	445	378
Arrive On Green	0.03	0.41	0.00	0.17	0.55	0.55	0.01	0.12	0.12	0.14	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3295	287	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	43	804	0	292	488	499	13	84	134	220	240	61
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1812	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.6	19.1	0.0	17.9	18.9	18.9	0.8	4.6	9.0	13.4	12.4	3.4
Cycle Q Clear(g_c), s	2.6	19.1	0.0	17.9	18.9	18.9	0.8	4.6	9.0	13.4	12.4	3.4
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	1447	647	308	972	995	26	219	186	242	445	378
V/C Ratio(X)	0.73	0.56	0.00	0.95	0.50	0.50	0.49	0.38	0.72	0.91	0.54	0.16
Avail Cap(c_a), veh/h	90	1447	647	308	972	995	89	525	446	242	686	583
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	24.9	0.0	45.0	15.4	15.4	53.8	44.9	46.8	46.8	36.6	33.1
Incr Delay (d2), s/veh	12.0	1.5	0.0	37.4	1.8	1.8	10.1	0.8	3.9	34.6	0.8	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	1.5	9.6	0.0	12.0	9.7	9.9	0.5	2.4	4.1	8.9	6.5	1.5
LnGrp Delay(d),s/veh	64.7	26.4	0.0	82.4	17.3	17.2	63.9	45.7	50.7	81.5	37.3	33.3
LnGrp LOS	E	C		F	B	B	E	D	D	F	D	C
Approach Vol, veh/h		847			1279			231			521	
Approach Delay, s/veh		28.3			32.1			49.6			55.5	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	50.0	5.6	31.3	7.7	65.4	19.0	17.9
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	19.1	26.9	5.5	40.5	5.6	40.4	15.0	31.0
Max Q Clear Time (g_c+I1), s	19.9	21.1	2.8	14.4	4.6	20.9	15.4	11.0
Green Ext Time (p_c), s	0.0	4.0	0.0	2.0	0.0	9.3	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	132	3	0	2	1	1	8	509	4	1	182	34
Future Vol, veh/h	132	3	0	2	1	1	8	509	4	1	182	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	3	0	2	1	1	8	536	4	1	192	36

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	768	769	209	768	784	538	227	0	0	540	0	0
Stage 1	212	212	-	555	555	-	-	-	-	-	-	-
Stage 2	556	557	-	213	229	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	319	332	831	319	325	543	1341	-	-	1028	-	-
Stage 1	790	727	-	516	513	-	-	-	-	-	-	-
Stage 2	515	512	-	789	715	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	316	330	831	315	323	543	1341	-	-	1028	-	-
Mov Cap-2 Maneuver	316	330	-	315	323	-	-	-	-	-	-	-
Stage 1	785	726	-	513	510	-	-	-	-	-	-	-
Stage 2	510	509	-	785	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.4	15.3	0.1	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1341	-	-	316	354	1028	-	-
HCM Lane V/C Ratio	0.006	-	-	0.45	0.012	0.001	-	-
HCM Control Delay (s)	7.7	-	-	25.4	15.3	8.5	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.2	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	380	72	105	252	96	111	481	183	115	256	54
Future Volume (veh/h)	145	380	72	105	252	96	111	481	183	115	256	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	149	392	74	108	260	99	114	496	189	119	264	56
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	763	341	145	676	302	147	820	367	152	828	371
Arrive On Green	0.11	0.22	0.22	0.08	0.19	0.19	0.08	0.23	0.23	0.09	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	149	392	74	108	260	99	114	496	189	119	264	56
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.1	6.1	2.4	3.7	4.0	3.4	3.9	7.8	6.5	4.1	3.8	1.7
Cycle Q Clear(g_c), s	5.1	6.1	2.4	3.7	4.0	3.4	3.9	7.8	6.5	4.1	3.8	1.7
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	188	763	341	145	676	302	147	820	367	152	828	371
V/C Ratio(X)	0.79	0.51	0.22	0.75	0.38	0.33	0.77	0.61	0.52	0.78	0.32	0.15
Avail Cap(c_a), veh/h	271	2037	911	220	1935	866	200	1451	649	200	1451	649
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	27.1	21.5	20.1	27.9	22.0	21.7	27.9	21.4	20.9	27.9	19.7	18.9
Incr Delay (d2), s/veh	5.9	0.5	0.3	2.9	0.4	0.6	8.2	0.7	1.1	10.0	0.2	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	2.8	3.0	1.1	1.9	2.0	1.5	2.2	3.9	2.9	2.4	1.9	0.8
LnGrp Delay(d),s/veh	33.0	22.1	20.4	30.8	22.3	22.3	36.1	22.1	22.0	37.9	19.9	19.1
LnGrp LOS	C	C	C	C	C	C	D	C	C	D	B	B
Approach Vol, veh/h		615			467			799			439	
Approach Delay, s/veh		24.5			24.3			24.1			24.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	21.9	9.6	19.4	11.2	22.1	11.1	17.9
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	7.0	25.5	7.7	35.8	7.0	25.5	9.5	34.0
Max Q Clear Time (g_c+I1), s	6.1	9.8	5.7	8.1	5.9	5.8	7.1	6.0
Green Ext Time (p_c), s	0.0	4.6	0.0	5.3	0.0	5.0	0.0	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	39.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	281	30	137	181	33	54	161	300	18	47	23
Future Vol, veh/h	35	281	30	137	181	33	54	161	300	18	47	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	305	33	149	197	36	59	175	326	20	51	25
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	14.9	13.9	77.3	13.1
HCM LOS	B	B	F	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	10%	100%	0%	0%	100%	0%	0%	20%
Vol Thru, %	31%	0%	100%	76%	0%	100%	65%	53%
Vol Right, %	58%	0%	0%	24%	0%	0%	35%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	515	35	187	124	137	121	93	88
LT Vol	54	35	0	0	137	0	0	18
Through Vol	161	0	187	94	0	121	60	47
RT Vol	300	0	0	30	0	0	33	23
Lane Flow Rate	560	38	204	134	149	131	101	96
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.047	0.085	0.434	0.28	0.334	0.279	0.209	0.212
Departure Headway (Hd)	6.734	8.431	7.908	7.731	8.429	7.907	7.649	8.227
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	543	428	458	468	429	458	472	439
Service Time	4.428	6.131	5.608	5.431	6.129	5.607	5.349	5.927
HCM Lane V/C Ratio	1.031	0.089	0.445	0.286	0.347	0.286	0.214	0.219
HCM Control Delay	77.3	11.9	16.5	13.4	15.3	13.6	12.4	13.1
HCM Lane LOS	F	B	C	B	C	B	B	B
HCM 95th-tile Q	16.2	0.3	2.2	1.1	1.4	1.1	0.8	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	273	15	125	74	8	16	623	197	10	347	60
Future Volume (veh/h)	182	273	15	125	74	8	16	623	197	10	347	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	192	287	16	132	78	8	17	656	207	11	365	63
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	563	31	312	535	55	43	1286	575	29	1259	563
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.02	0.36	0.36	0.02	0.36	0.36
Sat Flow, veh/h	1306	1748	97	1072	1662	170	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	192	0	303	132	0	86	17	656	207	11	365	63
Grp Sat Flow(s),veh/h/ln	1306	0	1846	1072	0	1833	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.0	0.0	8.7	7.5	0.0	2.2	0.6	9.5	6.3	0.4	4.8	1.7
Cycle Q Clear(g_c), s	10.2	0.0	8.7	16.2	0.0	2.2	0.6	9.5	6.3	0.4	4.8	1.7
Prop In Lane	1.00		0.05	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	0	594	312	0	590	43	1286	575	29	1259	563
V/C Ratio(X)	0.39	0.00	0.51	0.42	0.00	0.15	0.39	0.51	0.36	0.37	0.29	0.11
Avail Cap(c_a), veh/h	835	0	1086	590	0	1064	163	1731	774	298	1974	883
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	19.4	0.0	18.0	24.5	0.0	15.8	31.4	16.3	15.3	31.8	15.1	14.1
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.7	0.0	0.1	2.1	0.7	0.8	2.9	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	2.9	0.0	4.5	2.3	0.0	1.1	0.3	4.7	2.8	0.2	2.4	0.8
LnGrp Delay(d),s/veh	19.8	0.0	18.5	25.2	0.0	15.9	33.6	16.9	16.1	34.7	15.4	14.3
LnGrp LOS	B		B	C		B	C	B	B	C	B	B
Approach Vol, veh/h		495			218			880			439	
Approach Delay, s/veh		19.0			21.5			17.1			15.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	31.3		27.1	7.6	30.8		27.1
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 32		* 39	6.0	36.5		38.0
Max Q Clear Time (g_c+I1), s	12.2	11.5		12.2	2.6	6.8		18.2
Green Ext Time (p_c), s	0.0	12.3		3.1	0.0	15.4		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	866	200	138	612	141	365	656	376	231	248	32
Future Volume (veh/h)	44	866	200	138	612	141	365	656	376	231	248	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	46	912	211	145	644	148	384	691	396	243	261	34
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1094	489	761	1385	318	735	819	367	286	340	152
Arrive On Green	0.05	0.31	0.31	0.22	0.48	0.48	0.21	0.23	0.23	0.08	0.10	0.10
Sat Flow, veh/h	3442	3539	1583	3442	2860	656	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	46	912	211	145	398	394	384	691	396	243	261	34
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1747	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	2.1	39.6	17.5	5.7	24.7	24.8	16.3	30.8	23.2	11.5	11.9	2.8
Cycle Q Clear(g_c), s	2.1	39.6	17.5	5.7	24.7	24.8	16.3	30.8	23.2	11.5	11.9	2.8
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	183	1094	489	761	857	846	735	819	367	286	340	152
V/C Ratio(X)	0.25	0.83	0.43	0.19	0.46	0.47	0.52	0.84	1.08	0.85	0.77	0.22
Avail Cap(c_a), veh/h	209	1094	489	761	857	846	735	1130	506	407	1244	557
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)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	75.0	53.1	45.4	52.2	28.3	28.3	57.4	60.5	23.4	74.6	72.8	51.0
Incr Delay (d2), s/veh	0.5	6.8	2.5	0.0	1.8	1.8	0.3	4.7	62.2	7.9	4.2	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	1.0	20.4	8.0	2.7	12.5	12.4	7.8	15.6	16.4	5.8	6.0	1.3
LnGrp Delay(d),s/veh	75.4	59.9	47.9	52.3	30.1	30.2	57.7	65.3	85.6	82.5	77.0	51.9
LnGrp LOS	E	E	D	D	C	C	E	E	F	F	E	D
Approach Vol, veh/h		1169			937			1471			538	
Approach Delay, s/veh		58.3			33.6			68.8			77.9	
Approach LOS		E			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	45.1	42.8	57.3	42.2	22.8	13.9	86.2
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	13.5	52.7	17.4	* 51	14.0	* 58	10.0	58.4
Max Q Clear Time (g_c+I1), s	12.5	32.8	7.7	41.6	18.3	13.9	4.1	26.8
Green Ext Time (p_c), s	0.2	5.4	5.2	6.3	0.0	2.0	0.0	9.9

Intersection Summary	
HCM 2010 Ctrl Delay	59.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	952	13	34	712	226	7	3	14	104	0	147
Future Volume (veh/h)	404	952	13	34	712	226	7	3	14	104	0	147
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	434	1024	14	37	766	243	8	3	15	112	0	158
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	768	2505	34	66	1062	475	107	35	177	233	0	207
Arrive On Green	0.43	0.70	0.70	0.04	0.30	0.30	0.13	0.13	0.13	0.13	0.00	0.13
Sat Flow, veh/h	1774	3575	49	1774	3539	1583	1223	271	1353	1389	0	1583
Grp Volume(v), veh/h	434	507	531	37	766	243	8	0	18	112	0	158
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1583	1223	0	1624	1389	0	1583
Q Serve(g_s), s	20.2	13.2	13.2	2.3	21.3	14.0	0.7	0.0	1.1	8.5	0.0	10.6
Cycle Q Clear(g_c), s	20.2	13.2	13.2	2.3	21.3	14.0	11.3	0.0	1.1	9.6	0.0	10.6
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	768	1240	1299	66	1062	475	107	0	212	233	0	207
V/C Ratio(X)	0.56	0.41	0.41	0.56	0.72	0.51	0.07	0.00	0.08	0.48	0.00	0.76
Avail Cap(c_a), veh/h	768	1240	1299	105	1062	475	220	0	362	355	0	345
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	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	6.9	6.9	52.1	34.4	31.8	51.7	0.0	42.1	46.3	0.0	46.2
Incr Delay (d2), s/veh	0.8	1.0	1.0	4.9	3.7	3.4	0.3	0.0	0.2	1.5	0.0	5.8
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	10.1	6.7	7.0	1.2	10.9	6.5	0.2	0.0	0.5	3.4	0.0	5.0
LnGrp Delay(d),s/veh	24.2	7.9	7.9	57.0	38.1	35.3	51.9	0.0	42.2	47.8	0.0	52.0
LnGrp LOS	C	A	A	E	D	D	D		D	D		D
Approach Vol, veh/h		1472			1046			26			270	
Approach Delay, s/veh		12.7			38.1			45.2			50.2	
Approach LOS		B			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	82.1		19.4	52.6	38.0		19.4
Change Period (Y+Rc), s	4.5	5.0		5.0	5.0	* 5		* 5
Max Green Setting (Gmax), s	6.5	65.0		24.0	38.5	* 33		* 25
Max Q Clear Time (g_c+I1), s	4.3	15.2		12.6	22.2	23.3		13.3
Green Ext Time (p_c), s	0.0	8.7		1.1	6.6	3.9		1.1

Intersection Summary		
HCM 2010 Ctrl Delay		26.0
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	832	39	176	810	198	40	250	270	216	123	45
Future Volume (veh/h)	79	832	39	176	810	198	40	250	270	216	123	45
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	858	0	181	835	204	41	258	278	223	127	46
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1310	586	210	1214	297	58	384	327	251	588	500
Arrive On Green	0.06	0.37	0.00	0.12	0.43	0.43	0.03	0.21	0.21	0.14	0.32	0.32
Sat Flow, veh/h	1774	3539	1583	1774	2822	689	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	81	858	0	181	524	515	41	258	278	223	127	46
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1741	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.0	22.2	0.0	11.0	26.3	26.3	2.5	14.0	18.6	13.6	5.5	2.3
Cycle Q Clear(g_c), s	5.0	22.2	0.0	11.0	26.3	26.3	2.5	14.0	18.6	13.6	5.5	2.3
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	1310	586	210	762	749	58	384	327	251	588	500
V/C Ratio(X)	0.79	0.65	0.00	0.86	0.69	0.69	0.71	0.67	0.85	0.89	0.22	0.09
Avail Cap(c_a), veh/h	113	1310	586	226	762	749	110	525	446	258	681	579
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	28.8	0.0	47.6	25.3	25.3	52.7	40.2	42.0	46.3	27.7	26.5
Incr Delay (d2), s/veh	26.7	2.6	0.0	25.5	5.0	5.1	11.4	1.5	10.0	28.4	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	3.2	11.3	0.0	6.9	13.9	13.7	1.4	7.4	9.0	8.6	2.8	1.0
LnGrp Delay(d),s/veh	77.9	31.4	0.0	73.1	30.4	30.4	64.1	41.7	52.1	74.7	27.8	26.6
LnGrp LOS	E	C		E	C	C	E	D	D	E	C	C
Approach Vol, veh/h		939			1220			577			396	
Approach Delay, s/veh		35.4			36.7			48.3			54.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	45.7	7.6	39.7	10.4	52.3	19.6	27.7
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	14.0	31.0	6.8	40.2	7.0	38.0	16.0	31.0
Max Q Clear Time (g_c+I1), s	13.0	24.2	4.5	7.5	7.0	28.3	15.6	20.6
Green Ext Time (p_c), s	0.0	4.8	0.0	2.8	0.0	6.3	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.7
HCM 2010 LOS	D

APPENDIX C

Existing Plus Project Conditions Intersection LOS Worksheets

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	1	50	2	0	0	15	132	7	2	954	332
Future Vol, veh/h	31	1	50	2	0	0	15	132	7	2	954	332
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	1	56	2	0	0	17	147	8	2	1060	369

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1433	1437	1244	1461	1617	151	1429	0	0	154	0	0
Stage 1	1249	1249	-	184	184	-	-	-	-	-	-	-
Stage 2	184	188	-	1277	1433	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	112	133	213	107	103	895	476	-	-	1426	-	-
Stage 1	212	245	-	818	747	-	-	-	-	-	-	-
Stage 2	818	745	-	204	200	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	108	127	213	76	99	895	476	-	-	1426	-	-
Mov Cap-2 Maneuver	108	127	-	76	99	-	-	-	-	-	-	-
Stage 1	204	243	-	789	720	-	-	-	-	-	-	-
Stage 2	789	718	-	149	198	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.8	53.8	1.3	0
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	476	-	-	108	210	76	1426	-	-
HCM Lane V/C Ratio	0.035	-	-	0.319	0.27	0.029	0.002	-	-
HCM Control Delay (s)	12.8	-	-	53.2	28.4	53.8	7.5	-	-
HCM Lane LOS	B	-	-	F	D	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	1.1	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	335	129	280	514	128	45	236	106	166	973	313
Future Volume (veh/h)	56	335	129	280	514	128	45	236	106	166	973	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	342	132	286	524	131	46	241	108	169	993	319
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	657	294	319	1120	501	79	950	425	201	1194	534
Arrive On Green	0.05	0.19	0.19	0.18	0.32	0.32	0.04	0.27	0.27	0.11	0.34	0.34
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	342	132	286	524	131	46	241	108	169	993	319
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.0	8.3	7.0	15.0	11.3	5.9	2.4	5.1	5.1	8.9	24.6	15.9
Cycle Q Clear(g_c), s	3.0	8.3	7.0	15.0	11.3	5.9	2.4	5.1	5.1	8.9	24.6	15.9
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	87	657	294	319	1120	501	79	950	425	201	1194	534
V/C Ratio(X)	0.65	0.52	0.45	0.90	0.47	0.26	0.58	0.25	0.25	0.84	0.83	0.60
Avail Cap(c_a), veh/h	175	1303	583	364	1680	751	112	1061	475	243	1322	591
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	44.4	34.9	34.4	38.1	26.1	24.2	44.5	27.3	27.3	41.3	29.0	26.1
Incr Delay (d2), s/veh	3.1	0.6	1.1	20.5	0.3	0.3	2.5	0.1	0.3	16.7	4.3	1.4
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	1.5	4.1	3.1	9.1	5.6	2.6	1.2	2.5	2.3	5.3	12.7	7.1
LnGrp Delay(d),s/veh	47.5	35.5	35.4	58.6	26.4	24.5	47.1	27.4	27.6	58.0	33.3	27.5
LnGrp LOS	D	D	D	E	C	C	D	C	C	E	C	C
Approach Vol, veh/h		531			941			395			1481	
Approach Delay, s/veh		36.8			35.9			29.8			34.9	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.8	33.0	21.6	23.6	10.2	39.6	9.2	36.1
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	13.0	28.5	19.5	35.0	6.0	35.5	9.4	45.1
Max Q Clear Time (g_c+I1), s	10.9	7.1	17.0	10.3	4.4	26.6	5.0	13.3
Green Ext Time (p_c), s	0.0	9.4	0.1	7.4	0.0	5.5	0.0	7.9

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	34.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	181	51	326	548	19	9	39	145	59	192	134
Future Vol, veh/h	14	181	51	326	548	19	9	39	145	59	192	134
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	191	54	343	577	20	9	41	153	62	202	141
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	15.2	34.7	19	55
HCM LOS	C	D	C	F

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	5%	100%	0%	0%	100%	0%	0%	15%
Vol Thru, %	20%	0%	100%	54%	0%	100%	91%	50%
Vol Right, %	75%	0%	0%	46%	0%	0%	9%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	14	121	111	326	365	202	385
LT Vol	9	14	0	0	326	0	0	59
Through Vol	39	0	121	60	0	365	183	192
RT Vol	145	0	0	51	0	0	19	134
Lane Flow Rate	203	15	127	117	343	385	212	405
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.481	0.039	0.318	0.283	0.806	0.848	0.464	0.925
Departure Headway (Hd)	8.526	9.544	9.017	8.679	8.46	7.937	7.868	8.218
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	423	375	399	414	429	458	459	442
Service Time	6.275	7.298	6.77	6.432	6.185	5.662	5.593	5.937
HCM Lane V/C Ratio	0.48	0.04	0.318	0.283	0.8	0.841	0.462	0.916
HCM Control Delay	19	12.7	15.9	14.8	38.1	41.3	17.2	55
HCM Lane LOS	C	B	C	B	E	E	C	F
HCM 95th-tile Q	2.5	0.1	1.3	1.1	7.3	8.4	2.4	10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	194	11	387	206	9	10	317	135	12	1208	150
Future Volume (veh/h)	62	194	11	387	206	9	10	317	135	12	1208	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	67	209	12	416	222	10	11	341	145	13	1299	161
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	680	39	430	689	31	28	1369	613	33	1378	616
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.02	0.39	0.39	0.02	0.39	0.39
Sat Flow, veh/h	1144	1745	100	1155	1769	80	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	67	0	221	416	0	232	11	341	145	13	1299	161
Grp Sat Flow(s),veh/h/ln	1144	0	1845	1155	0	1849	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.1	0.0	7.9	29.1	0.0	8.3	0.6	6.2	5.9	0.7	33.6	6.6
Cycle Q Clear(g_c), s	12.5	0.0	7.9	37.0	0.0	8.3	0.6	6.2	5.9	0.7	33.6	6.6
Prop In Lane	1.00		0.05	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	421	0	719	430	0	720	28	1369	613	33	1378	616
V/C Ratio(X)	0.16	0.00	0.31	0.97	0.00	0.32	0.39	0.25	0.24	0.40	0.94	0.26
Avail Cap(c_a), veh/h	427	0	728	430	0	720	112	1369	613	205	1397	625
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	24.6	0.0	20.1	35.1	0.0	20.2	46.3	19.8	19.7	46.1	28.0	19.7
Incr Delay (d2), s/veh	0.1	0.0	0.2	35.0	0.0	0.2	3.2	0.2	0.4	2.9	13.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	4.0	15.0	0.0	4.3	0.3	3.1	2.6	0.4	18.9	2.9
LnGrp Delay(d),s/veh	24.7	0.0	20.3	70.1	0.0	20.4	49.5	20.0	20.1	49.0	41.1	20.2
LnGrp LOS	C		C	E		C	D	B	C	D	D	C
Approach Vol, veh/h		288			648			497			1473	
Approach Delay, s/veh		21.3			52.3			20.6			38.9	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	44.3		43.0	7.5	44.5		43.0
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 33		* 38	6.0	37.5		37.0
Max Q Clear Time (g_c+I1), s	2.7	8.2		14.5	2.6	35.6		39.0
Green Ext Time (p_c), s	0.0	20.2		4.1	0.0	1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	536	283	288	729	154	172	265	86	262	1122	89
Future Volume (veh/h)	36	536	283	288	729	154	172	265	86	262	1122	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	37	547	289	294	744	157	176	270	88	267	1145	91
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	816	365	391	879	185	279	1230	550	310	1244	557
Arrive On Green	0.05	0.23	0.23	0.11	0.30	0.30	0.08	0.35	0.35	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	2910	614	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	37	547	289	294	452	449	176	270	88	267	1145	91
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1754	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.7	23.2	28.3	13.7	39.6	39.6	8.2	8.9	3.8	12.6	51.2	4.7
Cycle Q Clear(g_c), s	1.7	23.2	28.3	13.7	39.6	39.6	8.2	8.9	3.8	12.6	51.2	4.7
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	816	365	391	534	530	279	1230	550	310	1244	557
V/C Ratio(X)	0.22	0.67	0.79	0.75	0.85	0.85	0.63	0.22	0.16	0.86	0.92	0.16
Avail Cap(c_a), veh/h	209	1094	489	391	626	621	292	1230	550	407	1244	557
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)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.32	0.32	0.32
Uniform Delay (d), s/veh	75.3	57.8	59.7	70.9	54.0	54.0	73.4	38.0	13.7	74.1	51.3	18.8
Incr Delay (d2), s/veh	0.5	1.6	8.0	7.2	10.5	10.6	2.9	0.1	0.2	4.0	4.7	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	0.8	11.6	13.3	6.9	20.9	20.8	4.0	4.4	1.7	6.2	25.8	2.1
LnGrp Delay(d),s/veh	75.8	59.3	67.8	78.0	64.5	64.6	76.3	38.1	13.8	78.1	56.0	19.0
LnGrp LOS	E	E	E	E	E	E	E	D	B	E	E	B
Approach Vol, veh/h		873			1195			534			1503	
Approach Delay, s/veh		62.8			67.9			46.7			57.7	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	64.3	25.0	44.4	20.3	64.9	13.3	56.1
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	14.5	52.7	17.4	* 51	14.0	* 58	10.0	58.4
Max Q Clear Time (g_c+I1), s	11.6	10.9	15.7	30.3	10.2	53.2	3.7	41.6
Green Ext Time (p_c), s	0.2	2.4	1.3	7.7	0.3	3.2	0.0	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	60.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	637	5	8	780	91	5	2	13	123	1	336
Future Volume (veh/h)	171	637	5	8	780	91	5	2	13	123	1	336
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	176	657	5	8	804	94	5	2	13	127	1	346
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	1964	15	132	1795	803	98	53	342	395	1	385
Arrive On Green	0.12	0.55	0.55	0.07	0.51	0.51	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3600	27	1774	3539	1583	1030	215	1400	1393	5	1579
Grp Volume(v), veh/h	176	323	339	8	804	94	5	0	15	127	0	347
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	1774	1770	1583	1030	0	1616	1393	0	1584
Q Serve(g_s), s	10.7	11.2	11.2	0.5	15.9	3.4	0.5	0.0	0.8	8.4	0.0	23.3
Cycle Q Clear(g_c), s	10.7	11.2	11.2	0.5	15.9	3.4	23.8	0.0	0.8	9.2	0.0	23.3
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	208	965	1013	132	1795	803	98	0	394	395	0	386
V/C Ratio(X)	0.85	0.33	0.33	0.06	0.45	0.12	0.05	0.00	0.04	0.32	0.00	0.90
Avail Cap(c_a), veh/h	379	965	1013	132	1795	803	123	0	433	423	0	418
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	0.63	0.63	0.63	1.00	0.00	1.00	0.97	0.00	0.97
Uniform Delay (d), s/veh	47.6	13.9	13.9	47.3	17.3	14.2	51.8	0.0	31.7	35.2	0.0	40.3
Incr Delay (d2), s/veh	7.0	0.9	0.9	0.1	0.5	0.2	0.2	0.0	0.0	0.5	0.0	20.4
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	5.6	5.6	5.9	0.2	7.8	1.5	0.2	0.0	0.4	3.3	0.0	12.4
LnGrp Delay(d),s/veh	54.6	14.8	14.8	47.4	17.8	14.4	52.0	0.0	31.8	35.7	0.0	60.6
LnGrp LOS	D	B	B	D	B	B	D		C	D		E
Approach Vol, veh/h		838			906			20			474	
Approach Delay, s/veh		23.2			17.7			36.8			53.9	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	65.0		31.8	17.4	60.8		31.8
Change Period (Y+Rc), s	5.0	* 5		5.0	4.5	5.0		* 5
Max Green Setting (Gmax), s	6.5	* 60		29.0	23.5	43.0		* 30
Max Q Clear Time (g_c+I1), s	12.5	13.2		25.3	12.7	17.9		25.8
Green Ext Time (p_c), s	0.0	4.0		1.0	0.2	5.7		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	788	33	286	890	79	13	83	131	223	239	67
Future Volume (veh/h)	44	788	33	286	890	79	13	83	131	223	239	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	45	804	0	292	908	81	13	85	134	228	244	68
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1446	647	308	1802	161	26	219	187	242	446	379
Arrive On Green	0.03	0.41	0.00	0.17	0.55	0.55	0.01	0.12	0.12	0.14	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3287	293	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	45	804	0	292	489	500	13	85	134	228	244	68
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1811	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.8	19.1	0.0	17.9	19.0	19.0	0.8	4.6	9.0	14.0	12.6	3.8
Cycle Q Clear(g_c), s	2.8	19.1	0.0	17.9	19.0	19.0	0.8	4.6	9.0	14.0	12.6	3.8
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	1446	647	308	970	993	26	219	187	242	446	379
V/C Ratio(X)	0.75	0.56	0.00	0.95	0.50	0.50	0.49	0.39	0.72	0.94	0.55	0.18
Avail Cap(c_a), veh/h	90	1446	647	308	970	993	89	525	446	242	686	583
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	24.9	0.0	45.0	15.5	15.5	53.8	44.9	46.8	47.1	36.6	33.3
Incr Delay (d2), s/veh	12.7	1.5	0.0	37.4	1.9	1.8	10.1	0.8	3.8	42.2	0.8	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	1.6	9.6	0.0	12.0	9.7	10.0	0.5	2.4	4.1	9.7	6.6	1.7
LnGrp Delay(d),s/veh	65.4	26.4	0.0	82.4	17.4	17.3	63.9	45.7	50.6	89.3	37.4	33.4
LnGrp LOS	E	C		F	B	B	E	D	D	F	D	C
Approach Vol, veh/h		849			1281			232			540	
Approach Delay, s/veh		28.5			32.2			49.5			58.8	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	49.9	5.6	31.3	7.7	65.3	19.0	18.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	19.1	26.9	5.5	40.5	5.6	40.4	15.0	31.0
Max Q Clear Time (g_c+I1), s	19.9	21.1	2.8	14.6	4.8	21.0	16.0	11.0
Green Ext Time (p_c), s	0.0	4.0	0.0	2.1	0.0	9.2	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	32	4	9	335	4	15	0	35	14	0	6
Future Vol, veh/h	1	32	4	9	335	4	15	0	35	14	0	6
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	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	36	4	10	372	4	17	0	39	16	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	377	0	0	40	0	0	438	437	38	453	436	374
Stage 1	-	-	-	-	-	-	40	40	-	394	394	-
Stage 2	-	-	-	-	-	-	398	397	-	59	42	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1181	-	-	1570	-	-	529	513	1034	517	514	672
Stage 1	-	-	-	-	-	-	975	862	-	631	605	-
Stage 2	-	-	-	-	-	-	628	603	-	953	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1181	-	-	1570	-	-	521	509	1034	495	510	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	521	509	-	495	510	-
Stage 1	-	-	-	-	-	-	974	861	-	630	601	-
Stage 2	-	-	-	-	-	-	618	599	-	916	859	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	9.8	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	798	1181	-	-	1570	-	-	537
HCM Lane V/C Ratio	0.07	0.001	-	-	0.006	-	-	0.041
HCM Control Delay (s)	9.8	8.1	-	-	7.3	-	-	12
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	134	3	21	2	1	1	54	509	4	1	182	38
Future Vol, veh/h	134	3	21	2	1	1	54	509	4	1	182	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	141	3	22	2	1	1	57	536	4	1	192	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	867	868	212	878	886	538	232	0	0	540	0	0
Stage 1	214	214	-	652	652	-	-	-	-	-	-	-
Stage 2	653	654	-	226	234	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	273	290	828	268	284	543	1336	-	-	1028	-	-
Stage 1	788	725	-	457	464	-	-	-	-	-	-	-
Stage 2	456	463	-	777	711	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	263	277	828	250	272	543	1336	-	-	1028	-	-
Mov Cap-2 Maneuver	263	277	-	250	272	-	-	-	-	-	-	-
Stage 1	754	724	-	438	444	-	-	-	-	-	-	-
Stage 2	435	443	-	752	710	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30	17.3	0.7	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1336	-	-	263	663	296	1028	-	-
HCM Lane V/C Ratio	0.043	-	-	0.536	0.038	0.014	0.001	-	-
HCM Control Delay (s)	7.8	-	-	33.5	10.6	17.3	8.5	-	-
HCM Lane LOS	A	-	-	D	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	0.1	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	380	72	105	252	96	111	527	183	121	276	54
Future Volume (veh/h)	145	380	72	105	252	96	111	527	183	121	276	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	149	392	74	108	260	99	114	543	189	125	285	56
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	751	336	142	659	295	145	863	386	159	890	398
Arrive On Green	0.11	0.21	0.21	0.08	0.19	0.19	0.08	0.24	0.24	0.09	0.25	0.25
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	149	392	74	108	260	99	114	543	189	125	285	56
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.3	6.3	2.5	3.8	4.1	3.5	4.0	8.8	6.6	4.4	4.2	1.8
Cycle Q Clear(g_c), s	5.3	6.3	2.5	3.8	4.1	3.5	4.0	8.8	6.6	4.4	4.2	1.8
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	188	751	336	142	659	295	145	863	386	159	890	398
V/C Ratio(X)	0.79	0.52	0.22	0.76	0.39	0.34	0.78	0.63	0.49	0.79	0.32	0.14
Avail Cap(c_a), veh/h	263	1977	884	213	1877	840	194	1408	630	194	1408	630
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	28.0	22.4	20.9	28.9	22.9	22.6	28.9	21.6	20.8	28.6	19.5	18.6
Incr Delay (d2), s/veh	7.0	0.6	0.3	3.6	0.4	0.7	9.9	0.8	1.0	12.8	0.2	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	2.9	3.1	1.1	2.0	2.1	1.6	2.4	4.4	3.0	2.7	2.1	0.8
LnGrp Delay(d),s/veh	34.9	22.9	21.2	32.5	23.3	23.3	38.7	22.4	21.8	41.4	19.7	18.8
LnGrp LOS	C	C	C	C	C	C	D	C	C	D	B	B
Approach Vol, veh/h		615			467			846			466	
Approach Delay, s/veh		25.6			25.4			24.5			25.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	23.1	9.6	19.6	11.3	23.6	11.3	17.9
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	7.0	25.5	7.7	35.8	7.0	25.5	9.5	34.0
Max Q Clear Time (g_c+I1), s	6.4	10.8	5.8	8.3	6.0	6.2	7.3	6.1
Green Ext Time (p_c), s	0.0	4.9	0.0	5.3	0.0	5.4	0.0	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	43.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	281	30	137	181	33	54	180	300	18	55	25
Future Vol, veh/h	39	281	30	137	181	33	54	180	300	18	55	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	305	33	149	197	36	59	196	326	20	60	27
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	15	14.1	86.6	13.5
HCM LOS	B	B	F	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	10%	100%	0%	0%	100%	0%	0%	18%
Vol Thru, %	34%	0%	100%	76%	0%	100%	65%	56%
Vol Right, %	56%	0%	0%	24%	0%	0%	35%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	534	39	187	124	137	121	93	98
LT Vol	54	39	0	0	137	0	0	18
Through Vol	180	0	187	94	0	121	60	55
RT Vol	300	0	0	30	0	0	33	25
Lane Flow Rate	580	42	204	134	149	131	101	107
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.077	0.095	0.428	0.276	0.334	0.276	0.206	0.234
Departure Headway (Hd)	6.678	8.533	8.01	7.832	8.536	8.013	7.754	8.253
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	540	423	452	461	424	451	466	438
Service Time	4.464	6.233	5.71	5.532	6.236	5.713	5.454	5.953
HCM Lane V/C Ratio	1.074	0.099	0.451	0.291	0.351	0.29	0.217	0.244
HCM Control Delay	86.6	12.1	16.6	13.5	15.5	13.7	12.5	13.5
HCM Lane LOS	F	B	C	B	C	B	B	B
HCM 95th-tile Q	17.4	0.3	2.1	1.1	1.4	1.1	0.8	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	273	15	125	74	8	16	658	197	10	362	65
Future Volume (veh/h)	194	273	15	125	74	8	16	658	197	10	362	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	204	287	16	132	78	8	17	693	207	11	381	68
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	561	31	309	534	55	43	1310	586	29	1283	574
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.02	0.37	0.37	0.02	0.36	0.36
Sat Flow, veh/h	1306	1748	97	1072	1662	170	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	204	0	303	132	0	86	17	693	207	11	381	68
Grp Sat Flow(s),veh/h/ln	1306	0	1846	1072	0	1833	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.8	0.0	8.9	7.6	0.0	2.2	0.6	10.2	6.3	0.4	5.1	1.9
Cycle Q Clear(g_c), s	11.0	0.0	8.9	16.5	0.0	2.2	0.6	10.2	6.3	0.4	5.1	1.9
Prop In Lane	1.00		0.05	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	484	0	593	309	0	589	43	1310	586	29	1283	574
V/C Ratio(X)	0.42	0.00	0.51	0.43	0.00	0.15	0.39	0.53	0.35	0.37	0.30	0.12
Avail Cap(c_a), veh/h	817	0	1064	575	0	1043	159	1696	759	292	1935	866
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	20.1	0.0	18.4	25.1	0.0	16.1	32.1	16.5	15.2	32.5	15.2	14.2
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.7	0.0	0.1	2.2	0.7	0.8	2.9	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	3.2	0.0	4.6	2.3	0.0	1.1	0.3	5.1	2.9	0.2	2.5	0.9
LnGrp Delay(d),s/veh	20.5	0.0	18.9	25.8	0.0	16.2	34.2	17.2	16.0	35.4	15.5	14.4
LnGrp LOS	C		B	C		B	C	B	B	D	B	B
Approach Vol, veh/h		507			218			917			460	
Approach Delay, s/veh		19.6			22.0			17.2			15.8	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	32.2		27.4	7.6	31.7		27.4
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 32		* 39	6.0	36.5		38.0
Max Q Clear Time (g_c+I1), s	2.4	12.2		13.0	2.6	7.1		18.5
Green Ext Time (p_c), s	0.0	12.5		3.1	0.0	16.1		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	866	200	138	612	145	365	677	376	233	257	36
Future Volume (veh/h)	54	866	200	138	612	145	365	677	376	233	257	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	912	211	145	644	153	384	713	396	245	271	38
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	1094	489	738	1348	320	747	841	376	288	352	157
Arrive On Green	0.06	0.31	0.31	0.21	0.47	0.47	0.22	0.24	0.24	0.08	0.10	0.10
Sat Flow, veh/h	3442	3539	1583	3442	2840	674	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	57	912	211	145	401	396	384	713	396	245	271	38
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1744	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	2.6	39.6	17.5	5.7	25.4	25.5	16.2	31.7	24.1	11.6	12.3	3.1
Cycle Q Clear(g_c), s	2.6	39.6	17.5	5.7	25.4	25.5	16.2	31.7	24.1	11.6	12.3	3.1
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1094	489	738	840	828	747	841	376	288	352	157
V/C Ratio(X)	0.29	0.83	0.43	0.20	0.48	0.48	0.51	0.85	1.05	0.85	0.77	0.24
Avail Cap(c_a), veh/h	209	1094	489	738	840	828	747	1130	506	407	1244	557
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)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	74.7	53.1	45.4	53.2	29.4	29.5	56.9	60.0	23.7	74.6	72.5	50.3
Incr Delay (d2), s/veh	0.6	6.8	2.5	0.0	1.9	2.0	0.3	5.0	52.7	8.1	4.1	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	1.3	20.4	8.0	2.7	12.8	12.7	7.8	16.1	16.0	5.8	6.2	1.4
LnGrp Delay(d),s/veh	75.3	59.9	47.9	53.2	31.4	31.4	57.2	65.1	76.4	82.7	76.6	51.3
LnGrp LOS	E	E	D	D	C	C	E	E	F	F	E	D
Approach Vol, veh/h		1180			942			1493			554	
Approach Delay, s/veh		58.5			34.8			66.0			77.6	
Approach LOS		E			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	46.1	41.7	57.3	42.7	23.3	14.4	84.6
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	13.5	52.7	17.4	* 51	14.0	* 58	10.0	58.4
Max Q Clear Time (g_c+I1), s	12.6	33.7	7.7	41.6	18.2	14.3	4.6	27.5
Green Ext Time (p_c), s	0.2	5.5	5.2	6.3	0.0	2.1	0.0	9.9

Intersection Summary	
HCM 2010 Ctrl Delay	58.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	960	13	34	715	226	7	3	14	104	0	152
Future Volume (veh/h)	416	960	13	34	715	226	7	3	14	104	0	152
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	447	1032	14	37	769	243	8	3	15	112	0	163
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	763	2494	34	66	1062	475	107	36	181	238	0	212
Arrive On Green	0.43	0.70	0.70	0.04	0.30	0.30	0.13	0.13	0.13	0.13	0.00	0.13
Sat Flow, veh/h	1774	3575	49	1774	3539	1583	1218	271	1353	1389	0	1583
Grp Volume(v), veh/h	447	511	535	37	769	243	8	0	18	112	0	163
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1583	1218	0	1624	1389	0	1583
Q Serve(g_s), s	21.1	13.5	13.5	2.3	21.4	14.0	0.7	0.0	1.1	8.5	0.0	10.9
Cycle Q Clear(g_c), s	21.1	13.5	13.5	2.3	21.4	14.0	11.6	0.0	1.1	9.5	0.0	10.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	763	1235	1294	66	1062	475	107	0	217	238	0	212
V/C Ratio(X)	0.59	0.41	0.41	0.56	0.72	0.51	0.07	0.00	0.08	0.47	0.00	0.77
Avail Cap(c_a), veh/h	763	1235	1294	105	1062	475	216	0	362	355	0	345
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	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.9	7.1	7.1	52.1	34.4	31.8	51.6	0.0	41.7	45.9	0.0	46.0
Incr Delay (d2), s/veh	1.0	1.0	1.0	4.9	3.8	3.4	0.3	0.0	0.2	1.4	0.0	5.8
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	10.5	6.9	7.2	1.2	11.0	6.5	0.2	0.0	0.5	3.3	0.0	5.1
LnGrp Delay(d),s/veh	24.9	8.1	8.0	57.0	38.2	35.2	51.9	0.0	41.9	47.4	0.0	51.8
LnGrp LOS	C	A	A	E	D	D	D		D	D		D
Approach Vol, veh/h		1493			1049			26			275	
Approach Delay, s/veh		13.1			38.2			45.0			50.0	
Approach LOS		B			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	81.7		19.7	52.3	38.0		19.7
Change Period (Y+Rc), s	4.5	5.0		5.0	5.0	* 5		* 5
Max Green Setting (Gmax), s	6.5	65.0		24.0	38.5	* 33		* 25
Max Q Clear Time (g_c+I1), s	4.3	15.5		12.9	23.1	23.4		13.6
Green Ext Time (p_c), s	0.0	8.9		1.1	6.5	3.9		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	832	39	176	810	206	40	254	270	219	125	48
Future Volume (veh/h)	87	832	39	176	810	206	40	254	270	219	125	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	90	858	0	181	835	212	41	262	278	226	129	49
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1304	583	210	1183	300	58	385	327	254	591	502
Arrive On Green	0.06	0.37	0.00	0.12	0.42	0.42	0.03	0.21	0.21	0.14	0.32	0.32
Sat Flow, veh/h	1774	3539	1583	1774	2797	710	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	90	858	0	181	528	519	41	262	278	226	129	49
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1737	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.5	22.2	0.0	11.0	27.0	27.0	2.5	14.3	18.6	13.8	5.6	2.4
Cycle Q Clear(g_c), s	5.5	22.2	0.0	11.0	27.0	27.0	2.5	14.3	18.6	13.8	5.6	2.4
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	1304	583	210	748	735	58	385	327	254	591	502
V/C Ratio(X)	0.80	0.66	0.00	0.86	0.71	0.71	0.71	0.68	0.85	0.89	0.22	0.10
Avail Cap(c_a), veh/h	113	1304	583	226	748	735	110	525	446	258	681	579
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	29.0	0.0	47.6	26.1	26.1	52.7	40.3	42.0	46.3	27.5	26.4
Incr Delay (d2), s/veh	30.9	2.6	0.0	25.5	5.5	5.6	11.4	1.6	10.0	29.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	11.3	0.0	6.9	14.4	14.1	1.4	7.5	9.0	8.8	2.9	1.1
LnGrp Delay(d),s/veh	81.7	31.6	0.0	73.1	31.6	31.8	64.1	41.9	52.0	75.2	27.7	26.5
LnGrp LOS	F	C		E	C	C	E	D	D	E	C	C
Approach Vol, veh/h		948			1228			581			404	
Approach Delay, s/veh		36.3			37.8			48.3			54.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	45.5	7.6	39.9	11.0	51.5	19.8	27.7
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	14.0	31.0	6.8	40.2	7.0	38.0	16.0	31.0
Max Q Clear Time (g_c+I1), s	13.0	24.2	4.5	7.6	7.5	29.0	15.8	20.6
Green Ext Time (p_c), s	0.0	4.8	0.0	2.8	0.0	6.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	135	17	39	43	15	7	0	17	7	0	3
Future Vol, veh/h	6	135	17	39	43	15	7	0	17	7	0	3
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	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	142	18	41	45	16	7	0	18	7	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	61	0	0	160	0	0	301	307	151	308	308	53
Stage 1	-	-	-	-	-	-	164	164	-	135	135	-
Stage 2	-	-	-	-	-	-	137	143	-	173	173	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1542	-	-	1419	-	-	651	607	895	644	606	1014
Stage 1	-	-	-	-	-	-	838	762	-	868	785	-
Stage 2	-	-	-	-	-	-	866	779	-	829	756	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1542	-	-	1419	-	-	633	587	895	615	586	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	633	587	-	615	586	-
Stage 1	-	-	-	-	-	-	835	759	-	865	762	-
Stage 2	-	-	-	-	-	-	838	756	-	809	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	3.1	9.7	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	799	1542	-	-	1419	-	-	697
HCM Lane V/C Ratio	0.032	0.004	-	-	0.029	-	-	0.015
HCM Control Delay (s)	9.7	7.3	-	-	7.6	-	-	10.2
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

APPENDIX D

Cumulative Projects Trip Generation, Distribution and Assignment

Cumulative Projects Trip Distribution and Assignment

Roadway	Segment	Cumulative Total ADT	Hidden Valley Ranch		Zenner		1221 Gamble St		Escondido Country Club- The Villages		Hubbard		Pradera		Baker Conway		Jungman Specifc Plan		Meadowbrook		Champine Manor		Calvin Christian		United Reform Church		Starbucks	
		10,672		1,790		400		30		4,280		120		700		140		688		396		30		140		157		1,801
		Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume
N. Nutmeg St	N. Centre City Pkwy to Project Access	0	0.0%	0	0.0%	0	0.0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
N. Nutmeg St	Project Access to W Country Club Ln	0	0.0%	0	0.0%	0	0.0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
N. Nutmeg St	Country Club Ln to Via Alexandra	590	0.0%	0	0.0%	0	0.0%	0	14%	590	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
N. Nutmeg St	Via Alexandra to El Norte Pkwy	590	0.0%	0	0.0%	0	0.0%	0	14%	590	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
N. Centre City Pkwy	N. Nutmeg to Country Club Ln	456	5.0%	90	5.0%	20	0.0%	0	4%	174	5.0%	6	5.0%	35	5.0%	7	0.0%	0	5.0%	20	0.0%	0	5.0%	7	5.0%	8	5.0%	90
N. Centre City Pkwy	W. Country Club Ln to S. Iris Lane	919	0.0%	0	0.0%	0	0.0%	0	15%	649	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	15.0%	270
N. Centre City Pkwy	S. Iris Ln to W. El Norte Pkwy	1,038	0.0%	0	0.0%	0	0.0%	0	15%	649	0.0%	0	0.0%	0	0.0%	0	0.0%	0	30.0%	119	0.0%	0	0.0%	0	0.0%	0	15.0%	270
S. Iris Ln	N. Centre City Pkwy to W. El Norte Pkwy	578	10.0%	179	10.0%	40	0.0%	0	0%	0	10.0%	12	10.0%	70	10.0%	14	5.0%	34	35.0%	139	0.0%	0	0.0%	0	0.0%	0	5.0%	90
W El Norte Pkwy	S. Iris Ln to I-15	2,433	40.0%	716	40.0%	160	50.0%	15	5%	210	40.0%	48	40.0%	280	40.0%	56	60.0%	413	35.0%	139	15.0%	5	20.0%	31	20.0%	360	20.0%	0

APPENDIX E

Existing Plus Cumulative Without Project Intersection LOS Worksheets

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	1	4	2	0	0	4	149	7	2	966	331
Future Vol, veh/h	27	1	4	2	0	0	4	149	7	2	966	331
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	1	4	2	0	0	4	166	8	2	1073	368

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1439	1443	1257	1442	1623	170	1441	0	0	174	0	0
Stage 1	1261	1261	-	178	178	-	-	-	-	-	-	-
Stage 2	178	182	-	1264	1445	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	111	132	209	110	103	874	471	-	-	1403	-	-
Stage 1	209	241	-	824	752	-	-	-	-	-	-	-
Stage 2	824	749	-	208	197	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	110	130	209	105	101	874	471	-	-	1403	-	-
Mov Cap-2 Maneuver	110	130	-	105	101	-	-	-	-	-	-	-
Stage 1	207	239	-	817	746	-	-	-	-	-	-	-
Stage 2	817	743	-	201	195	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.2	40	0.3	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	471	-	-	118	105	1403	-	-
HCM Lane V/C Ratio	0.009	-	-	0.301	0.021	0.002	-	-
HCM Control Delay (s)	12.7	-	-	48.2	40	7.6	-	-
HCM Lane LOS	B	-	-	E	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	352	170	287	530	149	67	232	113	170	938	317
Future Volume (veh/h)	63	352	170	287	530	149	67	232	113	170	938	317
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	359	173	293	541	152	68	237	115	173	957	323
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	702	314	325	1172	524	92	914	409	205	1139	510
Arrive On Green	0.05	0.20	0.20	0.18	0.33	0.33	0.05	0.26	0.26	0.12	0.32	0.32
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	359	173	293	541	152	68	237	115	173	957	323
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.5	8.9	9.6	15.8	11.8	7.0	3.7	5.2	5.7	9.4	24.6	17.0
Cycle Q Clear(g_c), s	3.5	8.9	9.6	15.8	11.8	7.0	3.7	5.2	5.7	9.4	24.6	17.0
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	90	702	314	325	1172	524	92	914	409	205	1139	510
V/C Ratio(X)	0.71	0.51	0.55	0.90	0.46	0.29	0.74	0.26	0.28	0.85	0.84	0.63
Avail Cap(c_a), veh/h	217	1264	565	371	1571	703	109	993	444	235	1246	557
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	45.8	35.1	35.4	39.1	25.9	24.3	45.8	28.9	29.1	42.5	30.9	28.3
Incr Delay (d2), s/veh	3.9	0.6	1.5	21.0	0.3	0.3	15.6	0.1	0.4	19.3	4.9	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	1.8	4.4	4.3	9.6	5.8	3.1	2.2	2.6	2.5	5.7	12.7	7.7
LnGrp Delay(d),s/veh	49.7	35.6	36.9	60.1	26.2	24.6	61.4	29.0	29.4	61.8	35.8	30.4
LnGrp LOS	D	D	D	E	C	C	E	C	C	E	D	C
Approach Vol, veh/h		596			986			420			1453	
Approach Delay, s/veh		37.5			36.0			34.4			37.7	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	32.8	22.5	25.4	11.1	39.0	9.4	38.4
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	13.0	27.5	20.5	35.0	6.0	34.5	12.0	43.5
Max Q Clear Time (g_c+I1), s	11.4	7.7	17.8	11.6	5.7	26.6	5.5	13.8
Green Ext Time (p_c), s	0.0	8.8	0.1	7.8	0.0	4.9	0.0	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	41.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	243	82	326	588	20	21	36	145	61	178	130
Future Vol, veh/h	14	243	82	326	588	20	21	36	145	61	178	130
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	256	86	343	619	21	22	38	153	64	187	137
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	18.3	46	21.9	60.3
HCM LOS	C	E	C	F

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	10%	100%	0%	0%	100%	0%	0%	17%
Vol Thru, %	18%	0%	100%	50%	0%	100%	91%	48%
Vol Right, %	72%	0%	0%	50%	0%	0%	9%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	14	162	163	326	392	216	369
LT Vol	21	14	0	0	326	0	0	61
Through Vol	36	0	162	81	0	392	196	178
RT Vol	145	0	0	82	0	0	20	130
Lane Flow Rate	213	15	171	172	343	413	227	388
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.536	0.04	0.438	0.423	0.844	0.955	0.522	0.94
Departure Headway (Hd)	9.072	9.777	9.249	8.877	8.854	8.329	8.261	8.714
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	398	366	389	405	408	437	437	416
Service Time	6.832	7.537	7.008	6.636	6.611	6.086	6.018	6.465
HCM Lane V/C Ratio	0.535	0.041	0.44	0.425	0.841	0.945	0.519	0.933
HCM Control Delay	21.9	12.9	19.1	18	44.5	61.8	19.7	60.3
HCM Lane LOS	C	B	C	C	E	F	C	F
HCM 95th-tile Q	3.1	0.1	2.2	2.1	8	11.3	2.9	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	212	11	402	235	9	10	338	137	12	1232	139
Future Volume (veh/h)	66	212	11	402	235	9	10	338	137	12	1232	139
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	71	228	12	432	253	10	11	363	147	13	1325	149
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	746	39	445	757	30	27	1396	625	31	1404	628
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.02	0.39	0.39	0.02	0.40	0.40
Sat Flow, veh/h	1112	1754	92	1135	1780	70	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	71	0	240	432	0	263	11	363	147	13	1325	149
Grp Sat Flow(s),veh/h/ln	1112	0	1846	1135	0	1850	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.5	0.0	10.3	40.7	0.0	11.4	0.7	8.3	7.4	0.9	43.3	7.5
Cycle Q Clear(g_c), s	16.9	0.0	10.3	51.0	0.0	11.4	0.7	8.3	7.4	0.9	43.3	7.5
Prop In Lane	1.00		0.05	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	427	0	785	445	0	787	27	1396	625	31	1404	628
V/C Ratio(X)	0.17	0.00	0.31	0.97	0.00	0.33	0.40	0.26	0.24	0.42	0.94	0.24
Avail Cap(c_a), veh/h	432	0	793	445	0	787	89	1396	625	163	1431	640
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	28.8	0.0	22.8	41.8	0.0	23.1	58.5	24.5	24.2	58.3	34.9	24.1
Incr Delay (d2), s/veh	0.1	0.0	0.2	34.7	0.0	0.2	3.5	0.2	0.4	3.3	13.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	5.3	18.6	0.0	5.9	0.4	4.1	3.3	0.5	23.7	3.3
LnGrp Delay(d),s/veh	28.9	0.0	22.9	76.5	0.0	23.3	62.0	24.7	24.6	61.6	47.9	24.5
LnGrp LOS	C		C	E		C	E	C	C	E	D	C
Approach Vol, veh/h		311			695			521			1487	
Approach Delay, s/veh		24.3			56.4			25.5			45.7	
Approach LOS		C			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	54.8		57.0	7.8	55.1		57.0
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 44		* 52	6.0	48.5		51.0
Max Q Clear Time (g_c+I1), s	12.9	10.3		18.9	2.7	45.3		53.0
Green Ext Time (p_c), s	0.0	26.4		4.8	0.0	2.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	658	303	315	875	154	201	276	98	262	1141	109
Future Volume (veh/h)	48	658	303	315	875	154	201	276	98	262	1141	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	671	309	321	893	157	205	282	100	267	1164	111
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	877	392	436	986	173	283	1244	557	310	1255	561
Arrive On Green	0.05	0.25	0.25	0.13	0.33	0.33	0.08	0.35	0.35	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	3010	529	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	49	671	309	321	525	525	205	282	100	267	1164	111
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1769	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	2.3	29.0	30.1	14.8	46.8	46.8	9.6	9.3	4.6	12.6	52.2	6.1
Cycle Q Clear(g_c), s	2.3	29.0	30.1	14.8	46.8	46.8	9.6	9.3	4.6	12.6	52.2	6.1
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	877	392	436	579	579	283	1244	557	310	1255	561
V/C Ratio(X)	0.26	0.76	0.79	0.74	0.91	0.91	0.72	0.23	0.18	0.86	0.93	0.20
Avail Cap(c_a), veh/h	209	1094	489	436	621	621	292	1244	557	428	1255	561
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)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.30	0.30	0.30
Uniform Delay (d), s/veh	74.9	57.6	58.0	69.4	53.1	53.1	73.9	37.7	15.0	74.0	51.2	21.3
Incr Delay (d2), s/veh	0.5	3.2	8.0	5.7	17.1	17.2	7.1	0.1	0.2	3.2	4.8	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	1.1	14.6	14.0	7.4	25.7	25.7	4.9	4.6	2.0	6.1	26.4	2.7
LnGrp Delay(d),s/veh	75.4	60.8	66.0	75.1	70.2	70.2	81.0	37.8	15.2	77.2	56.0	21.5
LnGrp LOS	E	E	E	E	E	E	F	D	B	E	E	C
Approach Vol, veh/h		1029			1371			587			1542	
Approach Delay, s/veh		63.0			71.4			49.1			57.2	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	64.9	27.2	47.2	20.5	65.4	14.0	60.3
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	20.5	52.2	16.9	* 51	14.0	* 59	10.0	57.9
Max Q Clear Time (g_c+I1), s	14.6	11.3	16.8	32.1	11.6	54.2	4.3	48.8
Green Ext Time (p_c), s	0.2	2.6	0.1	8.8	0.2	3.0	0.0	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	61.8
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	702	5	8	879	105	5	2	13	131	1	366
Future Volume (veh/h)	211	702	5	8	879	105	5	2	13	131	1	366
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	218	724	5	8	906	108	5	2	13	135	1	377
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	2064	14	89	1721	770	68	52	337	391	1	381
Arrive On Green	0.14	0.57	0.57	0.05	0.49	0.49	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3603	25	1774	3539	1583	1001	215	1400	1393	4	1580
Grp Volume(v), veh/h	218	356	373	8	906	108	5	0	15	135	0	378
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	1774	1770	1583	1001	0	1616	1393	0	1584
Q Serve(g_s), s	13.2	11.8	11.8	0.5	19.4	4.1	0.3	0.0	0.8	9.0	0.0	26.2
Cycle Q Clear(g_c), s	13.2	11.8	11.8	0.5	19.4	4.1	26.5	0.0	0.8	9.8	0.0	26.2
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	250	1014	1064	89	1721	770	68	0	389	391	0	382
V/C Ratio(X)	0.87	0.35	0.35	0.09	0.53	0.14	0.07	0.00	0.04	0.35	0.00	0.99
Avail Cap(c_a), veh/h	411	1014	1064	105	1721	770	68	0	389	391	0	382
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	0.52	0.52	0.52	1.00	0.00	1.00	0.97	0.00	0.97
Uniform Delay (d), s/veh	46.3	12.6	12.6	49.9	19.5	15.6	54.9	0.0	32.0	35.8	0.0	41.6
Incr Delay (d2), s/veh	8.9	1.0	0.9	0.2	0.6	0.2	0.4	0.0	0.0	0.5	0.0	42.8
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	7.1	6.0	6.3	0.2	9.6	1.8	0.2	0.0	0.4	3.5	0.0	16.0
LnGrp Delay(d),s/veh	55.1	13.5	13.5	50.0	20.1	15.8	55.3	0.0	32.0	36.3	0.0	84.4
LnGrp LOS	E	B	B	D	C	B	E		C	D		F
Approach Vol, veh/h		947			1022			20			513	
Approach Delay, s/veh		23.1			19.9			37.9			71.7	
Approach LOS		C			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	68.0		31.5	20.0	58.5		31.5
Change Period (Y+Rc), s	5.0	* 5		5.0	4.5	5.0		* 5
Max Green Setting (Gmax), s	6.5	* 63		26.0	25.5	44.0		* 27
Max Q Clear Time (g_c+I1), s	12.5	13.8		28.2	15.2	21.4		28.5
Green Ext Time (p_c), s	0.0	4.5		0.0	0.3	6.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	838	46	288	919	88	19	86	137	242	242	60
Future Volume (veh/h)	42	838	46	288	919	88	19	86	137	242	242	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	855	0	294	938	90	19	88	140	247	247	61
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	1432	641	308	1779	171	36	227	193	242	443	377
Arrive On Green	0.03	0.40	0.00	0.17	0.55	0.55	0.02	0.12	0.12	0.14	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3264	313	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	43	855	0	294	509	519	19	88	140	247	247	61
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1807	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.6	20.9	0.0	18.1	20.2	20.2	1.2	4.8	9.4	15.0	12.8	3.4
Cycle Q Clear(g_c), s	2.6	20.9	0.0	18.1	20.2	20.2	1.2	4.8	9.4	15.0	12.8	3.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	1432	641	308	965	985	36	227	193	242	443	377
V/C Ratio(X)	0.73	0.60	0.00	0.95	0.53	0.53	0.53	0.39	0.73	1.02	0.56	0.16
Avail Cap(c_a), veh/h	90	1432	641	308	965	985	89	525	446	242	686	583
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	25.7	0.0	45.0	16.0	16.0	53.4	44.5	46.6	47.5	36.8	33.2
Incr Delay (d2), s/veh	12.0	1.8	0.0	39.0	2.1	2.0	9.0	0.8	3.9	63.4	0.8	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	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.6	0.0	12.2	10.3	10.5	0.7	2.5	4.3	11.6	6.7	1.5
LnGrp Delay(d),s/veh	64.7	27.5	0.0	84.0	18.0	18.0	62.4	45.3	50.4	111.0	37.6	33.4
LnGrp LOS	E	C		F	B	B	E	D	D	F	D	C
Approach Vol, veh/h		898			1322			247			555	
Approach Delay, s/veh		29.3			32.7			49.5			69.8	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	49.5	6.2	31.2	7.7	65.0	19.0	18.4
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	19.1	26.9	5.5	40.5	5.6	40.4	15.0	31.0
Max Q Clear Time (g_c+I1), s	20.1	22.9	3.2	14.8	4.6	22.2	17.0	11.4
Green Ext Time (p_c), s	0.0	3.0	0.0	2.1	0.0	9.5	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	132	3	0	2	1	1	8	519	4	1	199	34
Future Vol, veh/h	132	3	0	2	1	1	8	519	4	1	199	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	3	0	2	1	1	8	546	4	1	209	36

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	794	795	227	795	811	548	245	0	0	550	0	0
Stage 1	229	229	-	564	564	-	-	-	-	-	-	-
Stage 2	565	566	-	231	247	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	306	320	812	305	313	536	1321	-	-	1020	-	-
Stage 1	774	715	-	510	508	-	-	-	-	-	-	-
Stage 2	510	507	-	772	702	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	303	318	812	301	311	536	1321	-	-	1020	-	-
Mov Cap-2 Maneuver	303	318	-	301	311	-	-	-	-	-	-	-
Stage 1	769	714	-	507	505	-	-	-	-	-	-	-
Stage 2	505	504	-	768	701	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27	15.7	0.1	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	303	341	1020	-	-
HCM Lane V/C Ratio	0.006	-	-	0.469	0.012	0.001	-	-
HCM Control Delay (s)	7.7	-	-	27	15.7	8.5	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.4	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	399	95	109	274	108	159	487	187	141	262	67
Future Volume (veh/h)	151	399	95	109	274	108	159	487	187	141	262	67
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	156	411	98	112	282	111	164	502	193	145	270	69
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	781	349	143	678	303	189	816	365	182	801	359
Arrive On Green	0.11	0.22	0.22	0.08	0.19	0.19	0.11	0.23	0.23	0.10	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	156	411	98	112	282	111	164	502	193	145	270	69
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.6	6.7	3.4	4.1	4.6	4.0	6.0	8.3	7.0	5.2	4.2	2.3
Cycle Q Clear(g_c), s	5.6	6.7	3.4	4.1	4.6	4.0	6.0	8.3	7.0	5.2	4.2	2.3
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	195	781	349	143	678	303	189	816	365	182	801	359
V/C Ratio(X)	0.80	0.53	0.28	0.78	0.42	0.37	0.87	0.62	0.53	0.80	0.34	0.19
Avail Cap(c_a), veh/h	230	1898	849	197	1833	820	189	1429	639	189	1429	639
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	28.5	22.6	21.3	29.6	23.3	23.1	28.9	22.6	22.1	28.8	21.3	20.5
Incr Delay (d2), s/veh	13.3	0.6	0.4	8.5	0.4	0.7	30.9	0.8	1.2	18.5	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	3.5	3.3	1.5	2.3	2.3	1.8	4.5	4.1	3.1	3.5	2.1	1.0
LnGrp Delay(d),s/veh	41.8	23.1	21.7	38.2	23.7	23.8	59.7	23.4	23.3	47.3	21.5	20.8
LnGrp LOS	D	C	C	D	C	C	E	C	C	D	C	C
Approach Vol, veh/h		665			505			859			484	
Approach Delay, s/veh		27.3			26.9			30.3			29.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	22.6	9.8	20.5	13.0	22.4	11.7	18.6
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	7.0	26.5	7.3	35.2	7.0	26.5	8.5	34.0
Max Q Clear Time (g_c+I1), s	7.2	10.3	6.1	8.7	8.0	6.2	7.6	6.6
Green Ext Time (p_c), s	0.0	4.8	0.0	5.8	0.0	5.2	0.0	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	59.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	327	46	137	259	36	91	166	300	19	49	23
Future Vol, veh/h	37	327	46	137	259	36	91	166	300	19	49	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	355	50	149	282	39	99	180	326	21	53	25
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	17.4	15.8	131.4	14.3
HCM LOS	C	C	F	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	16%	100%	0%	0%	100%	0%	0%	21%
Vol Thru, %	30%	0%	100%	70%	0%	100%	71%	54%
Vol Right, %	54%	0%	0%	30%	0%	0%	29%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	557	37	218	155	137	173	122	91
LT Vol	91	37	0	0	137	0	0	19
Through Vol	166	0	218	109	0	173	86	49
RT Vol	300	0	0	46	0	0	36	23
Lane Flow Rate	605	40	237	168	149	188	133	99
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.199	0.092	0.51	0.353	0.34	0.402	0.277	0.231
Departure Headway (Hd)	7.132	8.988	8.462	8.243	8.96	8.434	8.217	8.944
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	401	429	440	404	430	440	404
Service Time	4.889	6.688	6.162	5.943	6.66	6.134	5.917	6.644
HCM Lane V/C Ratio	1.189	0.1	0.552	0.382	0.369	0.437	0.302	0.245
HCM Control Delay	131.4	12.6	19.6	15.4	16.2	16.7	14	14.3
HCM Lane LOS	F	B	C	C	C	C	B	B
HCM 95th-tile Q	22.5	0.3	2.8	1.6	1.5	1.9	1.1	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	310	15	132	89	8	16	675	204	10	378	60
Future Volume (veh/h)	186	310	15	132	89	8	16	675	204	10	378	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	196	326	16	139	94	8	17	711	215	11	398	63
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	495	607	30	303	584	50	43	1294	579	29	1267	567
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.02	0.37	0.37	0.02	0.36	0.36
Sat Flow, veh/h	1287	1761	86	1034	1693	144	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	196	0	342	139	0	102	17	711	215	11	398	63
Grp Sat Flow(s),veh/h/ln	1287	0	1847	1034	0	1837	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.9	0.0	10.6	8.9	0.0	2.7	0.7	11.4	7.1	0.4	5.8	1.9
Cycle Q Clear(g_c), s	11.6	0.0	10.6	19.5	0.0	2.7	0.7	11.4	7.1	0.4	5.8	1.9
Prop In Lane	1.00		0.05	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	495	0	637	303	0	633	43	1294	579	29	1267	567
V/C Ratio(X)	0.40	0.00	0.54	0.46	0.00	0.16	0.40	0.55	0.37	0.38	0.31	0.11
Avail Cap(c_a), veh/h	727	0	970	483	0	952	149	1636	732	273	1859	832
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	20.3	0.0	18.8	26.7	0.0	16.2	34.3	18.0	16.6	34.7	16.6	15.3
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.8	0.0	0.1	2.2	0.8	0.8	3.0	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	3.2	0.0	5.5	2.6	0.0	1.4	0.4	5.7	3.2	0.2	2.9	0.9
LnGrp Delay(d),s/veh	20.6	0.0	19.3	27.5	0.0	16.3	36.6	18.8	17.5	37.7	16.9	15.5
LnGrp LOS	C		B	C		B	D	B	B	D	B	B
Approach Vol, veh/h		538			241			943			472	
Approach Delay, s/veh		19.8			22.7			18.8			17.2	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.2	33.6		30.6	7.7	33.1		30.6
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 33		* 38	6.0	37.5		37.0
Max Q Clear Time (g_c+I1), s	2.4	13.4		13.6	2.7	7.8		21.5
Green Ext Time (p_c), s	0.0	12.7		3.4	0.0	16.7		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	1011	220	153	707	145	381	704	410	233	269	48
Future Volume (veh/h)	52	1011	220	153	707	145	381	704	410	233	269	48
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	1064	232	161	744	153	401	741	432	245	283	51
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1229	550	574	1362	280	766	875	391	288	366	164
Arrive On Green	0.06	0.35	0.35	0.17	0.47	0.47	0.22	0.25	0.25	0.08	0.10	0.10
Sat Flow, veh/h	3442	3539	1583	3442	2925	601	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	55	1064	232	161	450	447	401	741	432	245	283	51
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1757	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	2.5	46.3	18.5	6.7	30.1	30.1	16.9	32.9	27.4	11.6	12.9	4.2
Cycle Q Clear(g_c), s	2.5	46.3	18.5	6.7	30.1	30.1	16.9	32.9	27.4	11.6	12.9	4.2
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	1229	550	574	824	818	766	875	391	288	366	164
V/C Ratio(X)	0.29	0.87	0.42	0.28	0.55	0.55	0.52	0.85	1.10	0.85	0.77	0.31
Avail Cap(c_a), veh/h	209	1229	550	574	824	818	766	1158	518	394	1201	537
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)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	74.8	50.3	41.2	60.1	31.6	31.6	56.5	59.1	28.1	74.6	72.1	50.3
Incr Delay (d2), s/veh	0.5	7.3	2.1	0.1	2.6	2.6	0.3	5.0	71.1	9.0	4.0	1.2
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	1.2	23.9	8.4	3.2	15.2	15.1	8.1	16.7	19.7	5.9	6.5	1.9
LnGrp Delay(d),s/veh	75.3	57.6	43.3	60.2	34.2	34.2	56.8	64.1	99.2	83.6	76.0	51.5
LnGrp LOS	E	E	D	E	C	C	E	E	F	F	E	D
Approach Vol, veh/h		1351			1058			1574			579	
Approach Delay, s/veh		55.9			38.1			71.9			77.1	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	47.7	33.8	63.6	43.6	24.0	14.3	83.1
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	13.8	54.0	10.4	* 57	16.7	* 56	10.0	57.7
Max Q Clear Time (g_c+I1), s	12.6	34.9	8.7	48.3	18.9	14.9	4.5	32.1
Green Ext Time (p_c), s	0.2	5.9	0.2	6.7	0.0	2.2	0.0	10.6

Intersection Summary	
HCM 2010 Ctrl Delay	60.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	1044	13	34	785	234	7	3	14	122	0	191
Future Volume (veh/h)	453	1044	13	34	785	234	7	3	14	122	0	191
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	487	1123	14	37	844	252	8	3	15	131	0	205
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	700	2403	30	66	1094	489	106	43	216	275	0	253
Arrive On Green	0.39	0.67	0.67	0.04	0.31	0.31	0.16	0.16	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1774	3580	45	1774	3539	1583	1172	271	1353	1389	0	1583
Grp Volume(v), veh/h	487	555	582	37	844	252	8	0	18	131	0	205
Grp Sat Flow(s),veh/h/ln	1774	1770	1855	1774	1770	1583	1172	0	1624	1389	0	1583
Q Serve(g_s), s	25.2	16.5	16.5	2.3	23.8	14.4	0.7	0.0	1.0	9.7	0.0	13.7
Cycle Q Clear(g_c), s	25.2	16.5	16.5	2.3	23.8	14.4	14.5	0.0	1.0	10.8	0.0	13.7
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	700	1188	1245	66	1094	489	106	0	260	275	0	253
V/C Ratio(X)	0.70	0.47	0.47	0.56	0.77	0.51	0.08	0.00	0.07	0.48	0.00	0.81
Avail Cap(c_a), veh/h	700	1188	1245	105	1094	489	180	0	362	355	0	345
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	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	8.7	8.7	52.1	34.5	31.2	51.6	0.0	39.2	43.8	0.0	44.6
Incr Delay (d2), s/veh	2.8	1.3	1.3	4.6	4.4	3.2	0.3	0.0	0.1	1.3	0.0	9.8
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	12.9	8.5	8.8	1.2	12.3	6.7	0.2	0.0	0.5	3.8	0.0	6.7
LnGrp Delay(d),s/veh	30.6	10.0	9.9	56.7	38.9	34.4	51.9	0.0	39.4	45.1	0.0	54.4
LnGrp LOS	C	A	A	E	D	C	D		D	D		D
Approach Vol, veh/h		1624			1133			26			336	
Approach Delay, s/veh		16.1			38.5			43.2			50.8	
Approach LOS		B			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	78.8		22.6	48.4	39.0		22.6
Change Period (Y+Rc), s	4.5	5.0		5.0	5.0	* 5		* 5
Max Green Setting (Gmax), s	6.5	65.0		24.0	37.5	* 34		* 25
Max Q Clear Time (g_c+I1), s	4.3	18.5		15.7	27.2	25.8		16.5
Green Ext Time (p_c), s	0.0	10.2		1.1	5.6	3.8		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	861	47	182	865	232	59	259	274	231	127	45
Future Volume (veh/h)	79	861	47	182	865	232	59	259	274	231	127	45
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	888	0	188	892	239	61	267	282	238	131	46
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1274	570	217	1171	313	78	389	331	258	578	491
Arrive On Green	0.06	0.36	0.00	0.12	0.42	0.42	0.04	0.21	0.21	0.15	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	2763	739	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	81	888	0	188	571	560	61	267	282	238	131	46
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1732	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.0	23.6	0.0	11.4	30.2	30.3	3.7	14.6	18.9	14.6	5.7	2.3
Cycle Q Clear(g_c), s	5.0	23.6	0.0	11.4	30.2	30.3	3.7	14.6	18.9	14.6	5.7	2.3
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	1274	570	217	750	734	78	389	331	258	578	491
V/C Ratio(X)	0.79	0.70	0.00	0.87	0.76	0.76	0.78	0.69	0.85	0.92	0.23	0.09
Avail Cap(c_a), veh/h	113	1274	570	226	750	734	110	525	446	258	681	579
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	30.1	0.0	47.4	26.9	27.0	52.0	40.2	41.9	46.4	28.1	26.9
Incr Delay (d2), s/veh	26.7	3.2	0.0	27.1	7.2	7.4	17.5	1.7	10.4	35.9	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	3.2	12.0	0.0	7.2	16.2	16.0	2.2	7.7	9.2	9.7	3.0	1.0
LnGrp Delay(d),s/veh	77.9	33.3	0.0	74.5	34.1	34.3	69.5	41.9	52.2	82.3	28.3	27.0
LnGrp LOS	E	C		E	C	C	E	D	D	F	C	C
Approach Vol, veh/h		969			1319			610			415	
Approach Delay, s/veh		37.0			40.0			49.4			59.1	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	44.6	8.9	39.1	10.4	51.6	20.0	28.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	14.0	31.0	6.8	40.2	7.0	38.0	16.0	31.0
Max Q Clear Time (g_c+I1), s	13.4	25.6	5.7	7.7	7.0	32.3	16.6	20.9
Green Ext Time (p_c), s	0.0	4.1	0.0	2.9	0.0	4.3	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

APPENDIX F

Existing Plus Cumulative With Project Intersection LOS Worksheets

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	1	50	2	0	0	15	149	7	2	966	332
Future Vol, veh/h	31	1	50	2	0	0	15	149	7	2	966	332
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	1	56	2	0	0	17	166	8	2	1073	369

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1466	1470	1258	1494	1650	170	1442	0	0	174	0	0
Stage 1	1262	1262	-	204	204	-	-	-	-	-	-	-
Stage 2	204	208	-	1290	1446	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	127	209	101	99	874	470	-	-	1403	-	-
Stage 1	208	241	-	798	733	-	-	-	-	-	-	-
Stage 2	798	730	-	201	197	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	102	121	209	71	95	874	470	-	-	1403	-	-
Mov Cap-2 Maneuver	102	121	-	71	95	-	-	-	-	-	-	-
Stage 1	201	239	-	769	707	-	-	-	-	-	-	-
Stage 2	769	704	-	146	195	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.7	57.3	1.1	0
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	470	-	-	102	206	71	1403	-	-
HCM Lane V/C Ratio	0.035	-	-	0.338	0.275	0.031	0.002	-	-
HCM Control Delay (s)	12.9	-	-	57.3	29	57.3	7.6	-	-
HCM Lane LOS	B	-	-	F	D	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	1.1	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	352	170	287	530	149	67	243	113	175	980	317
Future Volume (veh/h)	63	352	170	287	530	149	67	243	113	175	980	317
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	359	173	293	541	152	68	248	115	179	1000	323
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	697	312	325	1167	522	91	920	411	210	1158	518
Arrive On Green	0.05	0.20	0.20	0.18	0.33	0.33	0.05	0.26	0.26	0.12	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	359	173	293	541	152	68	248	115	179	1000	323
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.5	9.0	9.8	16.1	12.0	7.1	3.8	5.5	5.8	9.8	26.3	17.1
Cycle Q Clear(g_c), s	3.5	9.0	9.8	16.1	12.0	7.1	3.8	5.5	5.8	9.8	26.3	17.1
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	89	697	312	325	1167	522	91	920	411	210	1158	518
V/C Ratio(X)	0.72	0.52	0.55	0.90	0.46	0.29	0.75	0.27	0.28	0.85	0.86	0.62
Avail Cap(c_a), veh/h	214	1247	558	366	1550	694	107	980	438	232	1230	550
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	46.5	35.6	35.9	39.7	26.3	24.7	46.5	29.2	29.3	42.9	31.3	28.2
Incr Delay (d2), s/veh	4.1	0.6	1.5	21.7	0.3	0.3	16.9	0.2	0.4	21.5	6.3	2.0
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	1.8	4.4	4.4	9.9	5.9	3.1	2.3	2.7	2.5	6.1	13.8	7.7
LnGrp Delay(d),s/veh	50.5	36.2	37.5	61.4	26.6	25.0	63.4	29.4	29.7	64.4	37.6	30.2
LnGrp LOS	D	D	D	E	C	C	E	C	C	E	D	C
Approach Vol, veh/h		596			986			431			1502	
Approach Delay, s/veh		38.1			36.7			34.8			39.2	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	33.3	22.7	25.6	11.1	40.0	9.5	38.8
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	13.0	27.5	20.5	35.0	6.0	34.5	12.0	43.5
Max Q Clear Time (g_c+I1), s	11.8	7.8	18.1	11.8	5.8	28.3	5.5	14.0
Green Ext Time (p_c), s	0.0	9.2	0.1	7.8	0.0	4.2	0.0	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	44.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	243	82	326	588	20	21	41	145	61	196	134
Future Vol, veh/h	15	243	82	326	588	20	21	41	145	61	196	134
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	256	86	343	619	21	22	43	153	64	206	141
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	18.5	46.2	22.6	76.2
HCM LOS	C	E	C	F

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	10%	100%	0%	0%	100%	0%	0%	16%
Vol Thru, %	20%	0%	100%	50%	0%	100%	91%	50%
Vol Right, %	70%	0%	0%	50%	0%	0%	9%	34%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	207	15	162	163	326	392	216	391
LT Vol	21	15	0	0	326	0	0	61
Through Vol	41	0	162	81	0	392	196	196
RT Vol	145	0	0	82	0	0	20	134
Lane Flow Rate	218	16	171	172	343	413	227	412
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.549	0.043	0.435	0.421	0.84	0.953	0.521	1.007
Departure Headway (Hd)	9.245	9.993	9.463	9.089	9.076	8.55	8.481	8.811
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	392	360	384	398	401	429	427	416
Service Time	6.945	7.693	7.163	6.789	6.776	6.25	6.181	6.481
HCM Lane V/C Ratio	0.556	0.044	0.445	0.432	0.855	0.963	0.532	0.99
HCM Control Delay	22.6	13.1	19.3	18.2	44.5	62.1	20	76.2
HCM Lane LOS	C	B	C	C	E	F	C	F
HCM 95th-tile Q	3.2	0.1	2.1	2	7.9	11.1	2.9	12.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	212	11	402	235	9	10	346	137	12	1264	150
Future Volume (veh/h)	69	212	11	402	235	9	10	346	137	12	1264	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	228	12	432	253	10	11	372	147	13	1359	161
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	743	39	443	754	30	27	1406	629	31	1414	632
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.02	0.40	0.40	0.02	0.40	0.40
Sat Flow, veh/h	1112	1754	92	1135	1780	70	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	74	0	240	432	0	263	11	372	147	13	1359	161
Grp Sat Flow(s),veh/h/ln	1112	0	1846	1135	0	1850	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.8	0.0	10.4	40.6	0.0	11.5	0.7	8.5	7.4	0.9	45.1	8.2
Cycle Q Clear(g_c), s	17.3	0.0	10.4	51.0	0.0	11.5	0.7	8.5	7.4	0.9	45.1	8.2
Prop In Lane	1.00		0.05	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	424	0	782	443	0	783	27	1406	629	31	1414	632
V/C Ratio(X)	0.17	0.00	0.31	0.98	0.00	0.34	0.40	0.26	0.23	0.42	0.96	0.25
Avail Cap(c_a), veh/h	429	0	789	443	0	783	88	1406	629	162	1425	637
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	29.2	0.0	23.0	42.2	0.0	23.3	58.8	24.5	24.1	58.6	35.3	24.2
Incr Delay (d2), s/veh	0.1	0.0	0.2	36.4	0.0	0.2	3.6	0.2	0.4	3.3	15.8	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	1.8	0.0	5.3	18.7	0.0	5.9	0.4	4.2	3.3	0.5	25.0	3.7
LnGrp Delay(d),s/veh	29.3	0.0	23.2	78.6	0.0	23.5	62.3	24.7	24.5	61.8	51.0	24.6
LnGrp LOS	C		C	E		C	E	C	C	E	D	C
Approach Vol, veh/h		314			695			530			1533	
Approach Delay, s/veh		24.6			57.8			25.4			48.4	
Approach LOS		C			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	55.4		57.0	7.8	55.6		57.0
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 44		* 52	6.0	48.5		51.0
Max Q Clear Time (g_c+I1), s	12.9	10.5		19.3	2.7	47.1		53.0
Green Ext Time (p_c), s	0.0	26.8		4.8	0.0	1.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	658	303	315	875	155	201	281	98	266	1160	118
Future Volume (veh/h)	50	658	303	315	875	155	201	281	98	266	1160	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	671	309	321	893	158	205	287	100	271	1184	120
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	877	392	438	985	174	283	1240	555	314	1255	561
Arrive On Green	0.05	0.25	0.25	0.13	0.33	0.33	0.08	0.35	0.35	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	3007	532	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	51	671	309	321	526	525	205	287	100	271	1184	120
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1769	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	2.3	29.0	30.1	14.8	46.9	46.9	9.6	9.5	4.6	12.8	53.5	6.6
Cycle Q Clear(g_c), s	2.3	29.0	30.1	14.8	46.9	46.9	9.6	9.5	4.6	12.8	53.5	6.6
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	877	392	438	580	579	283	1240	555	314	1255	561
V/C Ratio(X)	0.27	0.76	0.79	0.73	0.91	0.91	0.72	0.23	0.18	0.86	0.94	0.21
Avail Cap(c_a), veh/h	209	1094	489	438	621	621	292	1240	555	428	1255	561
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)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.27	0.27	0.27
Uniform Delay (d), s/veh	74.8	57.6	58.0	69.3	53.1	53.1	73.9	37.9	15.1	74.0	51.6	21.4
Incr Delay (d2), s/veh	0.5	3.2	8.0	5.5	17.3	17.3	7.2	0.1	0.2	3.0	5.3	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	1.1	14.6	14.0	7.4	25.7	25.7	4.9	4.6	2.0	6.2	27.1	2.9
LnGrp Delay(d),s/veh	75.4	60.8	66.0	74.8	70.3	70.4	81.1	38.0	15.3	76.9	56.9	21.6
LnGrp LOS	E	E	E	E	E	E	F	D	B	E	E	C
Approach Vol, veh/h		1031			1372			592			1575	
Approach Delay, s/veh		63.0			71.4			49.1			57.7	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.2	64.7	27.3	47.2	20.5	65.4	14.1	60.3
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	20.5	52.2	16.9	* 51	14.0	* 59	10.0	57.9
Max Q Clear Time (g_c+I1), s	11.4	11.5	16.8	32.1	11.6	55.5	4.3	48.9
Green Ext Time (p_c), s	0.2	2.6	0.1	8.8	0.2	2.1	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	61.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	704	5	8	886	105	5	2	13	131	1	377
Future Volume (veh/h)	214	704	5	8	886	105	5	2	13	131	1	377
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	221	726	5	8	913	108	5	2	13	135	1	389
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	2064	14	89	1715	767	65	52	337	391	1	381
Arrive On Green	0.14	0.57	0.57	0.05	0.48	0.48	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3603	25	1774	3539	1583	990	215	1400	1393	4	1580
Grp Volume(v), veh/h	221	357	374	8	913	108	5	0	15	135	0	390
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	1774	1770	1583	990	0	1616	1393	0	1584
Q Serve(g_s), s	13.4	11.9	11.9	0.5	19.7	4.2	0.0	0.0	0.8	9.0	0.0	26.5
Cycle Q Clear(g_c), s	13.4	11.9	11.9	0.5	19.7	4.2	26.5	0.0	0.8	9.8	0.0	26.5
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	253	1014	1064	89	1715	767	65	0	389	391	0	382
V/C Ratio(X)	0.87	0.35	0.35	0.09	0.53	0.14	0.08	0.00	0.04	0.35	0.00	1.02
Avail Cap(c_a), veh/h	411	1014	1064	105	1715	767	65	0	389	391	0	382
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	0.53	0.53	0.53	1.00	0.00	1.00	0.97	0.00	0.97
Uniform Delay (d), s/veh	46.2	12.6	12.6	49.9	19.7	15.7	55.0	0.0	32.0	35.8	0.0	41.8
Incr Delay (d2), s/veh	9.3	1.0	0.9	0.2	0.6	0.2	0.5	0.0	0.0	0.5	0.0	51.1
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	7.2	6.0	6.3	0.2	9.8	1.8	0.2	0.0	0.4	3.5	0.0	17.0
LnGrp Delay(d),s/veh	55.5	13.5	13.5	50.0	20.3	15.9	55.5	0.0	32.0	36.3	0.0	92.9
LnGrp LOS	E	B	B	D	C	B	E		C	D		F
Approach Vol, veh/h		952			1029			20			525	
Approach Delay, s/veh		23.3			20.1			37.9			78.3	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	68.0		31.5	20.2	58.3		31.5
Change Period (Y+Rc), s	5.0	* 5		5.0	4.5	5.0		* 5
Max Green Setting (Gmax), s	6.5	* 63		26.0	25.5	44.0		* 27
Max Q Clear Time (g_c+I1), s	12.5	13.9		28.5	15.4	21.7		28.5
Green Ext Time (p_c), s	0.0	4.5		0.0	0.3	6.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		33.5
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	838	46	288	919	90	19	87	137	249	246	67
Future Volume (veh/h)	44	838	46	288	919	90	19	87	137	249	246	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	45	855	0	294	938	92	19	89	140	254	251	68
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1431	640	308	1772	174	36	227	193	242	444	377
Arrive On Green	0.03	0.40	0.00	0.17	0.54	0.54	0.02	0.12	0.12	0.14	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3257	319	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	45	855	0	294	510	520	19	89	140	254	251	68
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1806	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.8	20.9	0.0	18.1	20.3	20.3	1.2	4.8	9.4	15.0	13.0	3.8
Cycle Q Clear(g_c), s	2.8	20.9	0.0	18.1	20.3	20.3	1.2	4.8	9.4	15.0	13.0	3.8
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	1431	640	308	963	983	36	227	193	242	444	377
V/C Ratio(X)	0.75	0.60	0.00	0.95	0.53	0.53	0.53	0.39	0.72	1.05	0.57	0.18
Avail Cap(c_a), veh/h	90	1431	640	308	963	983	89	525	446	242	686	583
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	25.7	0.0	45.0	16.1	16.1	53.4	44.5	46.5	47.5	36.9	33.3
Incr Delay (d2), s/veh	12.7	1.8	0.0	39.0	2.1	2.0	9.0	0.8	3.8	71.6	0.8	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	1.6	10.6	0.0	12.2	10.5	10.7	0.7	2.5	4.3	12.1	6.8	1.7
LnGrp Delay(d),s/veh	65.4	27.6	0.0	84.0	18.1	18.1	62.4	45.3	50.3	119.1	37.7	33.5
LnGrp LOS	E	C		F	B	B	E	D	D	F	D	C
Approach Vol, veh/h		900			1324			248			573	
Approach Delay, s/veh		29.5			32.7			49.5			73.3	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	49.5	6.2	31.2	7.7	64.8	19.0	18.4
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	19.1	26.9	5.5	40.5	5.6	40.4	15.0	31.0
Max Q Clear Time (g_c+I1), s	20.1	22.9	3.2	15.0	4.8	22.3	17.0	11.4
Green Ext Time (p_c), s	0.0	3.0	0.0	2.2	0.0	9.4	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.8
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	32	4	9	335	4	15	0	35	14	0	6
Future Vol, veh/h	1	32	4	9	335	4	15	0	35	14	0	6
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	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	36	4	10	372	4	17	0	39	16	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	376	0	0	40	0	0	438	436	38	454	436	374
Stage 1	-	-	-	-	-	-	40	40	-	394	394	-
Stage 2	-	-	-	-	-	-	398	396	-	60	42	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1182	-	-	1570	-	-	529	514	1034	516	514	672
Stage 1	-	-	-	-	-	-	975	862	-	631	605	-
Stage 2	-	-	-	-	-	-	628	604	-	951	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1182	-	-	1570	-	-	521	510	1034	494	510	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	521	510	-	494	510	-
Stage 1	-	-	-	-	-	-	974	861	-	630	601	-
Stage 2	-	-	-	-	-	-	618	600	-	914	859	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	9.8	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	798	1182	-	-	1570	-	-	537
HCM Lane V/C Ratio	0.07	0.001	-	-	0.006	-	-	0.041
HCM Control Delay (s)	9.8	8	-	-	7.3	-	-	12
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	134	3	21	2	1	1	54	519	4	1	199	38
Future Vol, veh/h	134	3	21	2	1	1	54	519	4	1	199	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	141	3	22	2	1	1	57	546	4	1	209	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	894	895	229	906	913	548	249	0	0	550	0	0
Stage 1	231	231	-	662	662	-	-	-	-	-	-	-
Stage 2	663	664	-	244	251	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	262	280	810	257	273	536	1317	-	-	1020	-	-
Stage 1	772	713	-	451	459	-	-	-	-	-	-	-
Stage 2	450	458	-	760	699	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	252	268	810	239	261	536	1317	-	-	1020	-	-
Mov Cap-2 Maneuver	252	268	-	239	261	-	-	-	-	-	-	-
Stage 1	739	712	-	432	439	-	-	-	-	-	-	-
Stage 2	429	438	-	735	698	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.2	17.9	0.7	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1317	-	-	252	647	284	1020	-	-
HCM Lane V/C Ratio	0.043	-	-	0.56	0.039	0.015	0.001	-	-
HCM Control Delay (s)	7.9	-	-	36	10.8	17.9	8.5	-	-
HCM Lane LOS	A	-	-	E	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.1	0.1	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	399	95	109	274	108	159	533	187	143	282	67
Future Volume (veh/h)	151	399	95	109	274	108	159	533	187	143	282	67
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	156	411	98	112	282	111	164	549	193	147	291	69
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	770	344	143	667	299	184	860	385	184	860	385
Arrive On Green	0.11	0.22	0.22	0.08	0.19	0.19	0.10	0.24	0.24	0.10	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	156	411	98	112	282	111	164	549	193	147	291	69
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.8	6.9	3.5	4.2	4.7	4.1	6.2	9.4	7.1	5.5	4.6	2.3
Cycle Q Clear(g_c), s	5.8	6.9	3.5	4.2	4.7	4.1	6.2	9.4	7.1	5.5	4.6	2.3
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	194	770	344	143	667	299	184	860	385	184	860	385
V/C Ratio(X)	0.80	0.53	0.28	0.78	0.42	0.37	0.89	0.64	0.50	0.80	0.34	0.18
Avail Cap(c_a), veh/h	223	1844	825	192	1781	797	184	1388	621	184	1388	621
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	29.4	23.4	22.0	30.5	24.2	23.9	29.9	22.9	22.0	29.6	21.1	20.2
Incr Delay (d2), s/veh	14.5	0.6	0.4	9.8	0.4	0.8	36.9	0.8	1.0	20.2	0.2	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	3.6	3.4	1.6	2.4	2.4	1.9	4.9	4.7	3.2	3.7	2.3	1.0
LnGrp Delay(d),s/veh	43.9	24.0	22.5	40.2	24.6	24.7	66.8	23.7	23.0	49.8	21.3	20.5
LnGrp LOS	D	C	C	D	C	C	E	C	C	D	C	C
Approach Vol, veh/h		665			505			906			507	
Approach Delay, s/veh		28.4			28.1			31.4			29.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	23.9	9.9	20.7	13.0	23.9	11.9	18.7
Change Period (Y+Rc), s	6.0	7.5	4.5	6.0	6.0	7.5	4.5	6.0
Max Green Setting (Gmax), s	7.0	26.5	7.3	35.2	7.0	26.5	8.5	34.0
Max Q Clear Time (g_c+I1), s	7.5	11.4	6.2	8.9	8.2	6.6	7.8	6.7
Green Ext Time (p_c), s	0.0	5.0	0.0	5.7	0.0	5.6	0.0	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	68.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	327	46	137	259	36	91	185	300	19	57	25
Future Vol, veh/h	41	327	46	137	259	36	91	185	300	19	57	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	355	50	149	282	39	99	201	326	21	62	27
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	17.7	16.1	154.1	14.9
HCM LOS	C	C	F	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	16%	100%	0%	0%	100%	0%	0%	19%
Vol Thru, %	32%	0%	100%	70%	0%	100%	71%	56%
Vol Right, %	52%	0%	0%	30%	0%	0%	29%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	576	41	218	155	137	173	122	101
LT Vol	91	41	0	0	137	0	0	19
Through Vol	185	0	218	109	0	173	86	57
RT Vol	300	0	0	46	0	0	36	25
Lane Flow Rate	626	45	237	168	149	188	133	110
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.257	0.102	0.509	0.356	0.34	0.407	0.28	0.257
Departure Headway (Hd)	7.228	9.173	8.646	8.426	9.148	8.621	8.403	9.051
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	507	393	419	430	396	420	431	400
Service Time	4.958	6.873	6.346	6.126	6.848	6.321	6.103	6.751
HCM Lane V/C Ratio	1.235	0.115	0.566	0.391	0.376	0.448	0.309	0.275
HCM Control Delay	154.1	12.9	20	15.7	16.5	17.1	14.3	14.9
HCM Lane LOS	F	B	C	C	C	C	B	B
HCM 95th-tile Q	25.2	0.3	2.8	1.6	1.5	1.9	1.1	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	310	15	132	89	8	16	710	204	10	393	65
Future Volume (veh/h)	198	310	15	132	89	8	16	710	204	10	393	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	208	326	16	139	94	8	17	747	215	11	414	68
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	606	30	301	582	50	43	1314	588	29	1287	576
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.02	0.37	0.37	0.02	0.36	0.36
Sat Flow, veh/h	1287	1761	86	1034	1693	144	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	208	0	342	139	0	102	17	747	215	11	414	68
Grp Sat Flow(s),veh/h/ln	1287	0	1847	1034	0	1837	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.7	0.0	10.8	9.1	0.0	2.8	0.7	12.2	7.2	0.4	6.1	2.1
Cycle Q Clear(g_c), s	12.5	0.0	10.8	19.9	0.0	2.8	0.7	12.2	7.2	0.4	6.1	2.1
Prop In Lane	1.00		0.05	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	492	0	635	301	0	632	43	1314	588	29	1287	576
V/C Ratio(X)	0.42	0.00	0.54	0.46	0.00	0.16	0.40	0.57	0.37	0.38	0.32	0.12
Avail Cap(c_a), veh/h	714	0	953	472	0	935	146	1607	719	269	1826	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	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	20.9	0.0	19.2	27.2	0.0	16.6	34.9	18.2	16.6	35.4	16.7	15.4
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.8	0.0	0.1	2.2	0.8	0.8	3.0	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	3.5	0.0	5.6	2.7	0.0	1.4	0.4	6.1	3.2	0.2	3.0	0.9
LnGrp Delay(d),s/veh	21.3	0.0	19.7	28.0	0.0	16.6	37.2	19.0	17.4	38.3	17.0	15.6
LnGrp LOS	C		B	C		B	D	B	B	D	B	B
Approach Vol, veh/h		550			241			979			493	
Approach Delay, s/veh		20.3			23.2			19.0			17.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.2	34.5		31.0	7.7	33.9		31.0
Change Period (Y+Rc), s	6.0	* 7.5		* 6	6.0	7.5		6.0
Max Green Setting (Gmax), s	11.6	* 33		* 38	6.0	37.5		37.0
Max Q Clear Time (g_c+I1), s	2.4	14.2		14.5	2.7	8.1		21.9
Green Ext Time (p_c), s	0.0	12.8		3.5	0.0	17.3		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	1011	220	153	707	149	381	725	410	235	278	52
Future Volume (veh/h)	62	1011	220	153	707	149	381	725	410	235	278	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	65	1064	232	161	744	157	401	763	432	247	293	55
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	1229	550	552	1331	281	777	896	401	290	377	169
Arrive On Green	0.06	0.35	0.35	0.16	0.46	0.46	0.23	0.25	0.25	0.08	0.11	0.11
Sat Flow, veh/h	3442	3539	1583	3442	2910	614	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	65	1064	232	161	452	449	401	763	432	247	293	55
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1754	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	3.0	46.3	18.5	6.8	30.7	30.8	16.8	33.9	28.3	11.7	13.3	4.5
Cycle Q Clear(g_c), s	3.0	46.3	18.5	6.8	30.7	30.8	16.8	33.9	28.3	11.7	13.3	4.5
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	1229	550	552	809	802	777	896	401	290	377	169
V/C Ratio(X)	0.33	0.87	0.42	0.29	0.56	0.56	0.52	0.85	1.08	0.85	0.78	0.33
Avail Cap(c_a), veh/h	209	1229	550	552	809	802	777	1158	518	394	1201	537
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)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	74.7	50.3	41.2	61.0	32.6	32.6	56.0	58.7	28.3	74.6	71.8	49.8
Incr Delay (d2), s/veh	0.6	7.3	2.1	0.1	2.8	2.8	0.3	5.3	61.7	9.3	3.9	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	1.4	23.9	8.4	3.3	15.7	15.6	8.0	17.2	19.2	5.9	6.7	2.0
LnGrp Delay(d),s/veh	75.3	57.6	43.2	61.1	35.4	35.4	56.3	64.0	90.1	83.8	75.7	51.0
LnGrp LOS	E	E	D	E	D	D	E	E	F	F	E	D
Approach Vol, veh/h		1361			1062			1596			595	
Approach Delay, s/veh		56.0			39.3			69.1			76.8	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	48.7	32.8	63.6	44.1	24.5	14.6	81.8
Change Period (Y+Rc), s	6.1	6.9	6.3	* 6.3	6.9	* 6.9	5.1	6.3
Max Green Setting (Gmax), s	13.9	54.0	10.4	* 57	16.7	* 56	10.0	57.7
Max Q Clear Time (g_c+I1), s	12.7	35.9	8.8	48.3	18.8	15.3	5.0	32.8
Green Ext Time (p_c), s	0.2	5.9	0.2	6.7	0.0	2.3	0.0	10.5

Intersection Summary	
HCM 2010 Ctrl Delay	59.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	465	1052	13	34	788	234	7	3	14	122	0	196
Future Volume (veh/h)	465	1052	13	34	788	234	7	3	14	122	0	196
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	500	1131	14	37	847	252	8	3	15	131	0	211
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	694	2390	30	66	1094	489	106	44	221	280	0	259
Arrive On Green	0.39	0.67	0.67	0.04	0.31	0.31	0.16	0.16	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1774	3580	44	1774	3539	1583	1166	271	1353	1389	0	1583
Grp Volume(v), veh/h	500	559	586	37	847	252	8	0	18	131	0	211
Grp Sat Flow(s),veh/h/ln	1774	1770	1855	1774	1770	1583	1166	0	1624	1389	0	1583
Q Serve(g_s), s	26.3	16.9	16.9	2.3	23.9	14.4	0.7	0.0	1.0	9.7	0.0	14.1
Cycle Q Clear(g_c), s	26.3	16.9	16.9	2.3	23.9	14.4	14.9	0.0	1.0	10.7	0.0	14.1
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	694	1182	1239	66	1094	489	106	0	266	280	0	259
V/C Ratio(X)	0.72	0.47	0.47	0.56	0.77	0.51	0.08	0.00	0.07	0.47	0.00	0.81
Avail Cap(c_a), veh/h	694	1182	1239	105	1094	489	175	0	362	355	0	345
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	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	8.9	8.9	52.1	34.5	31.2	51.6	0.0	38.9	43.4	0.0	44.4
Incr Delay (d2), s/veh	3.5	1.4	1.3	4.5	4.4	3.1	0.3	0.0	0.1	1.2	0.0	10.5
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	13.4	8.7	9.1	1.2	12.3	6.7	0.2	0.0	0.5	3.8	0.0	7.0
LnGrp Delay(d),s/veh	31.9	10.2	10.2	56.6	38.9	34.3	51.9	0.0	39.0	44.7	0.0	54.9
LnGrp LOS	C	B	B	E	D	C	D		D	D		D
Approach Vol, veh/h		1645			1136			26			342	
Approach Delay, s/veh		16.8			38.5			43.0			51.0	
Approach LOS		B			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	78.4		23.0	48.0	39.0		23.0
Change Period (Y+Rc), s	4.5	5.0		5.0	5.0	* 5		* 5
Max Green Setting (Gmax), s	6.5	65.0		24.0	37.5	* 34		* 25
Max Q Clear Time (g_c+I1), s	4.3	18.9		16.1	28.3	25.9		16.9
Green Ext Time (p_c), s	0.0	10.3		1.1	5.3	3.8		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	861	47	182	865	240	59	263	274	234	129	48
Future Volume (veh/h)	87	861	47	182	865	240	59	263	274	234	129	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	90	888	0	188	892	247	61	271	282	241	133	49
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1273	569	217	1146	317	78	390	331	258	578	492
Arrive On Green	0.06	0.36	0.00	0.12	0.42	0.42	0.04	0.21	0.21	0.15	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	2741	758	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	90	888	0	188	576	563	61	271	282	241	133	49
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1729	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.5	23.6	0.0	11.4	30.9	31.0	3.7	14.8	18.8	14.8	5.8	2.4
Cycle Q Clear(g_c), s	5.5	23.6	0.0	11.4	30.9	31.0	3.7	14.8	18.8	14.8	5.8	2.4
Prop In Lane	1.00		1.00	1.00		0.44	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	1273	569	217	740	723	78	390	331	258	578	492
V/C Ratio(X)	0.80	0.70	0.00	0.87	0.78	0.78	0.78	0.70	0.85	0.93	0.23	0.10
Avail Cap(c_a), veh/h	113	1273	569	226	740	723	110	525	446	258	681	579
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	30.1	0.0	47.4	27.6	27.6	52.0	40.2	41.8	46.5	28.2	27.0
Incr Delay (d2), s/veh	30.9	3.2	0.0	27.1	7.9	8.1	17.5	1.9	10.3	38.5	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	3.7	12.0	0.0	7.2	16.7	16.3	2.2	7.8	9.2	10.0	3.0	1.1
LnGrp Delay(d),s/veh	81.7	33.3	0.0	74.5	35.5	35.8	69.5	42.2	52.1	85.0	28.3	27.0
LnGrp LOS	F	C		E	D	D	E	D	D	F	C	C
Approach Vol, veh/h		978			1327			614			423	
Approach Delay, s/veh		37.8			41.1			49.5			60.5	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	44.6	8.9	39.2	11.0	51.0	20.0	28.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	14.0	31.0	6.8	40.2	7.0	38.0	16.0	31.0
Max Q Clear Time (g_c+I1), s	13.4	25.6	5.7	7.8	7.5	33.0	16.8	20.8
Green Ext Time (p_c), s	0.0	4.1	0.0	2.9	0.0	3.9	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	44.1
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	135	17	39	43	15	7	0	17	7	0	3
Future Vol, veh/h	6	135	17	39	43	15	7	0	17	7	0	3
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	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	142	18	41	45	16	7	0	18	7	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	61	0	0	160	0	0	300	306	151	307	307	53
Stage 1	-	-	-	-	-	-	163	163	-	135	135	-
Stage 2	-	-	-	-	-	-	137	143	-	172	172	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1542	-	-	1419	-	-	652	608	895	645	607	1014
Stage 1	-	-	-	-	-	-	839	763	-	868	785	-
Stage 2	-	-	-	-	-	-	866	779	-	830	756	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1542	-	-	1419	-	-	634	588	895	617	587	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	634	588	-	617	587	-
Stage 1	-	-	-	-	-	-	836	760	-	865	762	-
Stage 2	-	-	-	-	-	-	838	756	-	810	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	3.1	9.7	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	799	1542	-	-	1419	-	-	699
HCM Lane V/C Ratio	0.032	0.004	-	-	0.029	-	-	0.015
HCM Control Delay (s)	9.7	7.3	-	-	7.6	-	-	10.2
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

APPENDIX G

Signal Warrant Analysis Worksheets

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Existing	**Total Number of Vehicles Entering:**	1465
	AM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	0.4

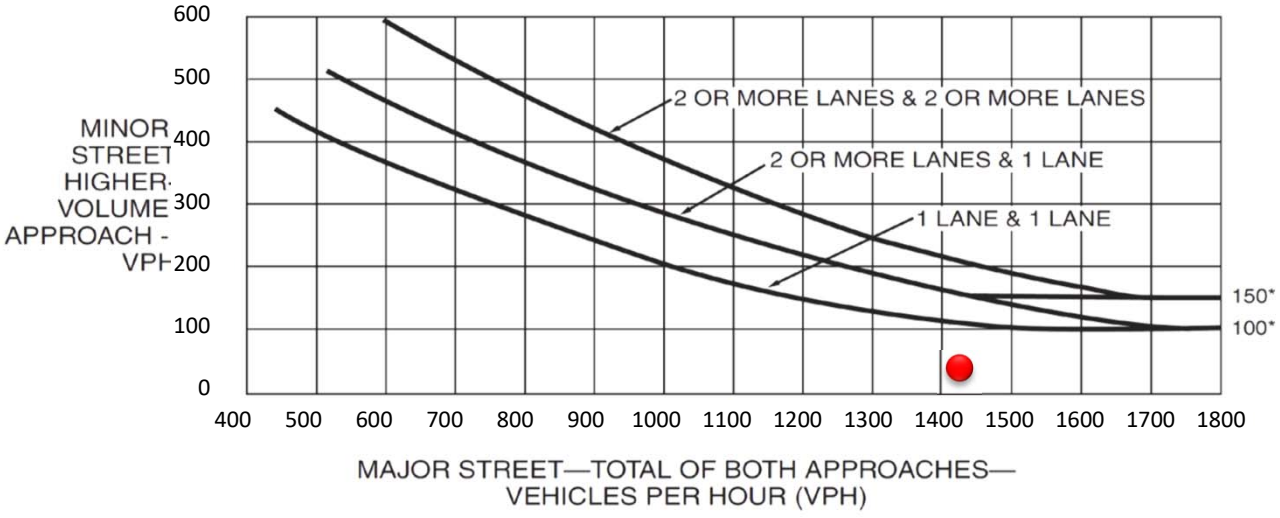
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	NO
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1430	32

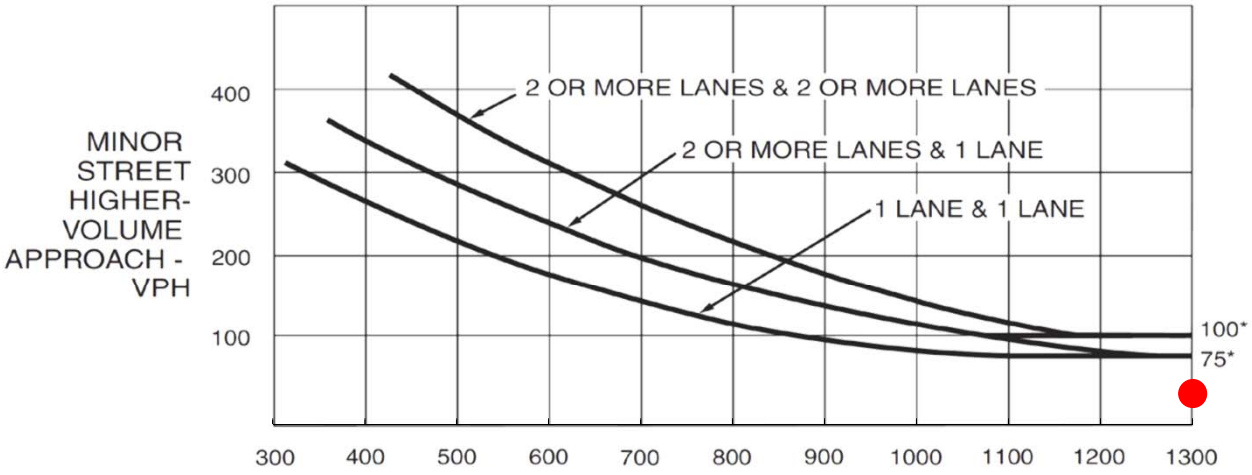
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	NO

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Existing	**Total Number of Vehicles Entering:**	878
	PM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	1.0

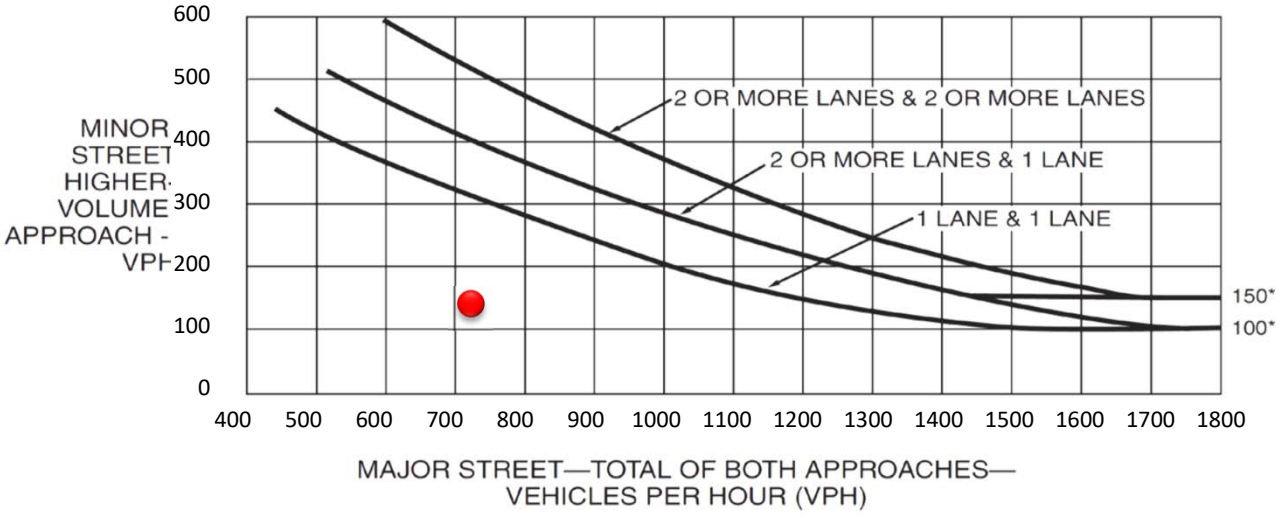
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
738	135

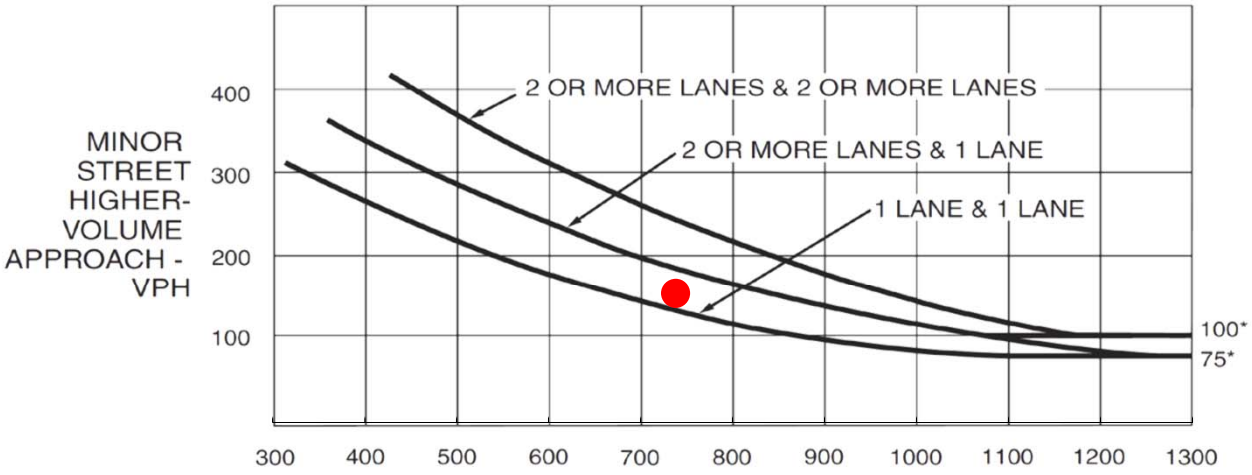
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Existing Plus Project	**Total Number of Vehicles Entering:**	1526
	AM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	1.2

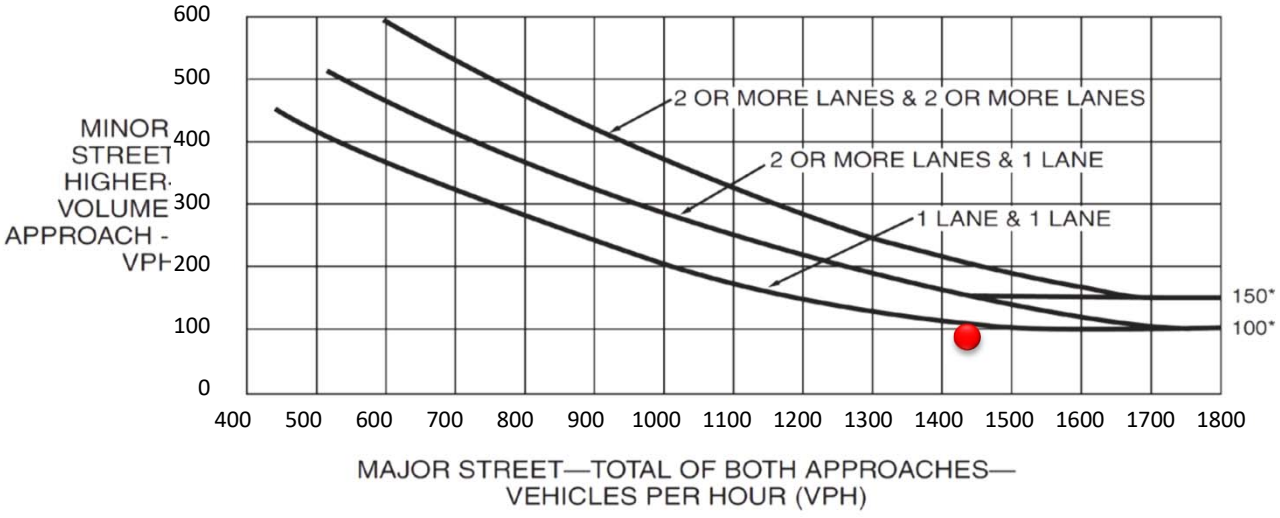
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1442	82

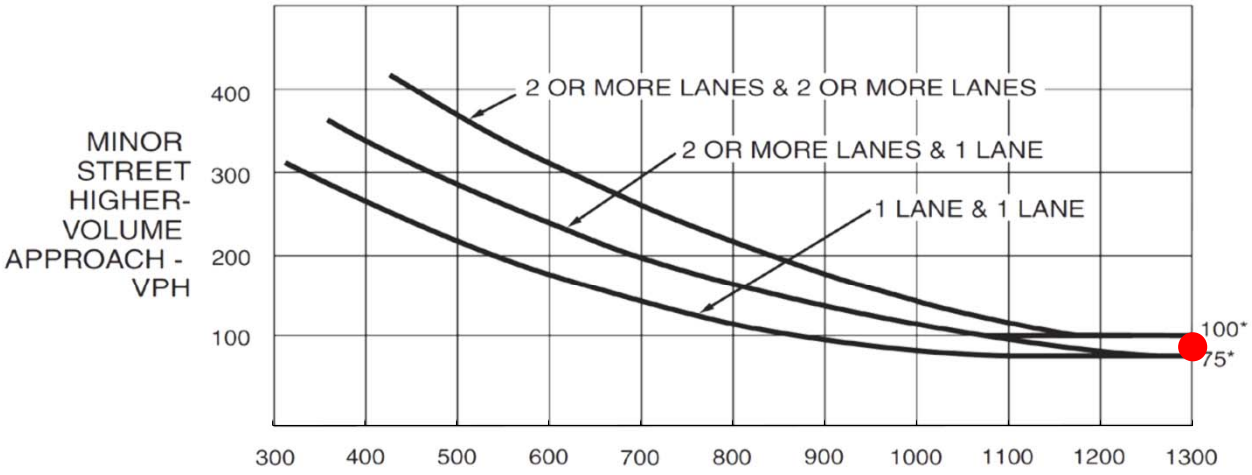
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Existing Plus Project	**Total Number of Vehicles Entering:**	950
	PM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	1.5

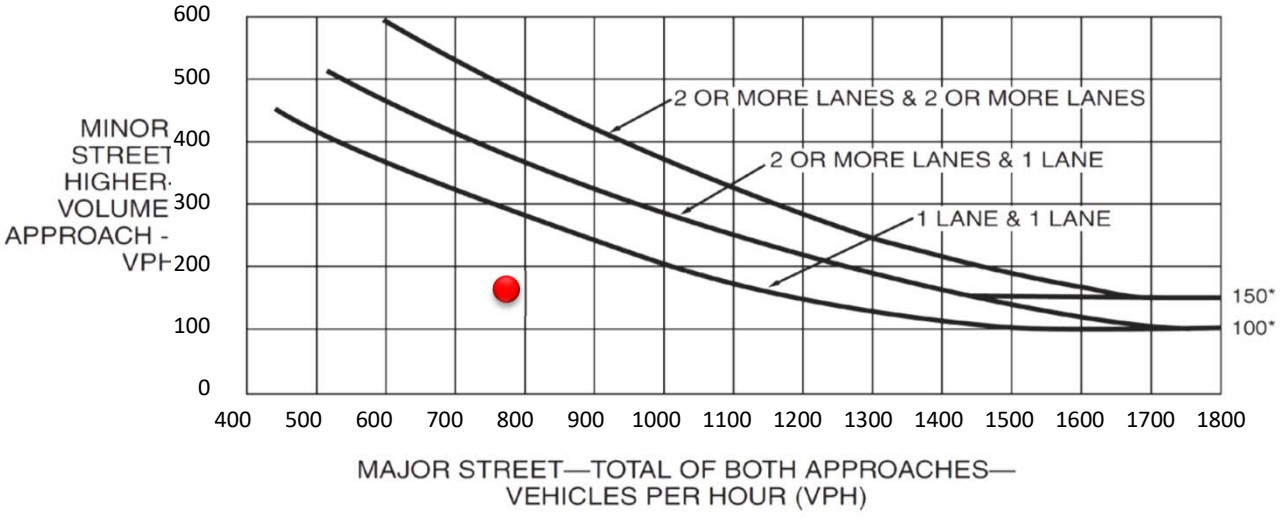
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
788	158

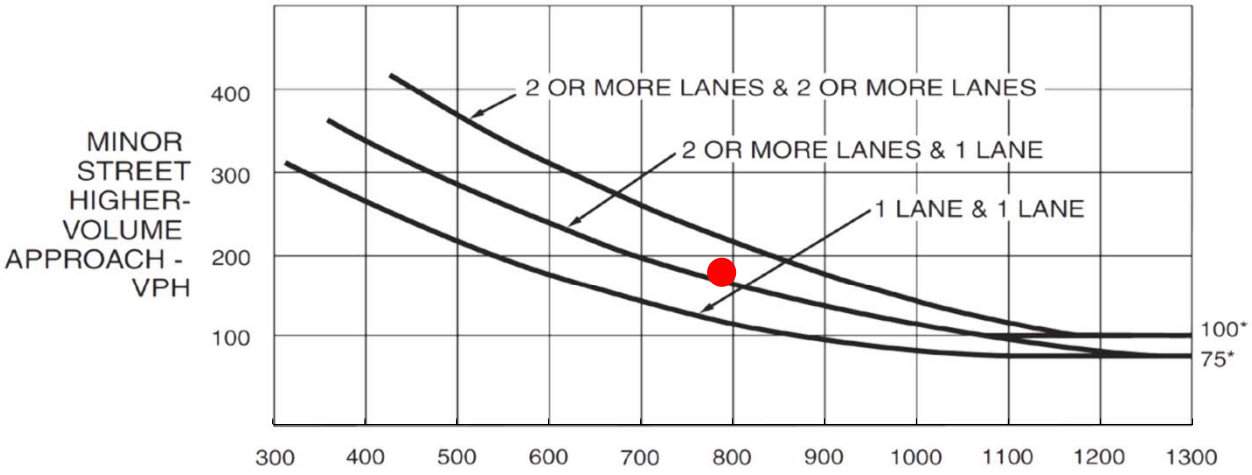
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Cumulative No Project	**Total Number of Vehicles Entering:**	1494
	AM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	0.4

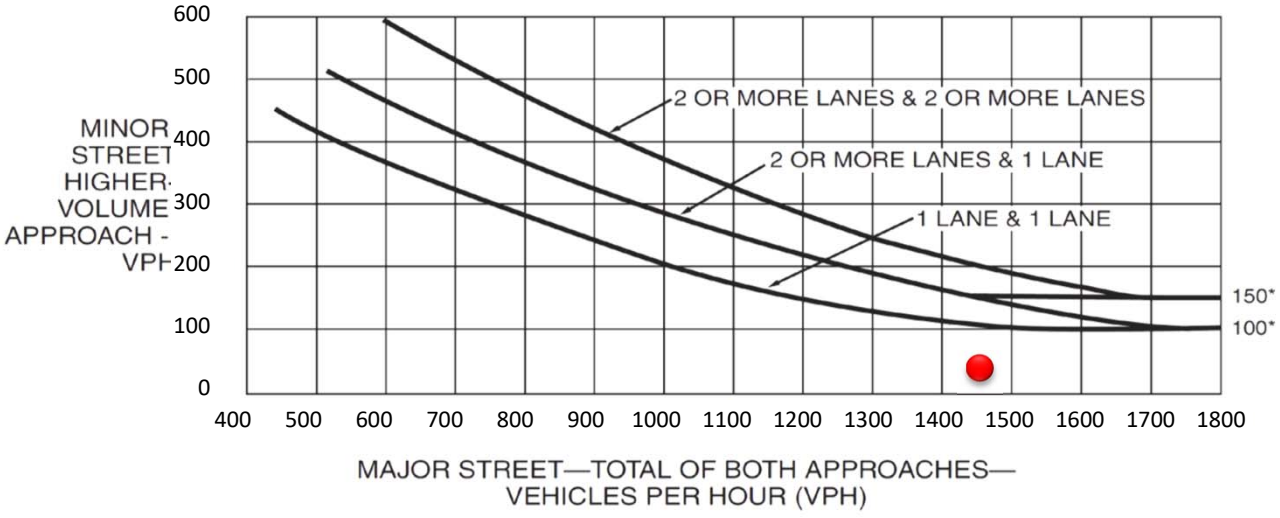
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	NO
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1459	32

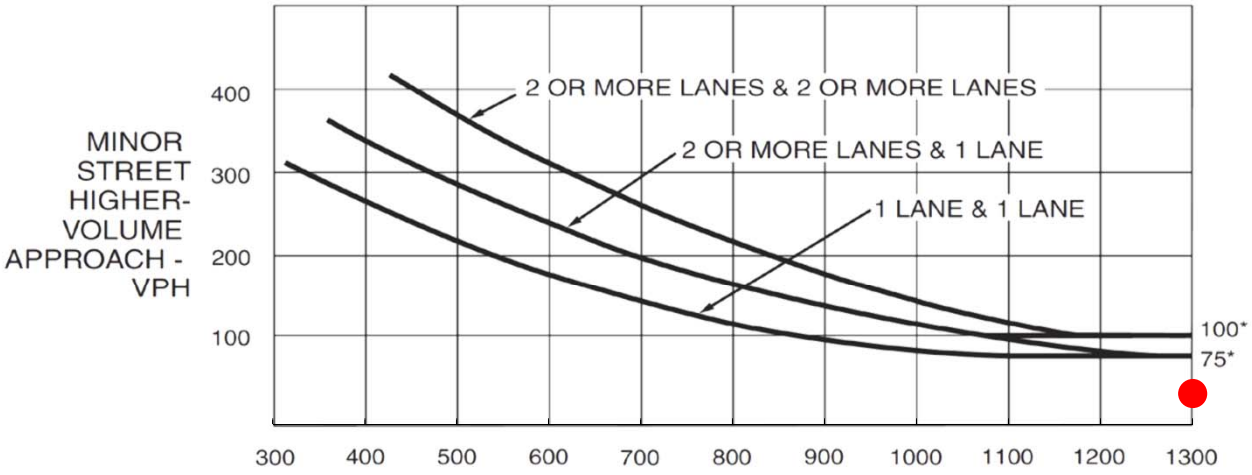
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	NO

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Cumulative No Project	**Total Number of Vehicles Entering:**	890
	PM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	1.0

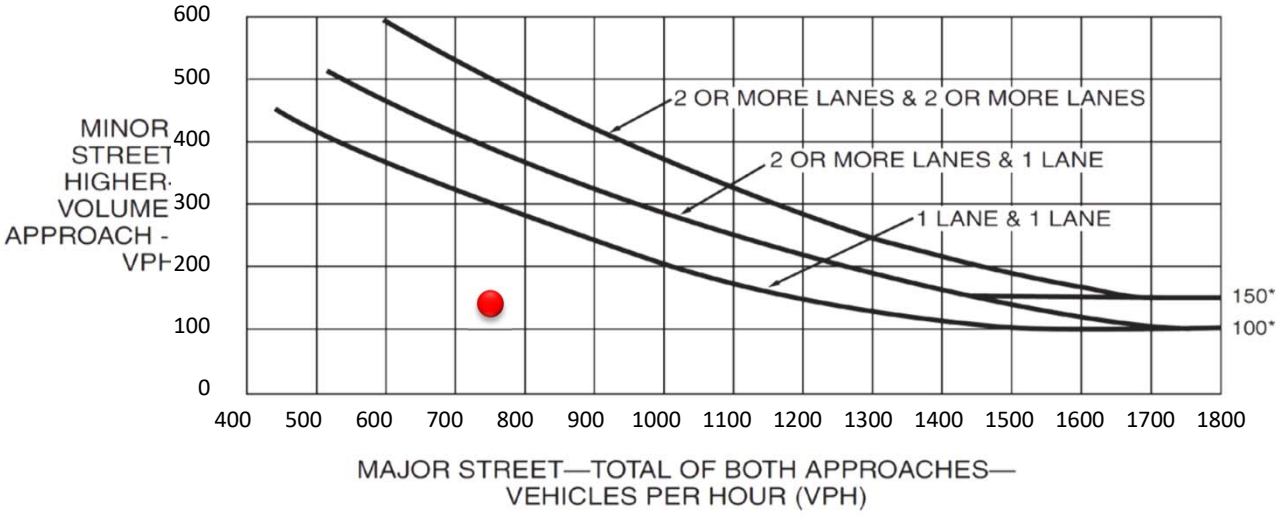
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
765	135

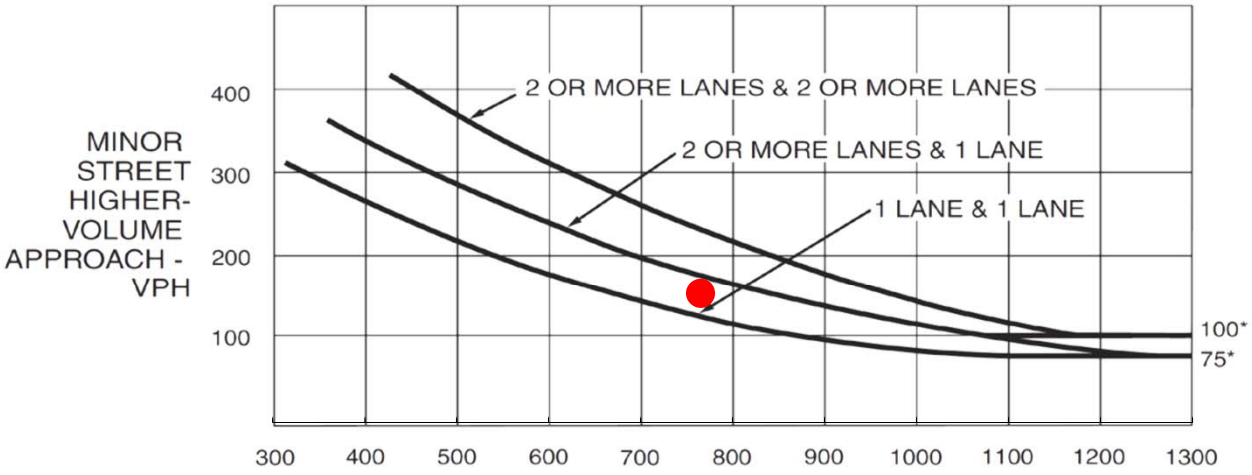
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Cumulative With Project AM Peak	**Total Number of Vehicles Entering:**	1555
		Number of Approaches:	4
		Minor St approach total delay (veh-hr):	1.3

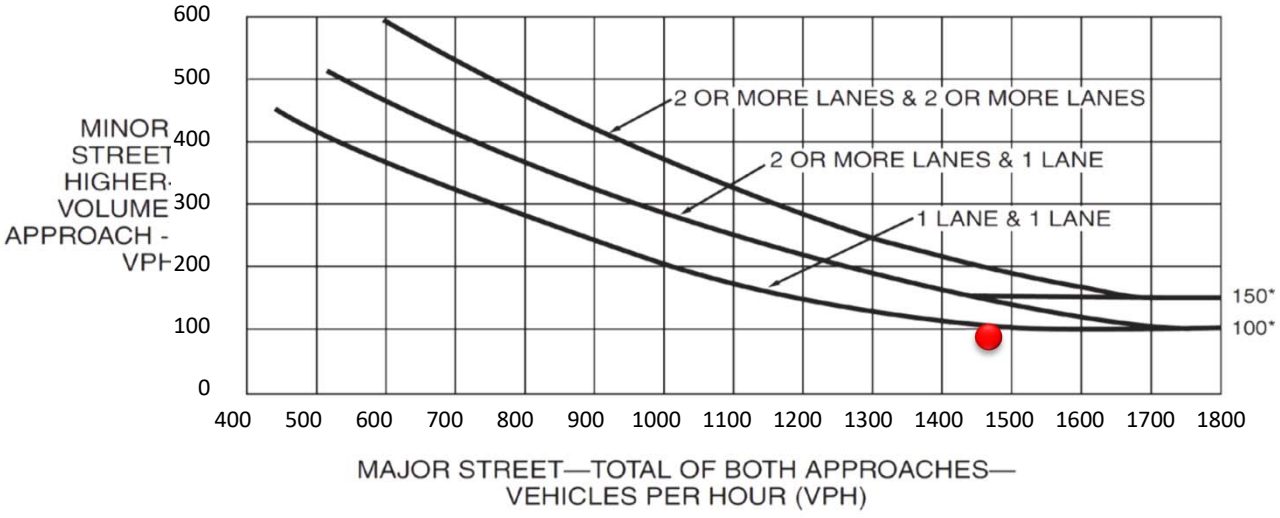
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1471	82

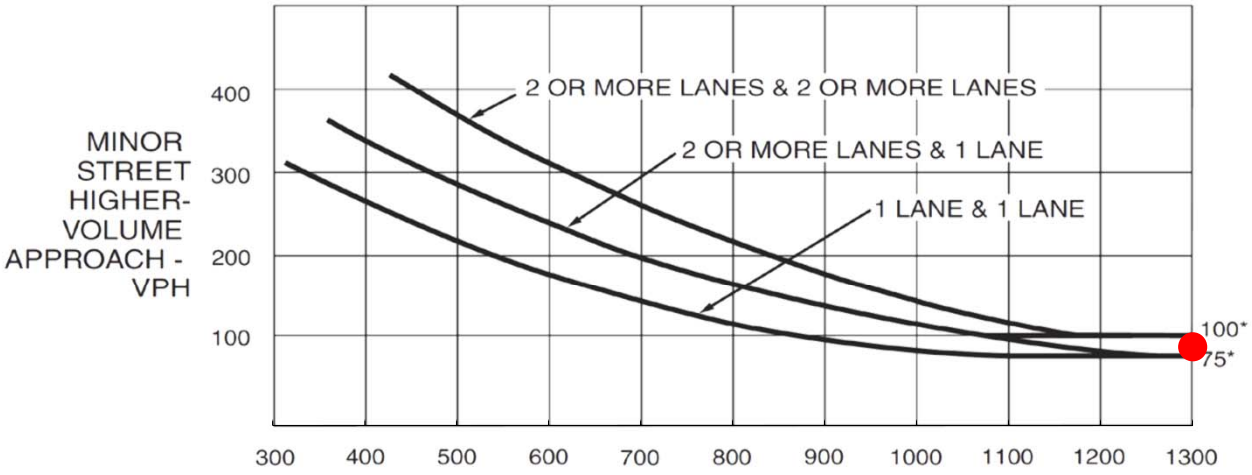
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	N. Centre City Parkway	**Number of Lanes on major street:**	1
Scenario:	Cumulative With Project PM Peak	**Total Number of Vehicles Entering:**	977
		Number of Approaches:	4
		Minor St approach total delay (veh-hr):	1.6

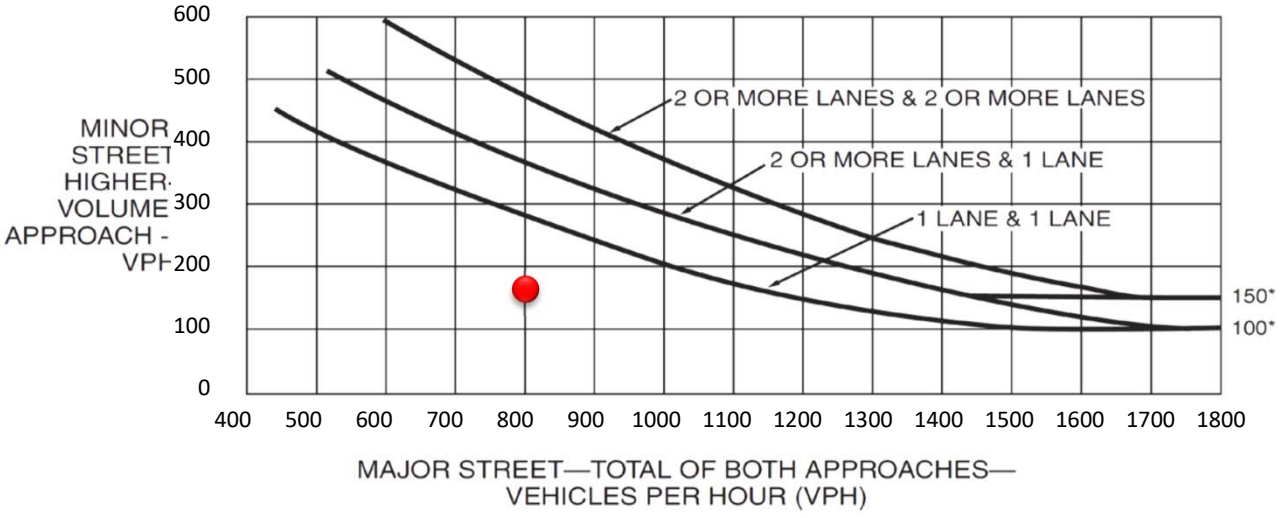
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
815	158

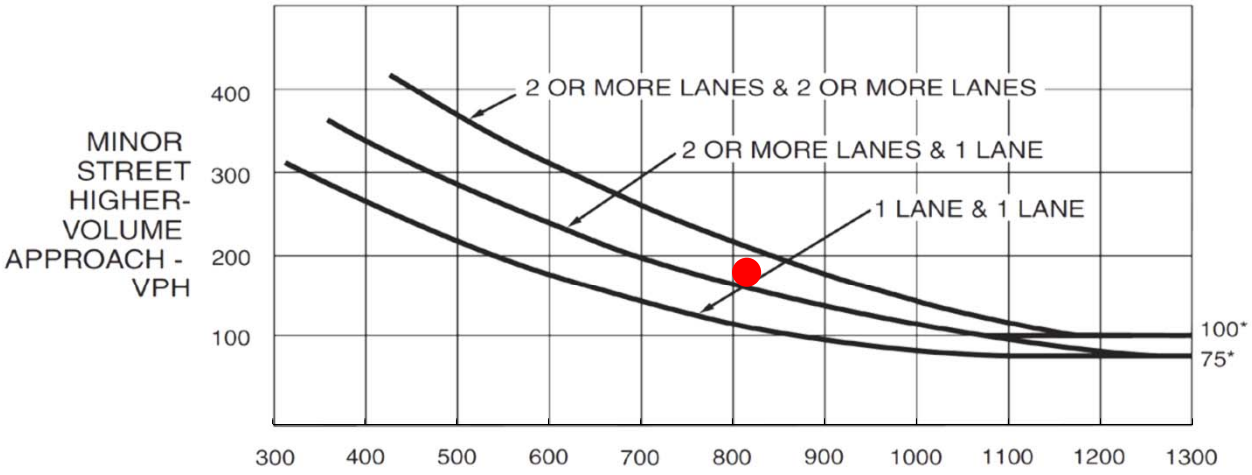
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Existing	**Total Number of Vehicles Entering:**	1689
	AM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	3.0

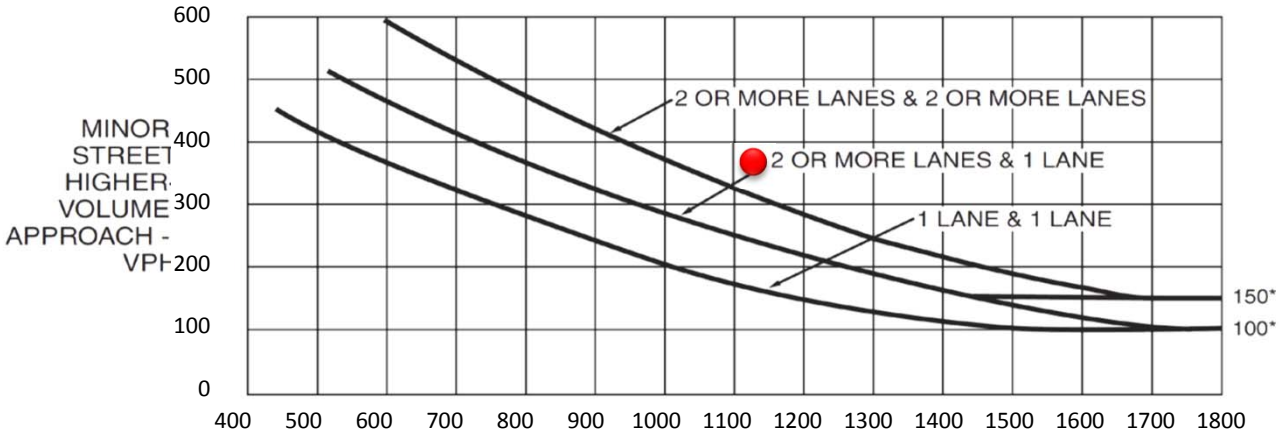
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1138	363

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Existing	**Total Number of Vehicles Entering:**	1300
	PM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	5.6

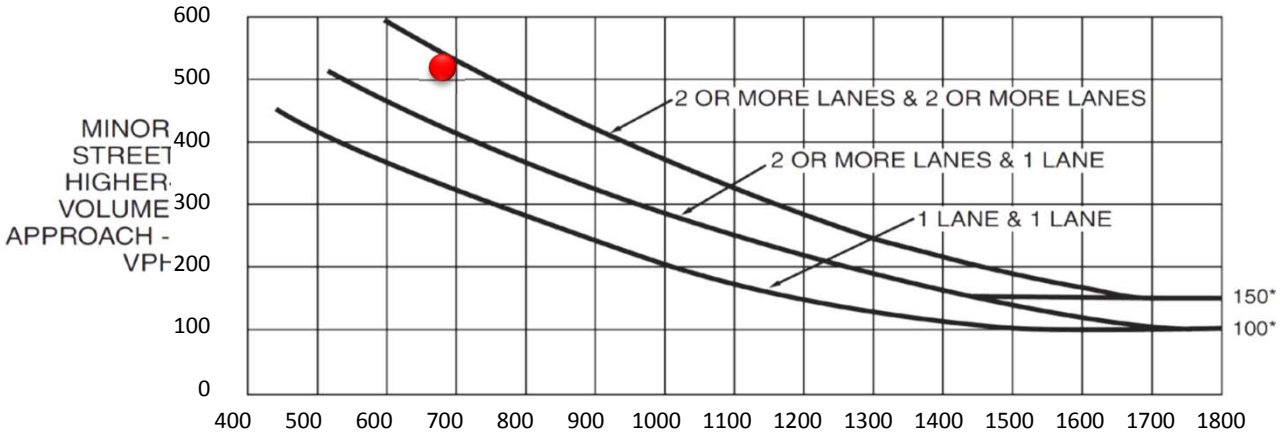
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	YES
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
697	515

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	YES
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Existing Plus Project	**Total Number of Vehicles Entering:**	1717
	AM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	3.7

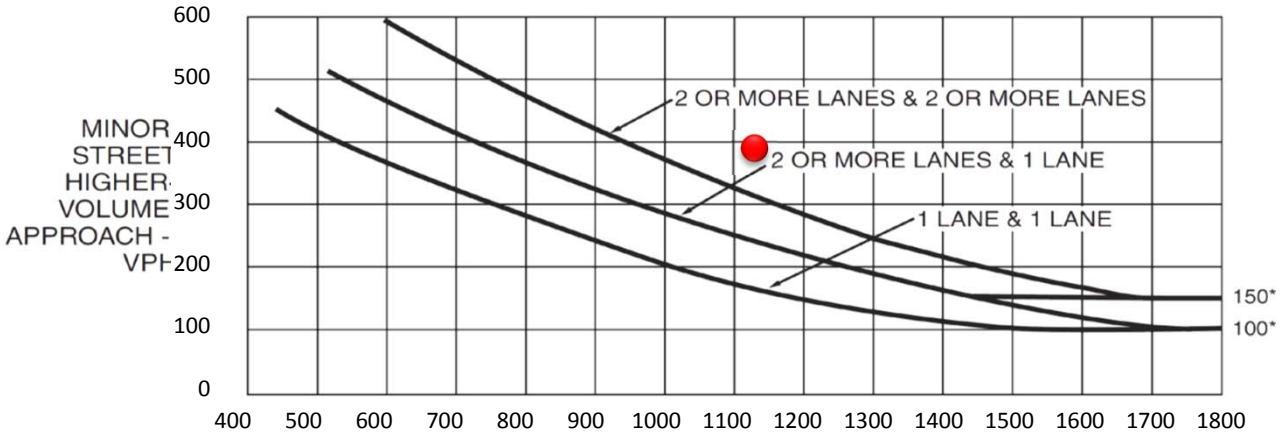
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	NO
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1139	385

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	NO
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Existing Plus Project	**Total Number of Vehicles Entering:**	1333
	PM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	6.4

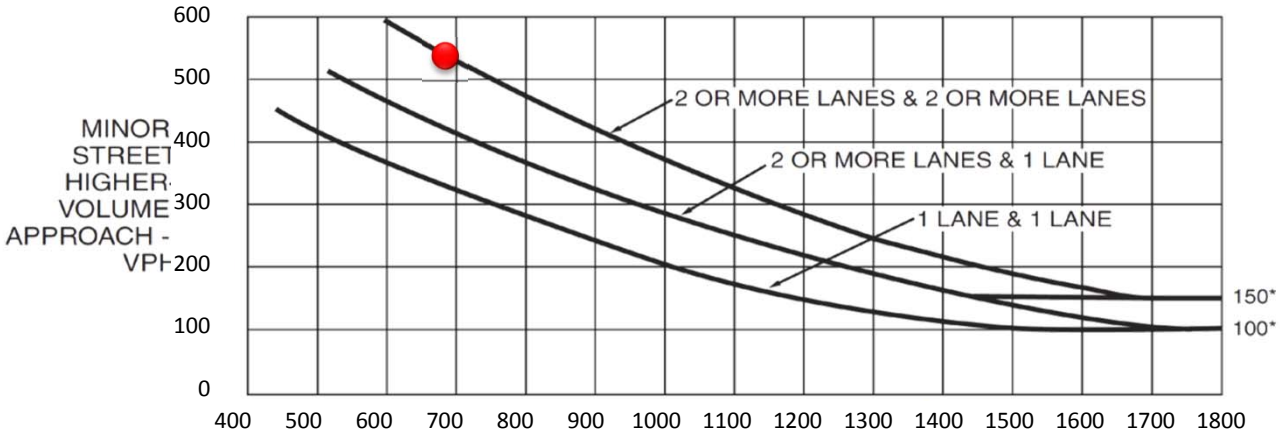
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	YES
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
701	534

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	YES
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Cumulative No Project	**Total Number of Vehicles Entering:**	1844
	AM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	4.2

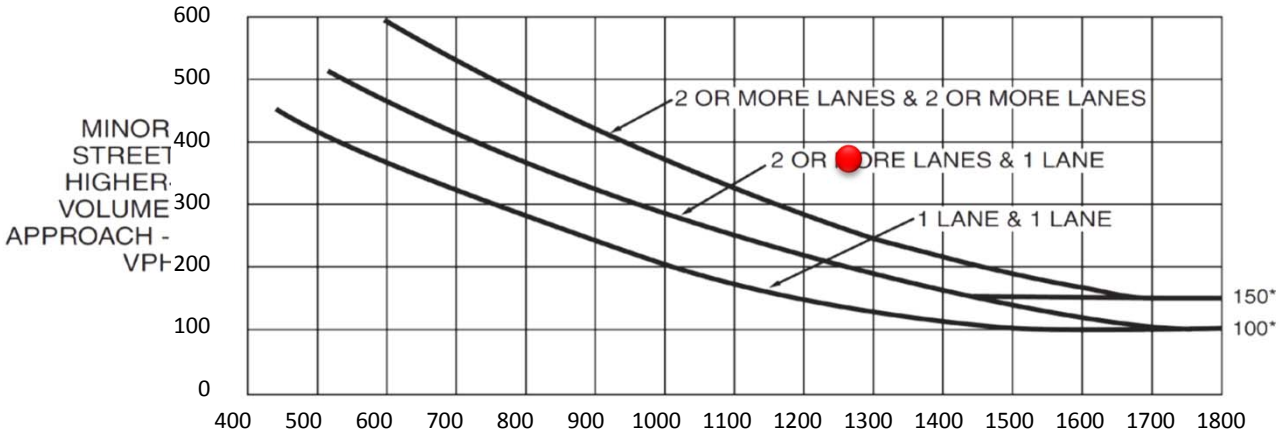
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	YES
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1273	369

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	YES
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Cumulative No Project	**Total Number of Vehicles Entering:**	1490
	PM Peak	**Number of Approaches:**	4
		Minor St approach total delay (veh-hr):	9.2

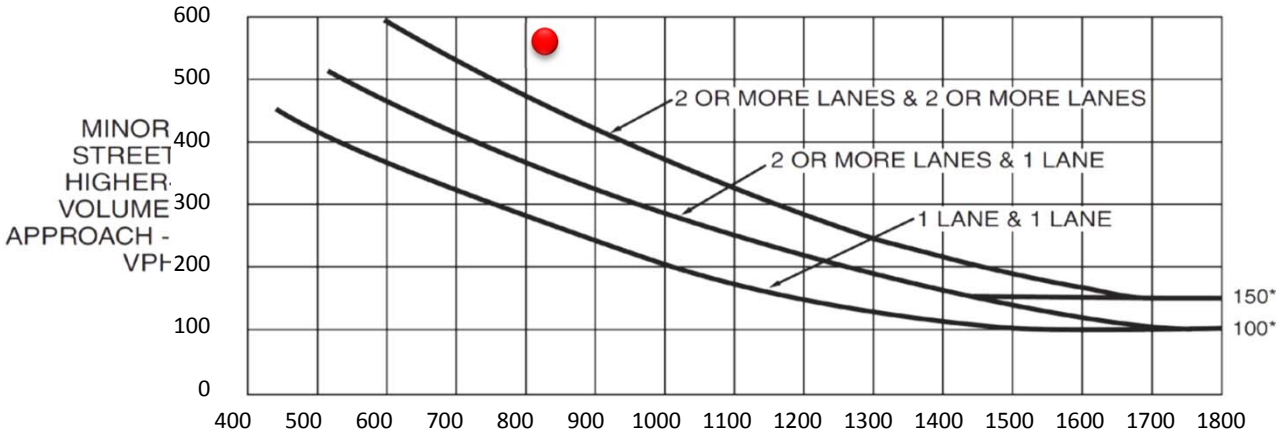
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	YES
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
842	557

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	YES
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Cumulative With Project AM Peak	**Total Number of Vehicles Entering:**	1872
		Number of Approaches:	4
		Minor St approach total delay (veh-hr):	4.9

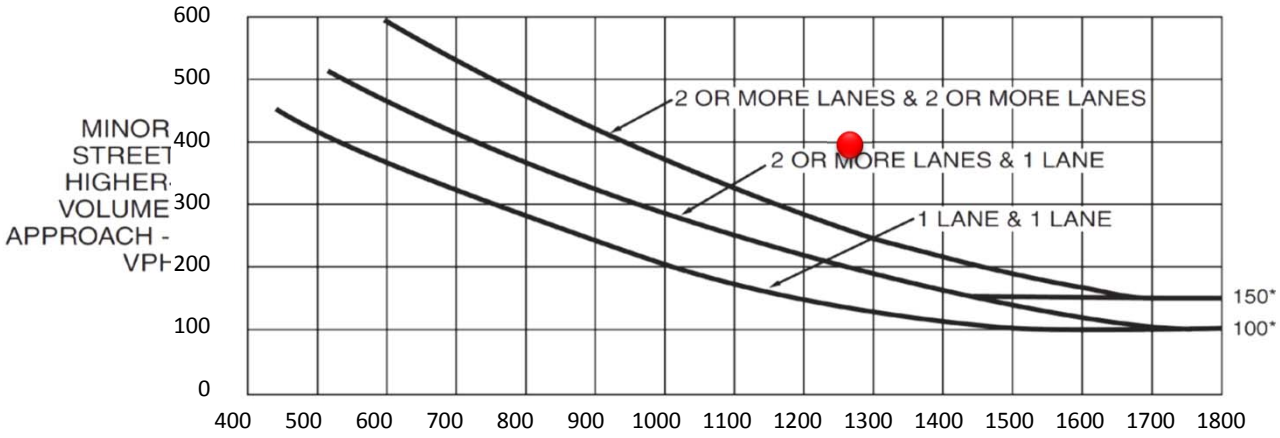
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	YES
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
1274	391

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	YES
PART B	YES

SIGNAL WARRANT ANALYSIS

Minor Street:	N. Nutmeg Street	**Number of Lanes on minor street:**	1
Major Street	W. Country Club Lane	**Number of Lanes on major street:**	2
Scenario:	Cumulative With Project PM Peak	**Total Number of Vehicles Entering:**	1523
		Number of Approaches:	4
		Minor St approach total delay (veh-hr):	11.0

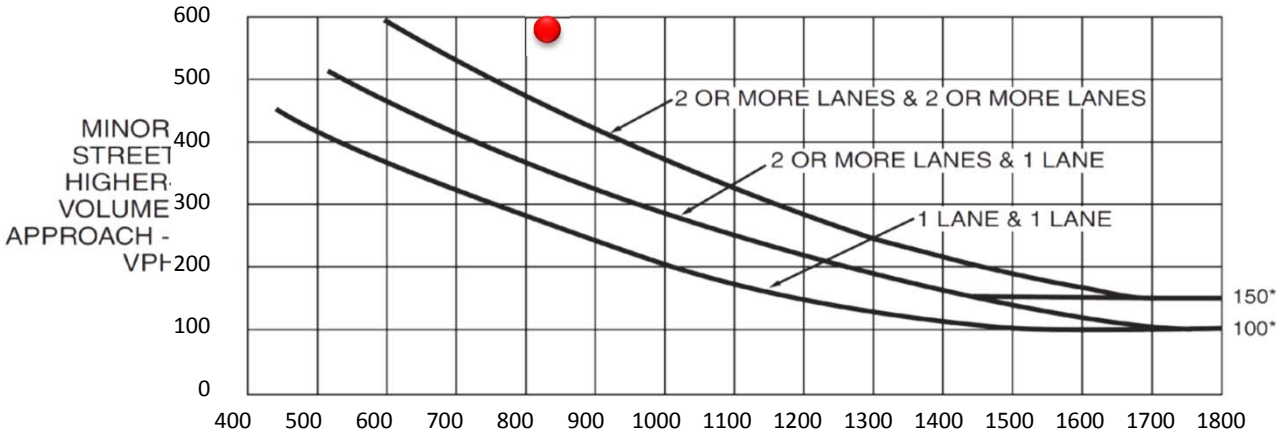
Part A

		Criteria Met?
1	Minor St approach total stopped time delay	YES
2	Volume on the same minor street approach (one directional only)	YES
3	Total volume entering the intersection during the peak hour	YES

Part B

Volume on Major St (Σ of both Approaches)	Volumes on Minor St (higher approach)
846	576

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

	Does the Intersection Meet Peak Hour Signal Warrants?:
PART A	YES
PART B	YES

APPENDIX H

Mitigated Conditions LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1	55	2	0	0	16	132	7	2	954	332
Future Volume (veh/h)	31	1	55	2	0	0	16	132	7	2	954	332
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	34	1	61	2	0	0	18	147	8	2	1060	369
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1	91	6	0	0	37	207	11	906	1195	1016
Arrive On Green	0.06	0.06	0.06	0.00	0.00	0.00	0.02	0.12	0.12	0.51	0.64	0.64
Sat Flow, veh/h	1774	26	1562	1774	0	0	1774	1751	95	1774	1863	1583
Grp Volume(v), veh/h	34	0	62	2	0	0	18	0	155	2	1060	369
Grp Sat Flow(s),veh/h/ln	1774	0	1587	1774	0	0	1774	0	1846	1774	1863	1583
Q Serve(g_s), s	1.4	0.0	2.8	0.1	0.0	0.0	0.7	0.0	6.0	0.0	35.1	8.1
Cycle Q Clear(g_c), s	1.4	0.0	2.8	0.1	0.0	0.0	0.7	0.0	6.0	0.0	35.1	8.1
Prop In Lane	1.00		0.98	1.00		0.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	103	0	92	6	0	0	37	0	218	906	1195	1016
V/C Ratio(X)	0.33	0.00	0.67	0.35	0.00	0.00	0.49	0.00	0.71	0.00	0.89	0.36
Avail Cap(c_a), veh/h	120	0	107	574	0	0	120	0	1629	906	1644	1398
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	34.3	36.9	0.0	0.0	35.9	0.0	31.5	8.9	11.1	6.2
Incr Delay (d2), s/veh	1.8	0.0	12.6	31.9	0.0	0.0	9.5	0.0	4.2	0.0	4.8	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	0.7	0.0	1.6	0.1	0.0	0.0	0.5	0.0	3.3	0.0	19.3	3.5
LnGrp Delay(d),s/veh	35.4	0.0	46.9	68.8	0.0	0.0	45.5	0.0	35.7	8.9	15.9	6.4
LnGrp LOS	D		D	E			D		D	A	B	A
Approach Vol, veh/h		96			2			173			1431	
Approach Delay, s/veh		42.8			68.8			36.8			13.4	
Approach LOS		D			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.9	15.8		8.8	6.0	54.6		4.7
Change Period (Y+Rc), s	7.0	* 7		4.5	4.5	7.0		4.5
Max Green Setting (Gmax), s	5.0	* 66		5.0	5.0	65.5		24.0
Max Q Clear Time (g_c+I1), s	2.0	8.0		4.8	2.7	37.1		2.1
Green Ext Time (p_c), s	2.1	0.8		0.0	0.0	10.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	181	51	326	548	19	9	36	145	59	182	146
Future Volume (veh/h)	17	181	51	326	548	19	9	36	145	59	182	146
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	18	191	54	343	577	20	9	38	153	62	192	154
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	421	116	383	1215	42	12	50	201	84	261	297
Arrive On Green	0.02	0.15	0.15	0.22	0.35	0.35	0.16	0.16	0.16	0.19	0.19	0.19
Sat Flow, veh/h	1774	2743	756	1774	3490	121	74	311	1253	449	1391	1583
Grp Volume(v), veh/h	18	121	124	343	292	305	200	0	0	254	0	154
Grp Sat Flow(s),veh/h/ln	1774	1770	1729	1774	1770	1841	1638	0	0	1840	0	1583
Q Serve(g_s), s	0.7	4.2	4.4	12.6	8.7	8.7	7.8	0.0	0.0	8.7	0.0	5.9
Cycle Q Clear(g_c), s	0.7	4.2	4.4	12.6	8.7	8.7	7.8	0.0	0.0	8.7	0.0	5.9
Prop In Lane	1.00		0.44	1.00		0.07	0.04		0.76	0.24		1.00
Lane Grp Cap(c), veh/h	38	272	265	383	616	641	262	0	0	345	0	297
V/C Ratio(X)	0.48	0.45	0.47	0.90	0.47	0.48	0.76	0.00	0.00	0.74	0.00	0.52
Avail Cap(c_a), veh/h	143	474	463	383	714	743	719	0	0	794	0	684
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.5	25.8	25.9	25.6	17.1	17.1	27.0	0.0	0.0	25.7	0.0	24.6
Incr Delay (d2), s/veh	9.1	1.2	1.3	22.7	0.6	0.5	4.6	0.0	0.0	3.1	0.0	1.4
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	0.4	2.1	2.2	8.6	4.3	4.5	3.9	0.0	0.0	4.7	0.0	2.7
LnGrp Delay(d),s/veh	41.6	27.0	27.2	48.3	17.7	17.7	31.5	0.0	0.0	28.8	0.0	25.9
LnGrp LOS	D	C	C	D	B	B	C			C		C
Approach Vol, veh/h		263			940			200			408	
Approach Delay, s/veh		28.1			28.9			31.5			27.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		15.3	19.0	15.8		17.1	5.9	28.9
Change Period (Y+Rc), s		4.5	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s		29.5	14.5	18.0		29.0	5.4	27.1
Max Q Clear Time (g_c+I1), s		9.8	14.6	6.4		10.7	2.7	10.7
Green Ext Time (p_c), s		1.2	0.0	3.9		1.9	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	3	21	2	1	1	54	509	4	1	182	38
Future Volume (veh/h)	134	3	21	2	1	1	54	509	4	1	182	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	149	3	23	2	1	1	60	566	4	1	202	42
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	21	164	6	3	3	103	700	5	4	701	596
Arrive On Green	0.11	0.11	0.11	0.01	0.01	0.01	0.06	0.38	0.38	0.00	0.38	0.38
Sat Flow, veh/h	1774	186	1425	871	436	436	1774	1847	13	1774	1863	1583
Grp Volume(v), veh/h	149	0	26	4	0	0	60	0	570	1	202	42
Grp Sat Flow(s),veh/h/ln	1774	0	1611	1742	0	0	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	3.7	0.0	0.7	0.1	0.0	0.0	1.5	0.0	12.7	0.0	3.5	0.8
Cycle Q Clear(g_c), s	3.7	0.0	0.7	0.1	0.0	0.0	1.5	0.0	12.7	0.0	3.5	0.8
Prop In Lane	1.00		0.88	0.50		0.25	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	204	0	185	11	0	0	103	0	705	4	701	596
V/C Ratio(X)	0.73	0.00	0.14	0.35	0.00	0.00	0.58	0.00	0.81	0.26	0.29	0.07
Avail Cap(c_a), veh/h	365	0	332	906	0	0	331	0	1250	192	1106	940
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	18.4	22.8	0.0	0.0	21.2	0.0	12.8	23.0	10.1	9.2
Incr Delay (d2), s/veh	5.0	0.0	0.3	17.7	0.0	0.0	5.1	0.0	2.3	32.4	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.3	0.1	0.0	0.0	0.9	0.0	6.8	0.0	1.8	0.3
LnGrp Delay(d),s/veh	24.8	0.0	18.7	40.5	0.0	0.0	26.3	0.0	15.1	55.4	10.3	9.3
LnGrp LOS	C		B	D			C		B	E	B	A
Approach Vol, veh/h		175			4			630			245	
Approach Delay, s/veh		23.9			40.5			16.2			10.3	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	24.5		9.8	7.2	24.4		4.8
Change Period (Y+Rc), s	7.0	* 7		4.5	4.5	7.0		4.5
Max Green Setting (Gmax), s	5.0	* 31		9.5	8.6	27.4		24.0
Max Q Clear Time (g_c+I1), s	2.0	14.7		5.7	3.5	5.5		2.1
Green Ext Time (p_c), s	0.3	2.8		0.2	0.0	1.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	281	30	137	181	33	54	180	300	18	55	25
Future Volume (veh/h)	39	281	30	137	181	33	54	180	300	18	55	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	41	296	32	144	191	35	57	189	316	19	58	26
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	494	53	185	652	117	64	214	357	35	107	122
Arrive On Green	0.04	0.15	0.15	0.10	0.22	0.22	0.38	0.38	0.38	0.08	0.08	0.08
Sat Flow, veh/h	1774	3225	346	1774	2998	540	171	567	948	454	1386	1583
Grp Volume(v), veh/h	41	161	167	144	111	115	562	0	0	77	0	26
Grp Sat Flow(s),veh/h/ln	1774	1770	1802	1774	1770	1768	1687	0	0	1840	0	1583
Q Serve(g_s), s	1.5	5.6	5.7	5.2	3.5	3.6	20.5	0.0	0.0	2.7	0.0	1.0
Cycle Q Clear(g_c), s	1.5	5.6	5.7	5.2	3.5	3.6	20.5	0.0	0.0	2.7	0.0	1.0
Prop In Lane	1.00		0.19	1.00		0.31	0.10		0.56	0.25		1.00
Lane Grp Cap(c), veh/h	71	271	276	185	385	384	635	0	0	142	0	122
V/C Ratio(X)	0.58	0.60	0.60	0.78	0.29	0.30	0.88	0.00	0.00	0.54	0.00	0.21
Avail Cap(c_a), veh/h	146	484	493	391	729	728	756	0	0	811	0	698
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.0	26.0	26.0	28.7	21.5	21.6	19.2	0.0	0.0	29.2	0.0	28.5
Incr Delay (d2), s/veh	7.2	2.1	2.1	6.9	0.4	0.4	10.8	0.0	0.0	3.2	0.0	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	0.9	2.9	3.0	2.9	1.7	1.8	11.4	0.0	0.0	1.5	0.0	0.5
LnGrp Delay(d),s/veh	38.2	28.1	28.1	35.6	21.9	22.0	29.9	0.0	0.0	32.4	0.0	29.3
LnGrp LOS	D	C	C	D	C	C	C			C		C
Approach Vol, veh/h		369			370			562			103	
Approach Delay, s/veh		29.2			27.3			29.9			31.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.3	11.4	15.6		9.6	7.1	19.8
Change Period (Y+Rc), s		4.5	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s		29.5	14.5	18.0		29.0	5.4	27.1
Max Q Clear Time (g_c+I1), s		22.5	7.2	7.7		4.7	3.5	5.6
Green Ext Time (p_c), s		2.3	0.2	2.4		0.4	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1	50	2	0	0	15	149	7	2	966	332
Future Volume (veh/h)	31	1	50	2	0	0	15	149	7	2	966	332
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	34	1	56	2	0	0	17	166	8	2	1073	369
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	2	88	6	0	0	35	227	11	896	1205	1025
Arrive On Green	0.06	0.06	0.06	0.00	0.00	0.00	0.02	0.13	0.13	0.50	0.65	0.65
Sat Flow, veh/h	1774	28	1560	1774	0	0	1774	1763	85	1774	1863	1583
Grp Volume(v), veh/h	34	0	57	2	0	0	17	0	174	2	1073	369
Grp Sat Flow(s),veh/h/ln	1774	0	1588	1774	0	0	1774	0	1848	1774	1863	1583
Q Serve(g_s), s	1.4	0.0	2.6	0.1	0.0	0.0	0.7	0.0	6.8	0.0	36.0	8.0
Cycle Q Clear(g_c), s	1.4	0.0	2.6	0.1	0.0	0.0	0.7	0.0	6.8	0.0	36.0	8.0
Prop In Lane	1.00		0.98	1.00		0.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	100	0	90	6	0	0	35	0	238	896	1205	1025
V/C Ratio(X)	0.34	0.00	0.63	0.35	0.00	0.00	0.48	0.00	0.73	0.00	0.89	0.36
Avail Cap(c_a), veh/h	118	0	106	567	0	0	118	0	1613	896	1626	1382
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	34.6	37.3	0.0	0.0	36.4	0.0	31.4	9.2	11.0	6.1
Incr Delay (d2), s/veh	2.0	0.0	9.1	31.9	0.0	0.0	9.8	0.0	4.3	0.0	5.1	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	0.7	0.0	1.4	0.1	0.0	0.0	0.4	0.0	3.8	0.0	19.9	3.5
LnGrp Delay(d),s/veh	36.0	0.0	43.7	69.3	0.0	0.0	46.2	0.0	35.7	9.2	16.1	6.3
LnGrp LOS	D		D	E			D		D	A	B	A
Approach Vol, veh/h		91			2			191			1444	
Approach Delay, s/veh		40.9			69.3			36.7			13.6	
Approach LOS		D			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.9	16.7		8.7	6.0	55.6		4.7
Change Period (Y+Rc), s	7.0	* 7		4.5	4.5	7.0		4.5
Max Green Setting (Gmax), s	5.0	* 66		5.0	5.0	65.5		24.0
Max Q Clear Time (g_c+I1), s	2.0	8.8		4.6	2.7	38.0		2.1
Green Ext Time (p_c), s	2.2	0.9		0.0	0.0	10.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	243	82	326	588	20	21	41	145	61	196	134
Future Volume (veh/h)	15	243	82	326	588	20	21	41	145	61	196	134
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	16	256	86	343	619	21	22	43	153	64	206	141
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	459	151	356	1245	42	28	55	196	84	270	305
Arrive On Green	0.02	0.18	0.18	0.20	0.36	0.36	0.17	0.17	0.17	0.19	0.19	0.19
Sat Flow, veh/h	1774	2621	860	1774	3493	118	167	325	1158	436	1405	1583
Grp Volume(v), veh/h	16	171	171	343	313	327	218	0	0	270	0	141
Grp Sat Flow(s),veh/h/ln	1774	1770	1711	1774	1770	1842	1650	0	0	1841	0	1583
Q Serve(g_s), s	0.6	6.4	6.6	13.9	10.0	10.0	9.1	0.0	0.0	10.0	0.0	5.7
Cycle Q Clear(g_c), s	0.6	6.4	6.6	13.9	10.0	10.0	9.1	0.0	0.0	10.0	0.0	5.7
Prop In Lane	1.00		0.50	1.00		0.06	0.10		0.70	0.24		1.00
Lane Grp Cap(c), veh/h	34	310	300	356	631	657	280	0	0	354	0	305
V/C Ratio(X)	0.47	0.55	0.57	0.96	0.50	0.50	0.78	0.00	0.00	0.76	0.00	0.46
Avail Cap(c_a), veh/h	123	440	426	356	673	700	673	0	0	738	0	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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	27.2	27.3	28.7	18.2	18.2	28.8	0.0	0.0	27.6	0.0	25.9
Incr Delay (d2), s/veh	10.0	1.5	1.7	38.3	0.6	0.6	4.7	0.0	0.0	3.4	0.0	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	0.4	3.2	3.3	10.5	5.0	5.2	4.5	0.0	0.0	5.4	0.0	2.6
LnGrp Delay(d),s/veh	45.1	28.8	29.1	67.0	18.8	18.8	33.5	0.0	0.0	31.1	0.0	27.0
LnGrp LOS	D	C	C	E	B	B	C			C		C
Approach Vol, veh/h		358			983			218			411	
Approach Delay, s/veh		29.6			35.6			33.5			29.7	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		16.8	19.0	18.2		18.4	5.9	31.3
Change Period (Y+Rc), s		4.5	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s		29.5	14.5	18.0		29.0	5.0	27.5
Max Q Clear Time (g_c+I1), s		11.1	15.9	8.6		12.0	2.6	12.0
Green Ext Time (p_c), s		1.3	0.0	4.0		1.9	0.0	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	33.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	3	21	2	1	1	54	519	4	1	199	38
Future Volume (veh/h)	134	3	21	2	1	1	54	519	4	1	199	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	149	3	23	2	1	1	60	577	4	1	221	42
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	21	163	6	3	3	103	710	5	4	710	604
Arrive On Green	0.11	0.11	0.11	0.01	0.01	0.01	0.06	0.38	0.38	0.00	0.38	0.38
Sat Flow, veh/h	1774	186	1425	871	436	436	1774	1848	13	1774	1863	1583
Grp Volume(v), veh/h	149	0	26	4	0	0	60	0	581	1	221	42
Grp Sat Flow(s),veh/h/ln	1774	0	1611	1742	0	0	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	3.8	0.0	0.7	0.1	0.0	0.0	1.5	0.0	13.0	0.0	3.9	0.8
Cycle Q Clear(g_c), s	3.8	0.0	0.7	0.1	0.0	0.0	1.5	0.0	13.0	0.0	3.9	0.8
Prop In Lane	1.00		0.88	0.50		0.25	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	185	11	0	0	103	0	715	4	710	604
V/C Ratio(X)	0.73	0.00	0.14	0.35	0.00	0.00	0.58	0.00	0.81	0.26	0.31	0.07
Avail Cap(c_a), veh/h	361	0	328	897	0	0	327	0	1237	190	1094	930
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	18.6	23.1	0.0	0.0	21.4	0.0	12.9	23.2	10.1	9.2
Incr Delay (d2), s/veh	5.0	0.0	0.3	17.7	0.0	0.0	5.2	0.0	2.3	33.1	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.3	0.1	0.0	0.0	0.9	0.0	7.1	0.0	2.0	0.3
LnGrp Delay(d),s/veh	25.0	0.0	18.9	40.8	0.0	0.0	26.6	0.0	15.1	56.4	10.4	9.2
LnGrp LOS	C		B	D			C		B	E	B	A
Approach Vol, veh/h		175			4			641			264	
Approach Delay, s/veh		24.1			40.8			16.2			10.4	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	24.9		9.8	7.2	24.8		4.8
Change Period (Y+Rc), s	7.0	* 7		4.5	4.5	7.0		4.5
Max Green Setting (Gmax), s	5.0	* 31		9.5	8.6	27.4		24.0
Max Q Clear Time (g_c+I1), s	2.0	15.0		5.8	3.5	5.9		2.1
Green Ext Time (p_c), s	0.3	2.9		0.2	0.0	1.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	327	46	137	259	36	91	185	300	19	57	25
Future Volume (veh/h)	41	327	46	137	259	36	91	185	300	19	57	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	43	344	48	144	273	38	96	195	316	20	60	26
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	525	73	180	719	99	107	217	352	33	100	114
Arrive On Green	0.04	0.17	0.17	0.10	0.23	0.23	0.40	0.40	0.40	0.07	0.07	0.07
Sat Flow, veh/h	1774	3124	432	1774	3126	430	268	544	882	460	1380	1583
Grp Volume(v), veh/h	43	194	198	144	153	158	607	0	0	80	0	26
Grp Sat Flow(s),veh/h/ln	1774	1770	1786	1774	1770	1787	1694	0	0	1840	0	1583
Q Serve(g_s), s	1.8	7.5	7.6	5.8	5.4	5.5	24.7	0.0	0.0	3.1	0.0	1.1
Cycle Q Clear(g_c), s	1.8	7.5	7.6	5.8	5.4	5.5	24.7	0.0	0.0	3.1	0.0	1.1
Prop In Lane	1.00		0.24	1.00		0.24	0.16		0.52	0.25		1.00
Lane Grp Cap(c), veh/h	71	297	300	180	407	411	677	0	0	133	0	114
V/C Ratio(X)	0.61	0.65	0.66	0.80	0.38	0.38	0.90	0.00	0.00	0.60	0.00	0.23
Avail Cap(c_a), veh/h	167	433	438	229	496	501	795	0	0	726	0	625
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	28.6	28.6	32.3	23.9	23.9	20.7	0.0	0.0	33.1	0.0	32.2
Incr Delay (d2), s/veh	8.2	2.4	2.5	14.3	0.6	0.6	11.6	0.0	0.0	4.3	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	1.0	3.9	4.0	3.6	2.7	2.7	13.7	0.0	0.0	1.7	0.0	0.5
LnGrp Delay(d),s/veh	43.0	31.0	31.1	46.5	24.4	24.5	32.3	0.0	0.0	37.4	0.0	33.2
LnGrp LOS	D	C	C	D	C	C	C			D		C
Approach Vol, veh/h		435			455			607			106	
Approach Delay, s/veh		32.2			31.4			32.3			36.3	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		33.9	12.0	17.9		9.8	7.4	22.4
Change Period (Y+Rc), s		4.5	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s		34.5	9.5	18.0		29.0	6.9	20.6
Max Q Clear Time (g_c+I1), s		26.7	7.8	9.6		5.1	3.8	7.5
Green Ext Time (p_c), s		2.7	0.1	2.7		0.4	0.0	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	181	51	326	548	19	9	36	145	59	182	146
Future Volume (veh/h)	17	181	51	326	548	19	9	36	145	59	182	146
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	18	191	54	343	577	20	9	38	153	62	192	154
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	421	116	383	1215	42	12	50	201	84	261	297
Arrive On Green	0.02	0.15	0.15	0.22	0.35	0.35	0.16	0.16	0.16	0.19	0.19	0.19
Sat Flow, veh/h	1774	2743	756	1774	3490	121	74	311	1253	449	1391	1583
Grp Volume(v), veh/h	18	121	124	343	292	305	200	0	0	254	0	154
Grp Sat Flow(s),veh/h/ln	1774	1770	1729	1774	1770	1841	1638	0	0	1840	0	1583
Q Serve(g_s), s	0.7	4.2	4.4	12.6	8.7	8.7	7.8	0.0	0.0	8.7	0.0	5.9
Cycle Q Clear(g_c), s	0.7	4.2	4.4	12.6	8.7	8.7	7.8	0.0	0.0	8.7	0.0	5.9
Prop In Lane	1.00		0.44	1.00		0.07	0.04		0.76	0.24		1.00
Lane Grp Cap(c), veh/h	38	272	265	383	616	641	262	0	0	345	0	297
V/C Ratio(X)	0.48	0.45	0.47	0.90	0.47	0.48	0.76	0.00	0.00	0.74	0.00	0.52
Avail Cap(c_a), veh/h	143	474	463	383	714	743	719	0	0	794	0	684
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.5	25.8	25.9	25.6	17.1	17.1	27.0	0.0	0.0	25.7	0.0	24.6
Incr Delay (d2), s/veh	9.1	1.2	1.3	22.7	0.6	0.5	4.6	0.0	0.0	3.1	0.0	1.4
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	0.4	2.1	2.2	8.6	4.3	4.5	3.9	0.0	0.0	4.7	0.0	2.7
LnGrp Delay(d),s/veh	41.6	27.0	27.2	48.3	17.7	17.7	31.5	0.0	0.0	28.8	0.0	25.9
LnGrp LOS	D	C	C	D	B	B	C			C		C
Approach Vol, veh/h		263			940			200			408	
Approach Delay, s/veh		28.1			28.9			31.5			27.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		15.3	19.0	15.8		17.1	5.9	28.9
Change Period (Y+Rc), s		4.5	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s		29.5	14.5	18.0		29.0	5.4	27.1
Max Q Clear Time (g_c+I1), s		9.8	14.6	6.4		10.7	2.7	10.7
Green Ext Time (p_c), s		1.2	0.0	3.9		1.9	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

APPENDIX I

Queuing Analysis Worksheets

Intersection: 1: N Centre City Pkwy & N Nutmeg St/Coyote Hill Glen

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	T	R
Maximum Queue (ft)	47	89	27	48	51	26	463	185
Average Queue (ft)	14	28	2	12	12	1	114	44
95th Queue (ft)	39	64	13	37	42	9	264	110
Link Distance (ft)		406	545		716		1461	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100			100		100		125
Storage Blk Time (%)		0					6	
Queuing Penalty (veh)		0					19	

Intersection: 7: Project Driveway & N Nutmeg St

Movement	EB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	24	55	31
Average Queue (ft)	1	27	13
95th Queue (ft)	8	51	39
Link Distance (ft)		285	231
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 19

Intersection: 1: N Centre City Pkwy & N Nutmeg St/Coyote Hill Glen

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	L	TR	T	R
Maximum Queue (ft)	120	23	27	73	108	132	48
Average Queue (ft)	52	7	4	30	52	42	12
95th Queue (ft)	91	25	19	57	98	87	38
Link Distance (ft)		451	545		716	1461	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100			100			125
Storage Blk Time (%)	1				0	1	
Queuing Penalty (veh)	0				0	0	

Intersection: 7: Project Driveway & N Nutmeg St

Movement	WB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	28	27	28
Average Queue (ft)	5	14	6
95th Queue (ft)	23	36	26
Link Distance (ft)		280	191
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1