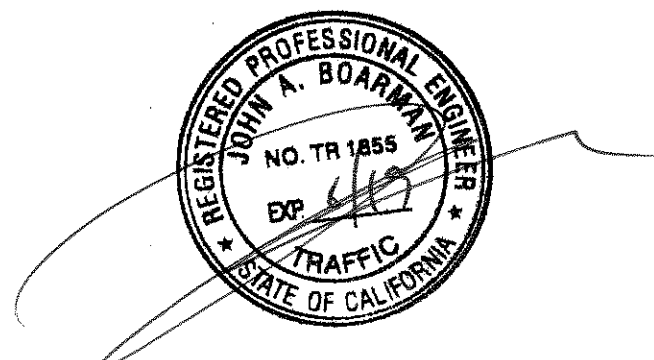


TRANSPORTATION IMPACT ANALYSIS  
**220 N. QUINCE STREET SENIOR  
HOUSING PROJECT**

Escondido, California  
June 3, 2019

LLG Ref. 3-17-2781



*Prepared by:*  
Jose Nunez  
Transportation Planner II

*Under the Supervision of:*  
John A. Boarman  
Principal

**Linscott, Law &  
Greenspan, Engineers**  
4542 Ruffner Street  
Suite 100  
San Diego, CA 92111  
**858.300.8800** T  
858.300.8810 F  
[www.llgengineers.com](http://www.llgengineers.com)

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### APPENDIX

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TRANSPORTATION IMPACT ANALYSIS  
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## 1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) has prepared this transportation impact analysis to assess the impacts to the street system as a result of the Quince Street Senior Center project (“project”), located within the City of Escondido. The Project proposes the development of 147 senior residential dwelling units along with ancillary uses on a 1.49-acre site. The project site is located on the northeast corner of W. Valley Parkway and N. Quince Street.

The traffic analysis presented in this report includes the following:

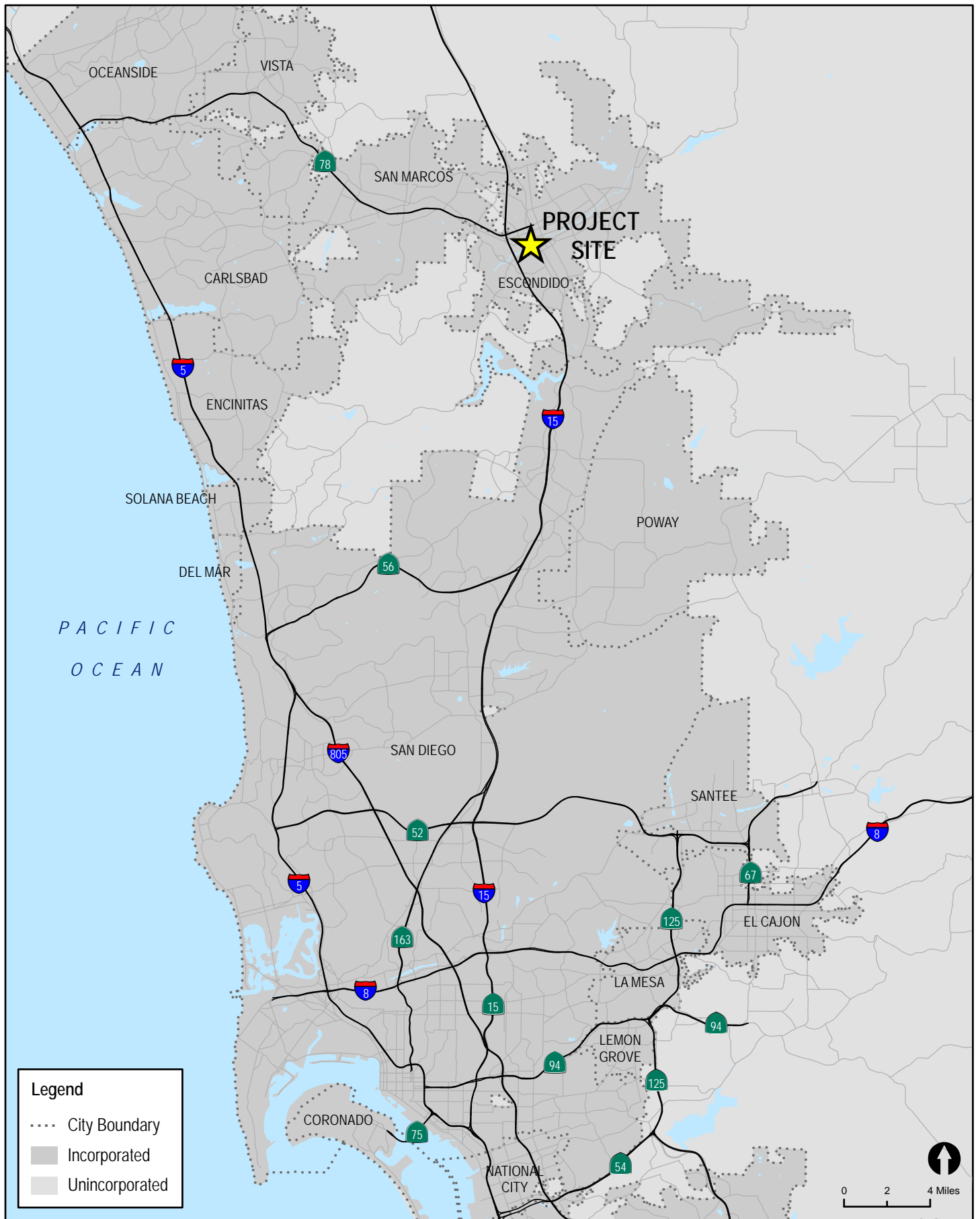
- Project Description
- Existing Conditions
- Analysis Approach and Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Project Trip Generation/Distribution/Assignment
- Cumulative Projects Discussion
- Analysis of Near-Term Scenarios
- Access Discussion
- Summary of Significant Impacts and Mitigation Measures

## 2.0 PROJECT DESCRIPTION

The 220 N. Quince Street Senior Housing project site is located in the City of Escondido, east of Interstate 15 (I-15) at the northeast corner of W. Valley Parkway and N. Quince Street. The 1.49-acre project site is developed with three approximately 10,000-square-foot (sf) warehouse buildings and one approximately 2,000-sf building formerly used as a maintenance and repair facility for a moving and storage company. A small paved and striped parking area, as well as driveways and other parking areas formerly utilized for outdoor storage are located within the site.

The project proposes to construct a five-story affordable senior housing development with ground-floor parking and four stories of residences above. The project would construct 147 residential units (98.6 units/acre density) and provide 147 parking spaces. Two courtyards would be provided at the podium (second) level and would be open to the northeastern edge of the property. An overlook plaza would be provided in the southwest corner of the podium level, facing the intersection of N. Quince Street and W. Valley Parkway. A leasing area and a 4,800-sf community room with a kitchen, office, and laundry facilities also would be provided at the podium level. New curbs, gutters, sidewalks, and street trees would be provided along the project's western and southern frontages along N. Quince Street and W. Valley Parkway, respectively. The driveway entry into the ground-level parking would be located at the northwestern corner of the project from N. Quince Street.

**Figure 2-1** shows the Project vicinity and **Figure 2-2** illustrates, in more detail, the site location. **Figure 2-3** shows the project's site plan.



**Figure 2-1**

**Vicinity Map**



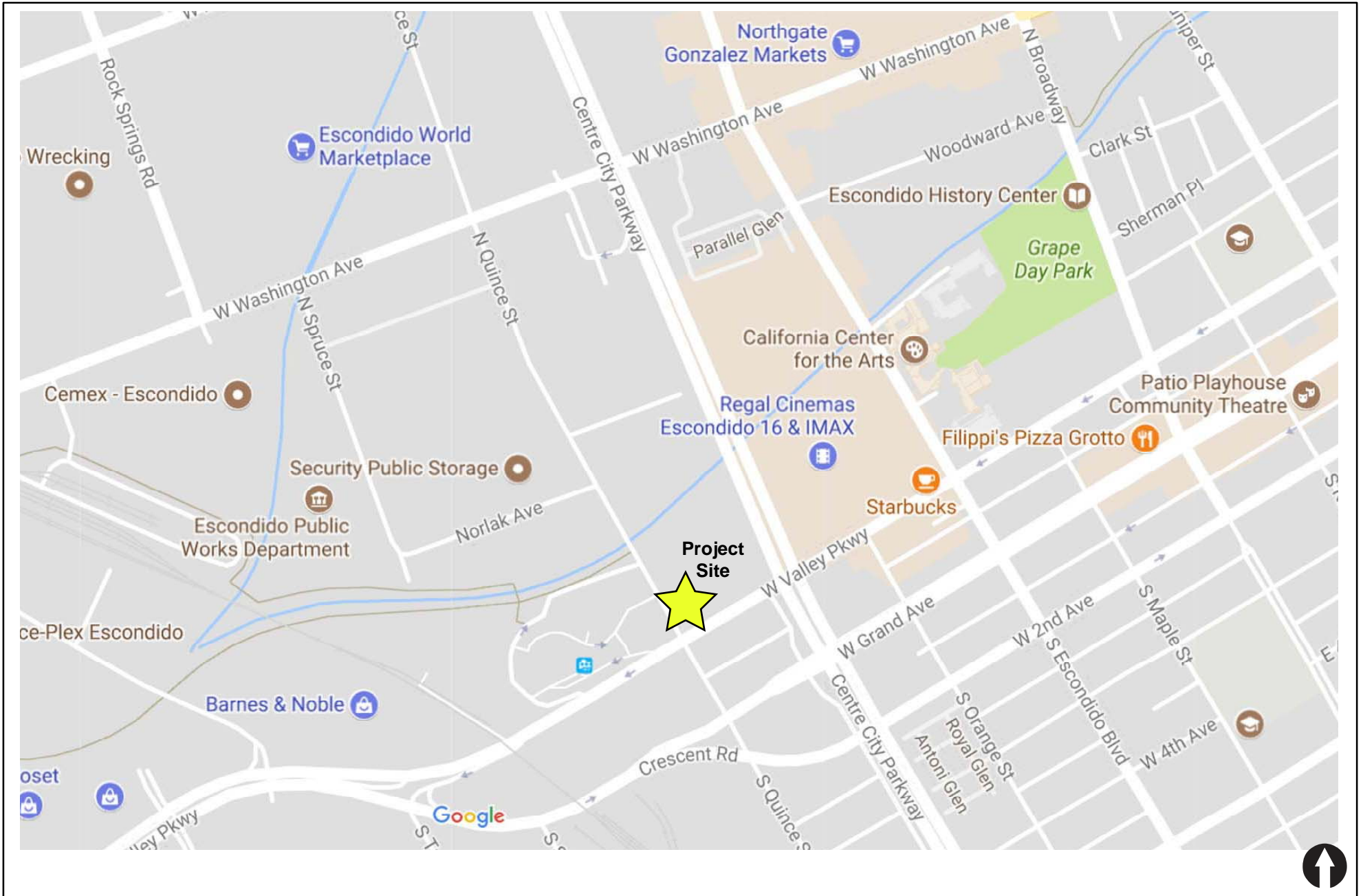


Figure 2-2

### Project Area Map

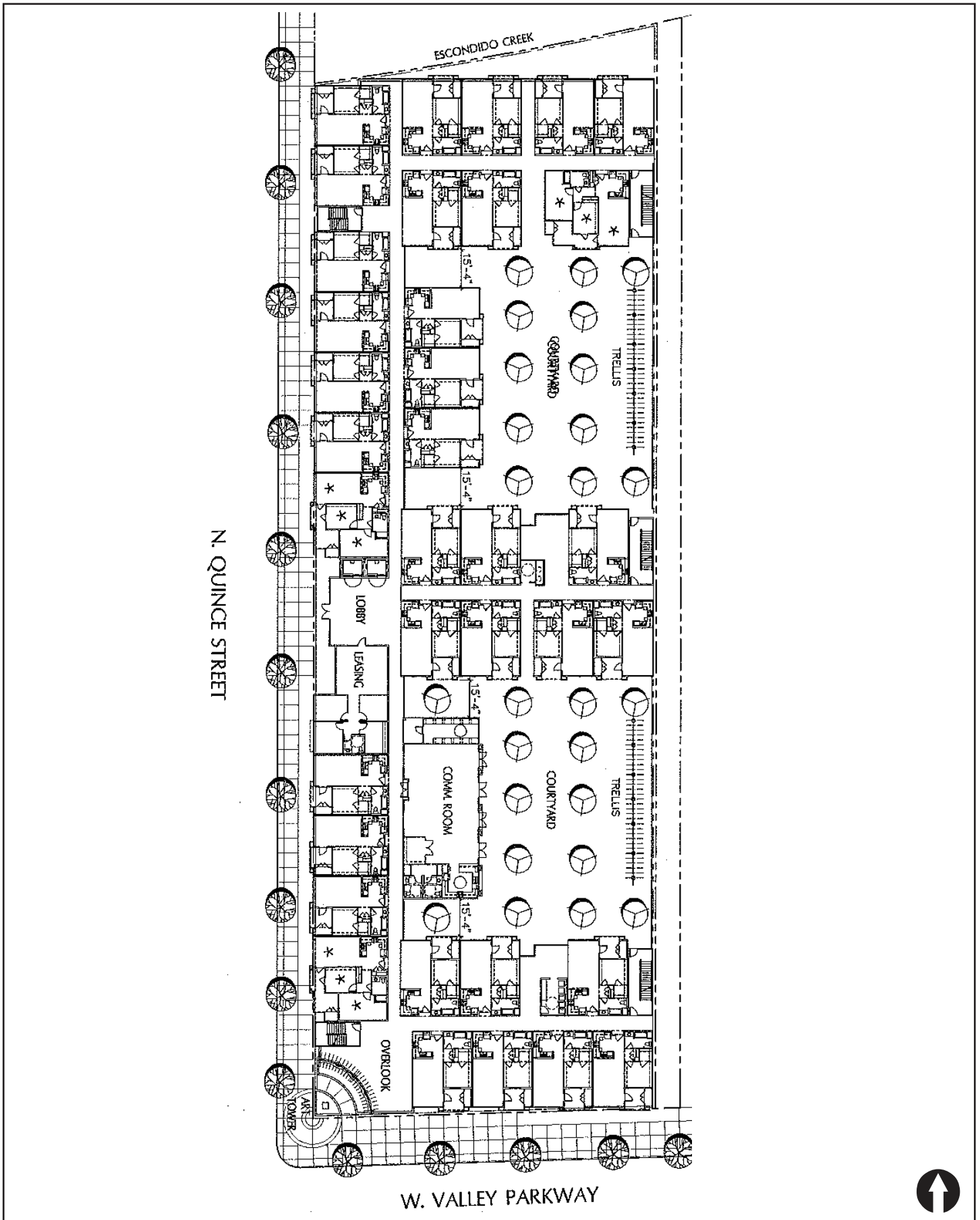


Figure 2-3  
Site Plan

### 3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed project requires an understanding of the existing transportation system within the project area. Figure 3–1 shows an existing conditions diagram, including signalized/un-signalized intersections and lane configurations.

#### 3.1 Existing Transportation Conditions

The facilities analyzed in this report fall under the jurisdiction of the City of Escondido. The following is a brief description of the streets in the project area:

**W. Valley Parkway** is classified as a 4-lane One-Way Collector within the study area. W. Valley Parkway currently provides four westbound lanes of travel with sidewalks, curbs, and gutters provided. On-street parking and bike lanes are not provided and the posted speed limit is 35 mph.

**N. Quince Street** is classified as an undivided 4-lane Collector (w/ Intermittent Turn Lanes) within the study area. N. Quince Street currently provides two lanes of travel per direction with sidewalks, curbs, and gutters provided. On-street parking and bike lanes are not provided and the posted speed limit is 35 mph.

**Centre City Parkway** is classified as a divided 4-Lane Super Major Road within the study area. Centre City Parkway currently provides two lanes of travel per direction with sidewalks, curbs, gutters, and bike lanes provided.

**W. Washington Avenue** is classified as an undivided 4-lane Collector (w/ Intermittent Turn Lanes) within the study area. W. Washington Avenue currently provides two lanes of travel per direction with sidewalks, curbs, and gutters provided. On-street parking and bike lanes are not provided and the posted speed limit is 35 mph.

#### 3.2 Existing Traffic Volumes

**Table 3–1** is a summary of the most recent available average daily traffic volumes (ADTs) from LLG counts conducted by Accurate Video Counts in July 2017. Peak hour counts at the study area intersections were also conducted in July 2017 since that is when the study began. Based on a review of historical counts which showed non-summer counts about 5% higher than summer counts. A conservative 10% growth factor was applied to all existing traffic counts.

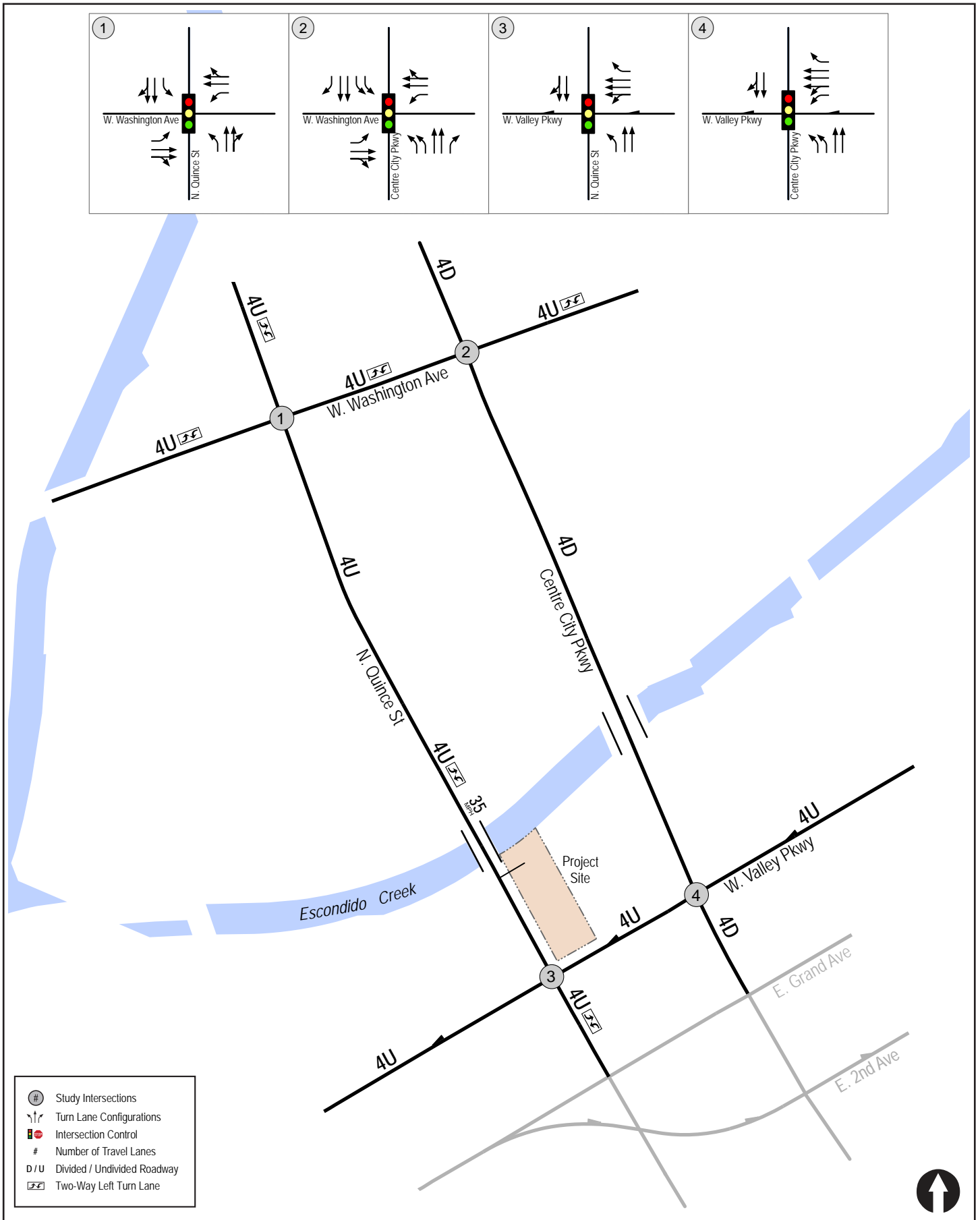
**Figure 3–2** shows the Existing Traffic Volumes. **Appendix A** contains the count sheets.

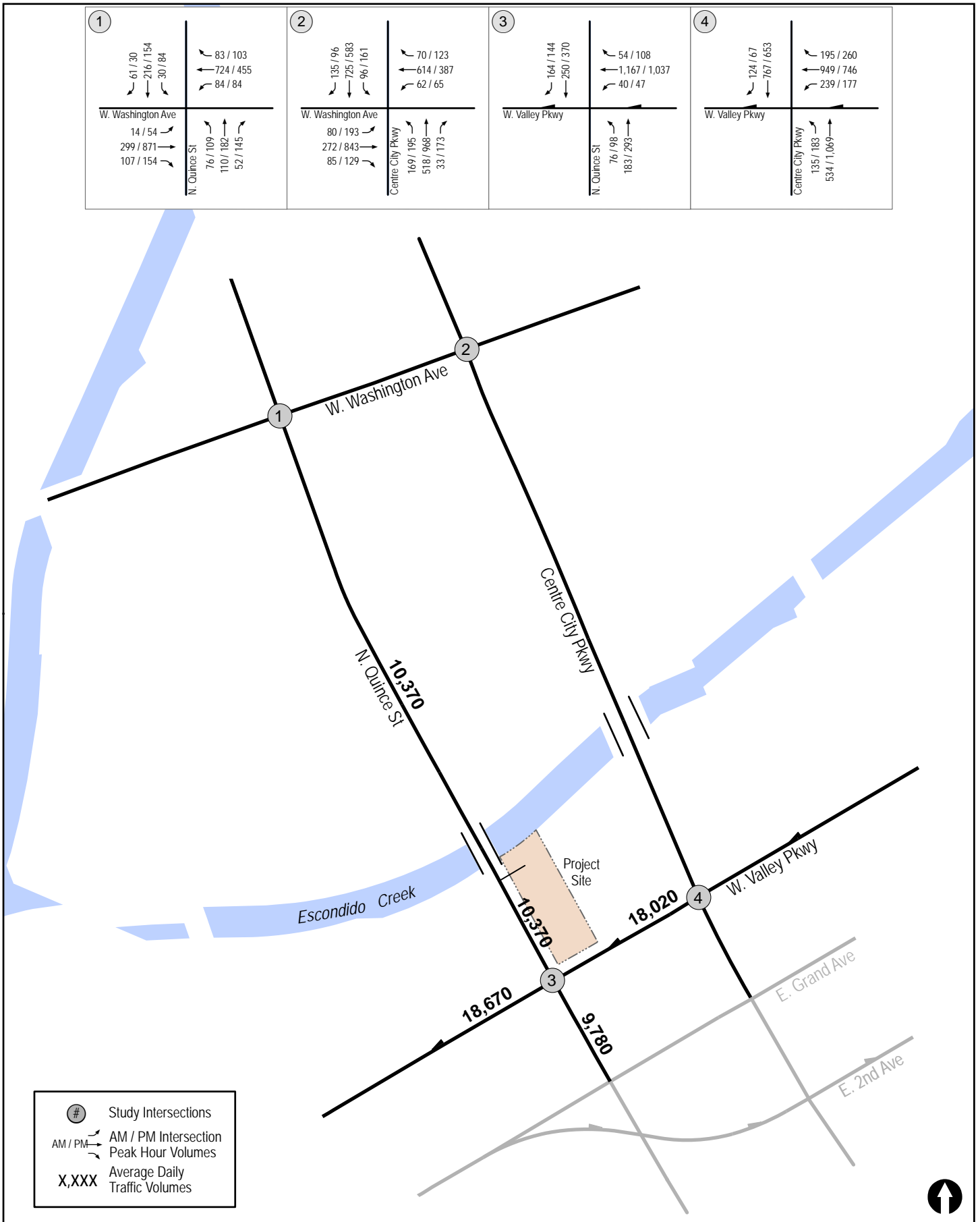
TABLE 3-1  
EXISTING TRAFFIC VOLUMES

Street Segment	ADT <sup>a</sup>
<b>N. Quince Street</b>	
W. Washington Avenue to W. Valley Parkway	10,370
South of W. Valley Parkway	9,780
<b>W. Valley Parkway</b>	
Centre City Parkway to N. Quince Street	18,020
West of Quince Street	18,670

**Footnotes:**

- a. Average Daily Traffic Volume counts conducted in July 2017 by LLG Engineers. A 10% growth was applied to the existing ADTs to account for summertime conditions.





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Figure 3-2

Existing Traffic Volumes

## 4.0 ANALYSIS APPROACH AND METHODOLOGY

### 4.1 Analysis Approach

Since the project is within the City of Escondido, the traffic study was conducted using City of Escondido guidelines. The City of Escondido's recently published Traffic Impact Analysis Guidelines provide the following direction on report approach and methodology:

1. The traffic study should utilize the *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (April 2002) published by SANDAG, to determine the project traffic volume.
2. The traffic study should utilize the following scenarios to determine project traffic impacts at intersections and along roadway segments.
  - a. Existing Condition (based on new traffic counts)
  - b. Existing + Project Traffic Condition
  - c. Existing + Cumulative Projects Traffic Condition
  - d. Existing + Cumulative Projects + Project Traffic Condition
3. Highway Capacity Manual (Year 2010) should be utilized to determine level of service for intersections.
4. The study area should include at least all major intersections (signalized and un-signalized) adjacent to the site. The tables below contain the trigger-points to identify if a roadway segment or intersection should be included in the Traffic Impact Analysis. **Table 4-1** below contains the trigger-points for roadway segments within the City of Escondido for different street classifications based on ADT added to the segment. **Table 4-2** below contains the trigger-points for intersections based on peak hour volumes.

**TABLE 4-1  
TRAFFIC IMPACT ANALYSIS ADT THRESHOLDS FOR ROADWAY SEGMENTS**

Street Classification	Lanes	Cross Sections (ft.)	TIA Trigger-Points (ADT generation)
Prime Arterial	(8 lanes)	116/136 (NP)	900
	(6 lanes)	106/126 (NP)	800
Major Road	(6 lanes)	90/110 (NP)	700
	(4 lanes)	82/102 (NP)	500
Collector	(4 lanes)	64/84 (NP)	500
	(4 lanes)	(WP)	250
Local Collector and all other	(2 lanes)	42/66 (NP)	200
		(WP)	

**General Notes:**

1. NP = No parking on street
2. WP = With parking on street

TABLE 4-2  
TRAFFIC IMPACT ANALYSIS ADT THRESHOLDS FOR INTERSECTIONS

Intersection Classification (Minor leg of the intersection)	TIA Trigger-Points (AM or PM peak hour trips added to any leg)
Prime Arterial	50
Major Road	40
Collector	30
Local Collector	20

## 4.2 Methodology

The City of Escondido utilizes the following methodology for evaluating traffic operations.

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized intersections and roadway segments.

The analysis conducted in this report utilized the published Highway Capacity Manual (HCM) methodology for evaluating signalized intersections. They also utilize LOS criteria for circulation element roadways based on published capacity tables. The following is a discussion of the both methodologies:

**Signalized intersections** were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM)*, with the assistance of the *Synchro* (version 9) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets are attached in **Appendix B**.

**Street segment** analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of Escondido *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. This table is provided in **Appendix C**.



## 5.0 SIGNIFICANCE CRITERIA

The City of Escondido Engineering Staff utilizes the following Significance Criteria:

In accordance with “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 5-1** below to be exceeded in a roadway segment or an 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 5-1  
CITY OF ESCONDIDO TRAFFIC IMPACT SIGNIFICANCE THRESHOLDS

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

## 6.0 ANALYSIS OF EXISTING CONDITIONS

### 6.1 Peak Hour Intersection Operations

**Table 6-1** summarizes the existing peak hour intersection operations. As shown, all the study area intersections are calculated to currently operate at LOS D or better during both the AM and PM peak hours.

### 6.2 Daily Street Segment Operations

**Table 6-2** summarizes the existing segment operations along the key study area roadways. As shown, all roadway segments are calculated to currently operate LOS C or better on a daily basis.

**TABLE 6-1  
EXISTING INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Delay <sup>a</sup>	LOS <sup>b</sup>
1. W. Washington Ave / N. Quince St	Signal	AM	14.5	B
		PM	13.8	B
2. W. Washington Ave / Centre City Pkwy	Signal	AM	26.6	C
		PM	37.8	D
3. W. Valley Pkwy / N. Quince St	Signal	AM	20.9	C
		PM	22.8	C
4. W. Valley Pkwy / Centre City Pkwy	Signal	AM	19.7	B
		PM	17.7	B

**Footnotes:**

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.

SIGNALIZED	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

**TABLE 6-2  
EXISTING STREET SEGMENT OPERATIONS**

Street Segment	Functional Class	Capacity (LOS E) <sup>a</sup>	ADT <sup>b</sup>	LOS <sup>c</sup>	V/C <sup>d</sup>
<b>N. Quince Street</b>					
W. Washington Ave to W. Valley Pkwy	4-Lane Collector	20,000	10,370	B	0.519
South of W. Valley Pkwy	4-Lane Collector	20,000	9,780	B	0.489
<b>W. Valley Parkway</b>					
Centre City Pkwy to N. Quince St	4-Lane Collector	34,200	18,020	B	0.530
West of N. Quince St	4-Lane Collector	34,200	18,670	C	0.546

**Footnotes:**

- a. Capacities based on the City of Escondido Roadway Classification Table.
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.

## 7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the project trip generation calculations and the project traffic distribution and assignment through the local network. It should be noted that no credit was taken or applied for the existing land uses currently on-site.

### 7.1 Trip Generation

The project proposes to develop 147 senior residential dwelling units on a 1.49-acre site.

The project traffic generation calculations were conducted using the trip generation rates published in SANDAG's *Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region (April 2002)*. Based on the project description, LLG utilized the *Retirement Community* category, which SANDAG specifies trip rates of 4 ADT/unit.

**Table 7-1** shows a summary of the project traffic generation. As tabulated the proposed project is calculated to generate 590 daily trips with 30 trips (12 inbound/18 outbound) in AM peak hour and 41 trips (25 inbound/16 outbound) during PM peak hour.

### 7.2 Trip Distribution/Assignment

The project traffic distributions were based on the site location, neighborhood commercial centers, and access to other potential destinations. It should be noted that project trip assignments were distributed to account for W. Valley Parkway a westbound (one-way) only roadway.

**Figure 7-1** shows the project trip distribution percentages. **Figure 7-2** shows the project traffic volumes. **Figure 7-3** shows Existing + Project traffic volumes.

TABLE 7-1  
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate <sup>a</sup>	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Senior Housing	147 DU	4/DU	590	5%	40:60	12	18	30	7%	60:40	25	16	41

**Footnotes:**

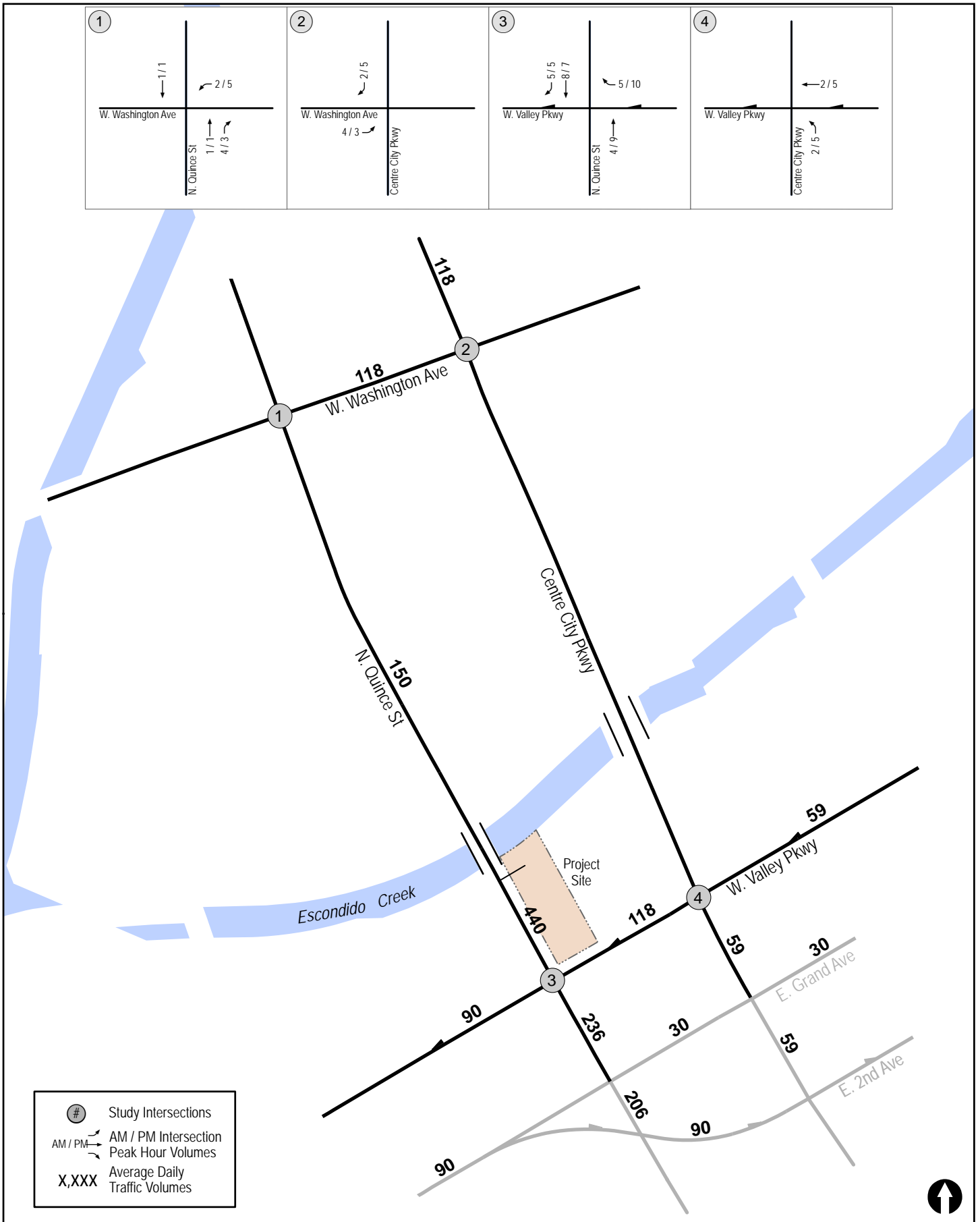
- a. Rates based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002 (Retirement Community category utilized).



Figure 7-1

**Project Traffic Distribution**

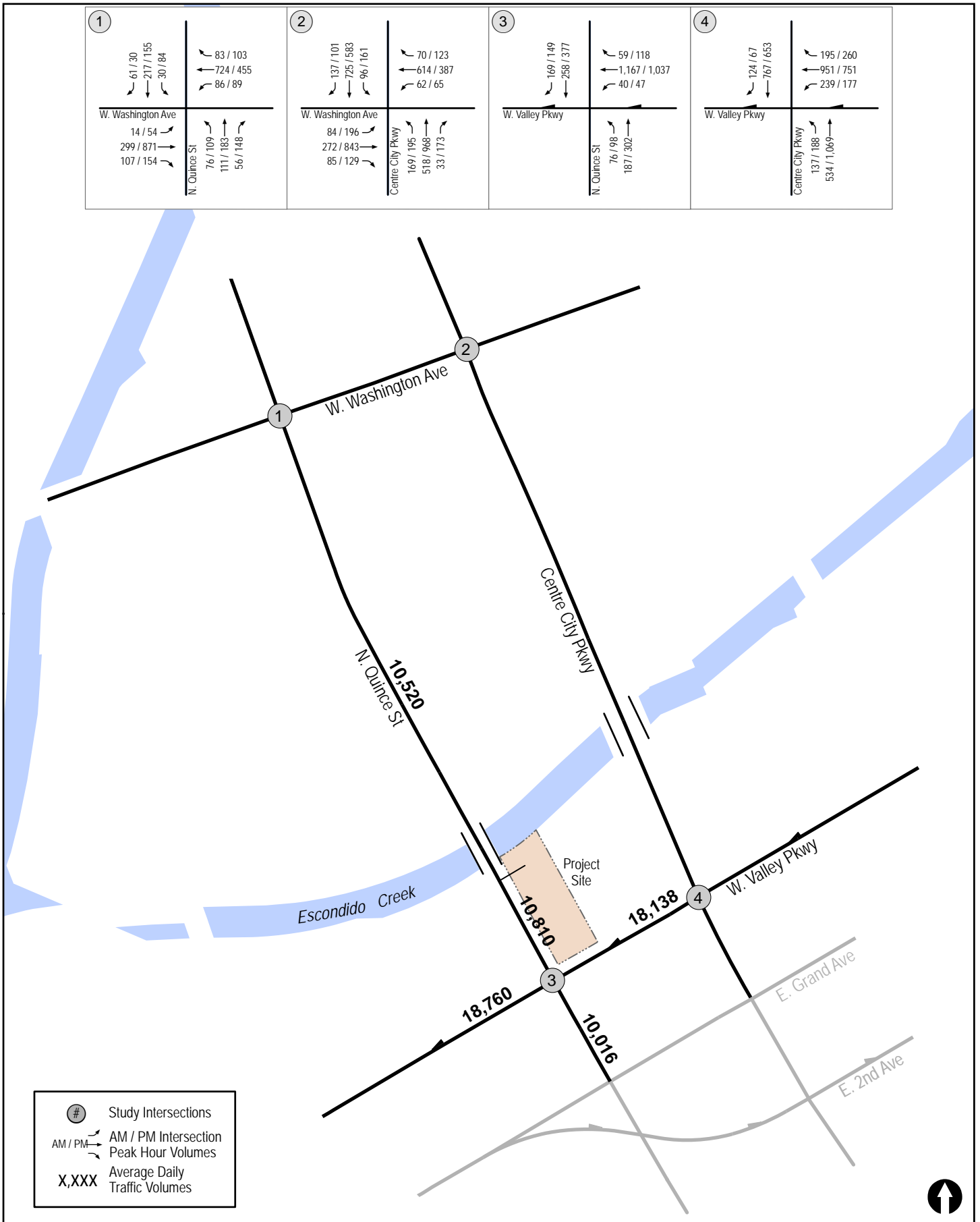
220 N. QUINCE STREET SENIOR HOUSING PROJECT



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Figure 7-2

Project Traffic Volumes



Intersection	Northbound	Southbound	Westbound	Eastbound
1 (W. Washington Ave / N. Quince St)	61 / 30 217 / 155 30 / 84	83 / 103 724 / 455 86 / 89	76 / 109 111 / 183 56 / 148	14 / 54 299 / 871 107 / 154
2 (W. Washington Ave / Centre City Pkwy)	137 / 101 725 / 583 96 / 161	70 / 123 614 / 387 62 / 65	169 / 195 518 / 968 33 / 173	84 / 196 272 / 843 85 / 129
3 (W. Valley Pkwy / N. Quince St)	169 / 149 258 / 377	59 / 118 1,167 / 1,037 40 / 47	76 / 98 187 / 302	187 / 302
4 (W. Valley Pkwy / Centre City Pkwy)	124 / 67 767 / 653	195 / 260 951 / 751 239 / 177	137 / 188 534 / 1,069	137 / 188 534 / 1,069

**Figure 7-3**

**Existing + Project Traffic Volumes**



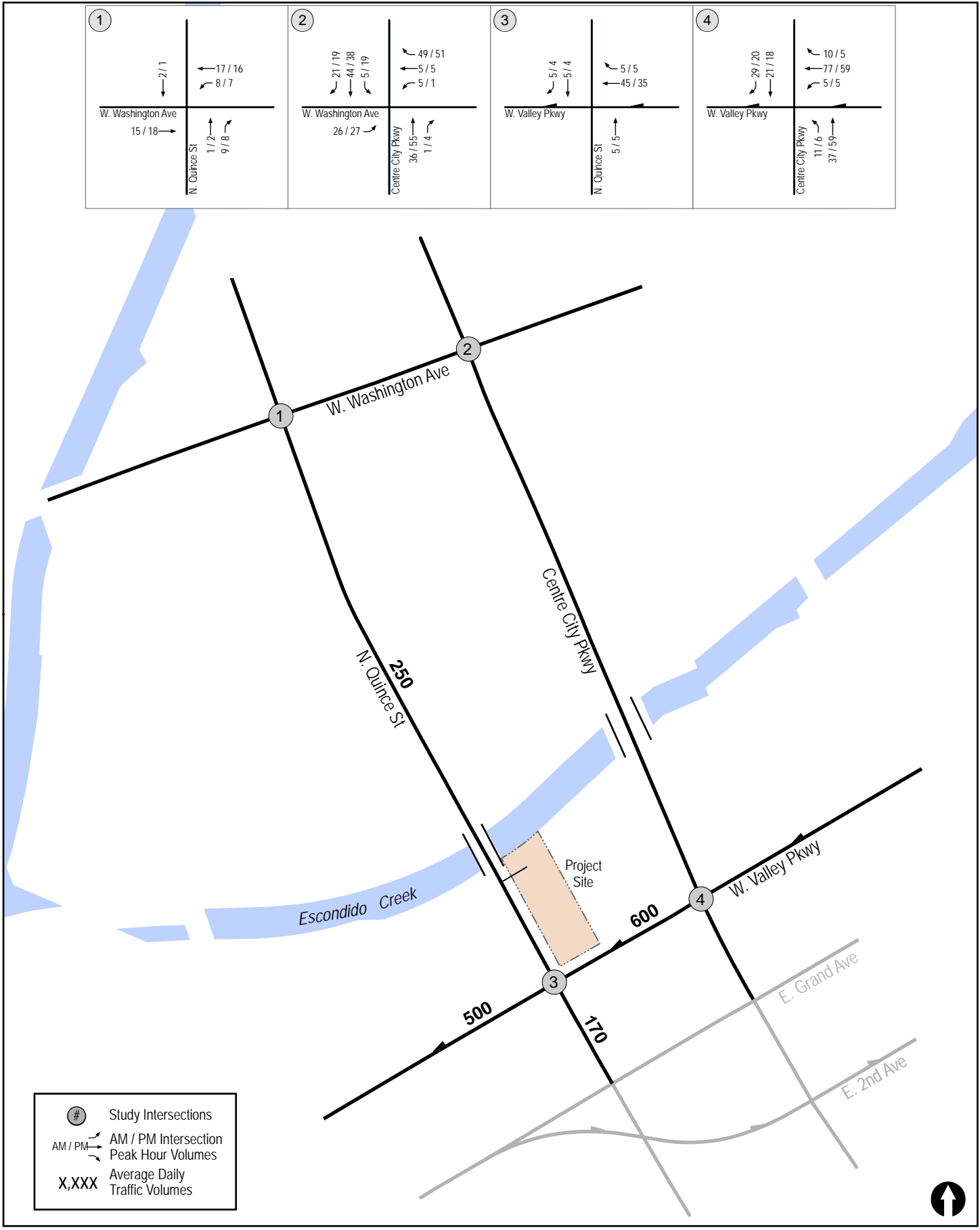
## 8.0 CUMULATIVE PROJECTS DISCUSSION

Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future. LLG researched potential cumulative projects within the City of Escondido to identify if any potential discretionary projects could be included for analysis. Based on the research and discussions with City staff, 9 cumulative projects were included in this study. Following are brief descriptions of each of them:

1. **Centerpoint 78 Commercial Project** includes a 43,500 SF supermarket and 3,200 SF of fast food restaurants located at 990 N. Broadway.
2. **Latitude II** includes 112 condominiums units located at the northeast quadrant of E. Washington Avenue and Centre City Parkway.
3. **Escondido Gateway Mixed-Use** includes 126 apartment homes and a 1,000 SF convenience market located at 700 W. Grand Avenue.
4. **City Plaza** includes 55 apartment homes, 5,200 SF of specialty retail, and 4,158 SF of office space located at 328 S. Escondido Boulevard.
5. **Hotel La Terraza** includes a 105-room hotel located at 300 La Terraza Boulevard.
6. **La Terraza Office** includes 36,614 SF of office space located at 300 La Terraza Boulevard.
7. **Centre City Shopping Center** includes 7,300 SF of fast food restaurants, 4,500 SF of specialty retail, and a 4,300 SF automatic car wash, all located on the southeast quadrant of Centre City Parkway and Mission Avenue.
8. **Touchstone Project** includes 201 total residential units, 4,800 SF of specialty retail located at 137 W. Valley Parkway and a portion of the residential units (95) would be located at 343 E. 2<sup>nd</sup> Avenue.
9. **Starbucks Drive-Through** includes 1,900 SF fast food restaurant with drive-thru located at 350 W. Valley Parkway inside the Signature Pavilion shopping center.

*Appendix D* contains the cumulative projects traffic data.

*Figure 8-1* shows the Cumulative Projects traffic volumes. *Figure 8-2* shows the Existing + Cumulative Projects traffic volumes. *Figure 8-3* shows the Existing + Cumulative Projects + Project traffic volumes.

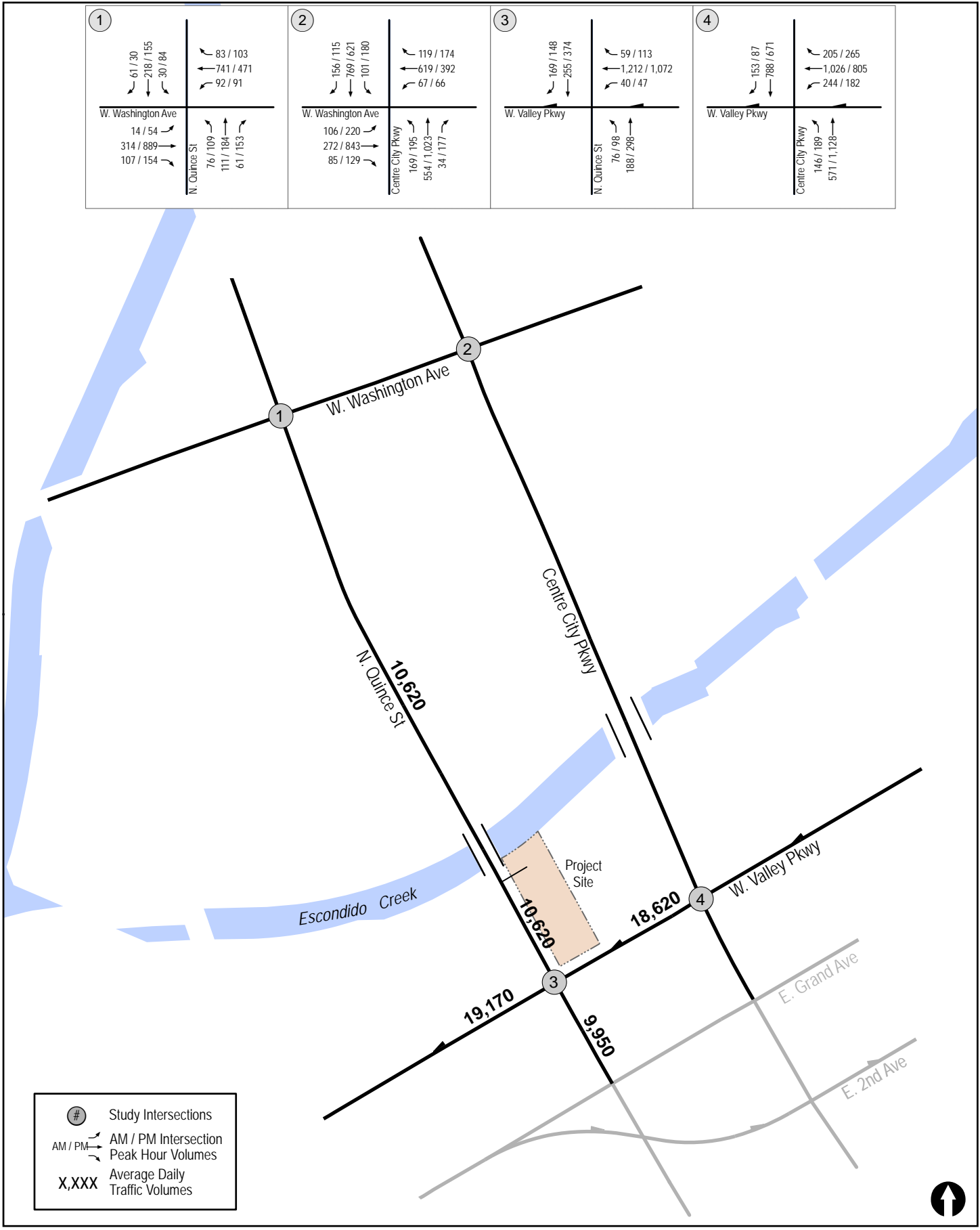


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Figure 8-1

Cumulative Projects Traffic Volumes

220 N. QUINCE STREET SENIOR HOUSING PROJECT

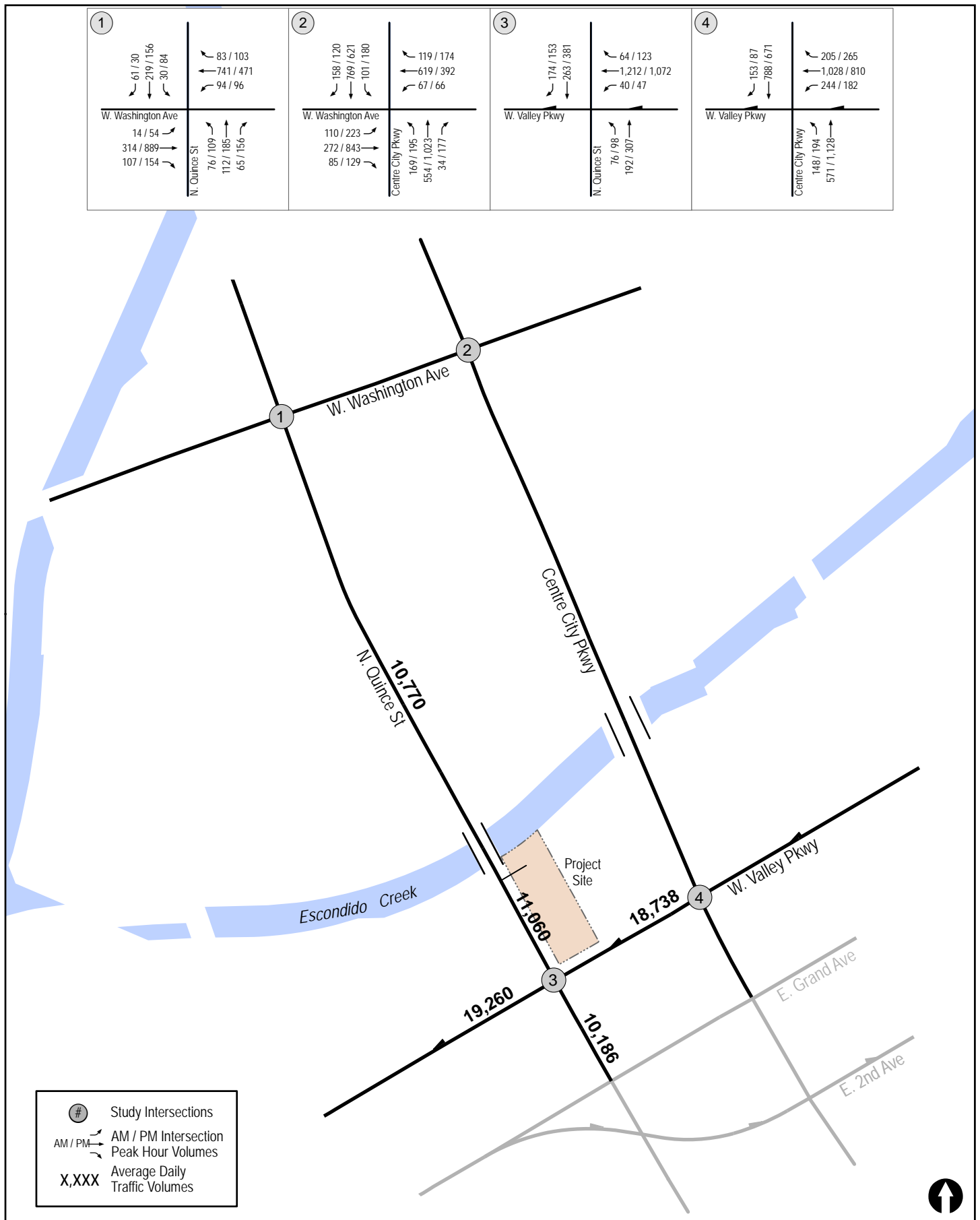


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Figure 8-2

### Existing + Cumulative Projects Traffic Volumes

220 N. QUINCE STREET SENIOR HOUSING PROJECT



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Figure 8-3

### Existing + Cumulative Projects + Project Traffic Volumes

220 N. QUINCE STREET SENIOR HOUSING PROJECT

## 9.0 ANALYSIS OF NEAR-TERM SCENARIOS

The following is a summary of the operational analyses for the various street-system components for the near-term traffic scenarios.

### 9.1 Existing + Project Conditions

#### 9.1.1 Peak Hour Intersection Operations

**Table 9-1** summarizes the peak hour intersection operations with the addition of project traffic. **Table 9-1** shows that all the study area intersections are calculated to continue to operate at LOS C or better during both the AM and PM peak hours.

#### 9.1.2 Daily Street Segment Operations

**Table 9-2** summarizes the roadway segment operations with the addition of project traffic. **Table 9-2** shows that all the study area street segments are calculated to operate at LOS C or better conditions on a daily basis.

### 9.2 Existing + Cumulative Projects Conditions

#### 9.2.1 Peak Hour Intersection Analysis

**Table 9-1** summarizes the peak hour intersection operations with the addition of cumulative projects traffic to the existing condition. **Table 9-1** shows that all the study area intersections are calculated to continue to operate at LOS C or better conditions during both the AM and PM peak hours with the exception of W. Washington Avenue and Centre City Parkway intersection, which is calculated to operate at LOS D during the PM peak hour.

#### 9.2.2 Daily Street Segment Operations

**Table 9-2** summarizes the roadway segment operations with the addition of cumulative project traffic. **Table 9-2** shows that all the study area street segments are calculated to continue to operate at LOS C or better conditions on a daily basis.

### 9.3 Existing + Cumulative Projects + Project Conditions

#### 9.3.1 Peak Hour Intersection Operations

**Table 9-1** summarizes the peak hour intersection operations for Existing + Cumulative Projects + Project conditions. **Table 9-1** shows that all the study area intersections are calculated to continue to operate at LOS C or better conditions during both the AM and PM peak hours, with the exception of W. Washington Avenue and Centre City Parkway intersection, which is calculated to continue to operate at LOS D during the PM peak hour.

#### 9.3.2 Daily Street Segment Operations

**Table 9-2** summarizes the roadway segment operations for Existing + Cumulative Projects + Project conditions. **Table 9-2** shows that all the study area street segments are calculated to continue to operate at LOS C or better conditions on a daily basis.

**TABLE 9-1  
NEAR-TERM INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing		Existing + Project			Existing + Cumulative Projects		Existing + Cumulative Projects + Project			Sig?
			Delay <sup>a</sup>	LOS <sup>b</sup>	Delay	LOS	Δ <sup>c</sup>	Delay	LOS	Delay	LOS	Δ <sup>c</sup>	
1. W. Washington Ave / N. Quince St	Signal	AM	14.5	B	14.5	B	0.0	14.6	B	14.6	B	0.0	No
		PM	13.8	B	13.8	B	0.0	13.9	B	14.0	B	0.1	
2. W. Washington Ave / Centre City Pkwy	Signal	AM	26.6	C	26.8	C	0.2	30.1	C	30.4	C	0.3	No
		PM	37.8	D	37.8	D	0.0	41.4	D	41.8	D	0.4	
3. W. Valley Pkwy / N. Quince St	Signal	AM	20.9	C	21.0	C	0.1	21.3	C	21.4	C	0.1	No
		PM	22.8	C	22.8	C	0.0	23.3	C	23.3	C	0.0	
4. W. Valley Pkwy / Centre City Pkwy	Signal	AM	19.7	B	19.7	B	0.0	20.5	B	20.5	B	0.0	No
		PM	17.7	B	17.8	B	0.1	17.7	B	18.3	B	0.6	

**Footnotes:**

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. “Δ” denotes the Project-induced increase in Delay.

SIGNALIZED	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

**TABLE 9-2  
NEAR-TERM STREET SEGMENT OPERATIONS**

Street Segment	Capacity (LOS E) <sup>a</sup>	Existing			Existing + Project				Existing + Cumulative Projects			Existing + Cumulative Projects + Project				Sig?
		ADT <sup>b</sup>	LOS <sup>c</sup>	V/C <sup>d</sup>	ADT	LOS	V/C	Δ <sup>e</sup>	ADT	LOS	V/C	ADT	LOS	V/C	Δ <sup>e</sup>	
<b>N. Quince Street</b>																
W. Washington Ave to W. Valley Pkwy	20,000	10,370	B	0.519	10,810	C	0.541	0.022	10,620	B	0.531	11,060	B	0.553	0.022	No
South of W. Valley Pkwy	20,000	9,780	B	0.489	10,016	B	0.501	0.012	9,950	B	0.498	10,186	B	0.509	0.011	No
<b>W. Valley Parkway</b>																
Centre City Pkwy to N. Quince St	34,200	18,020	B	0.527	18,138	B	0.530	0.003	18,620	C	0.544	18,738	C	0.548	0.004	No
West of Quince St	34,200	18,670	C	0.546	18,760	C	0.549	0.005	19,170	C	0.561	19,260	C	0.563	0.002	No

**Footnotes:**

- a. Capacities based on the City of Escondido Roadway Classification Table.
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.
- e. "Δ" denotes the Project-induced increase in V/C.

## 10.0 ACCESS

### 10.1 Project Access

The driveway entry into the ground-level parking would be located along the northwestern portion of the site along N. Quince Street. This is a desirable location since it is as far as possible from the N. Quince Street and W. Valley Parkway intersection. A two-way left-turn lane (TWLTL) is provided within N. Quince Street at the project driveway. This would allow inbound and outbound project traffic to turn left into and out of the project outside the N. Quince Street through lanes. The access is therefore expected to operate well.

### 10.2 Pedestrian Network

Sidewalks are provided along the both sides of Quince Street, W. Valley Parkway as well as along adjacent streets within the project vicinity.

### 10.3 Bicycle Network

There are no existing dedicated bicycle lanes on N. Quince Street within the project study area. However, Class II bike lanes are planned in the near future along N. Quince Street and the project's loading zone area was designed to accommodate this bike lane. The project should provide the bike lane along the project frontage assuming the balance of the bike lane is built.

Class II bike lanes are also provided along Centre City Parkway. A new traffic signal will be installed at the bike trail crossing just south of the channel on N. Quince Street the will enhance pedestrian movement in the area.

### 10.4 Transit Conditions

Public transit is available throughout the study area. The City of Escondido's transit center is located on the northwest corner of N. Quince Street and W. Valley Parkway. The Escondido Transit Center is a bus and train station located in Downtown Escondido, California. It serves as the current eastern terminus of the North County Transit District's SPRINTER light rail line. Currently, multiple transit services via NCTD Breeze, NCTD, and MTS bus transit lines are provided.



## 11.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Based on the established significance criteria, no significant impacts are calculated for the N. Quince Street Senior Housing project. Therefore, mitigation measures are not required.

***End of Report***

TECHNICAL APPENDICES  
**220 N. QUINCE STREET SENIOR  
HOUSING PROJECT**  
Escondido, California  
June 3, 2019

LLG Ref. 3-17-2781

**Linscott, Law &  
Greenspan, Engineers**

4542 Ruffner Street  
Suite 100

San Diego, CA 92111

**858.300.8800** T

858.300.8810 F

[www.llgengineers.com](http://www.llgengineers.com)

**APPENDIX A**  
**INTERSECTION COUNT SHEETS**

# Turn Count Summary

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



**Location:** W. Valley Parkway @ N Quince Street

**Date of Count:** Thursday, July 06, 2017

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 17-0713



# Turn Count Summary

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



**Location:** W. Valley Parkway @ Centre City Parkway

**Date of Count:** Thursday, July 06, 2017

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 17-0713



# Turn Count Summary

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



**Location:** W. Washington Avenue @ N Quince Street

**Date of Count:** Thursday, July 06, 2017

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 17-0713



# Turn Count Summary

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



**Location:** W. Washington Avenue @ Centre City Parkway

**Date of Count:** Thursday, July 06, 2017

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 17-0713





# 24 Hour Segment Count

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



**Location:** 1. Quince Street Between W Valley Parkway and Norlak Avenue

**Orientation:** North-South

**Date of Count:** Thursday, July 06, 2017

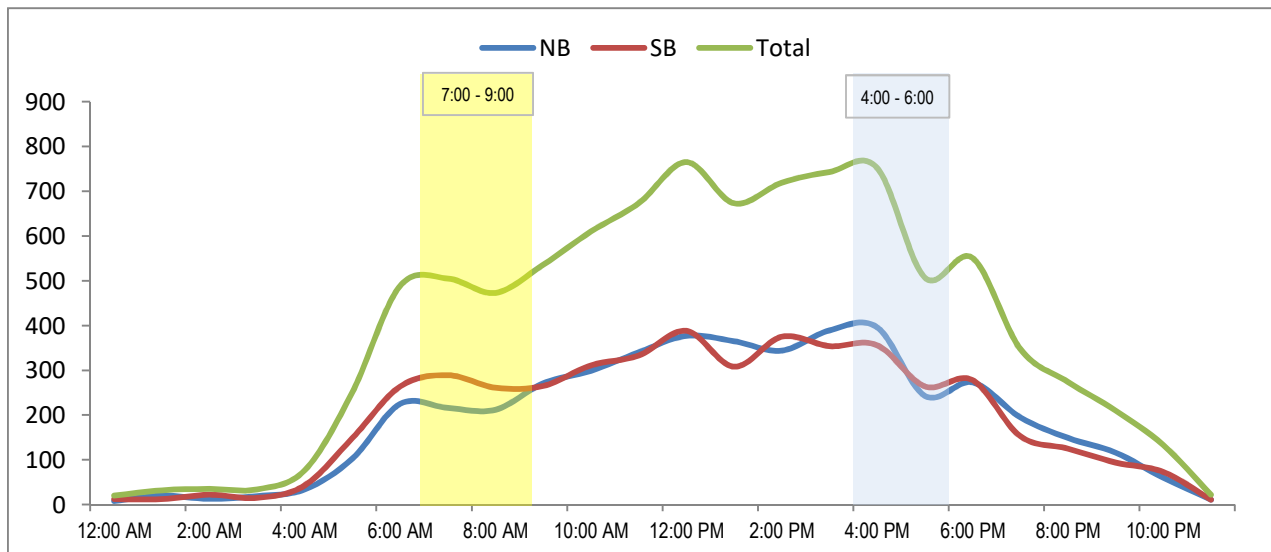
**Analysts:** DASH

**Weather:** Sunny

**AVC Proj. No:** 17-0713

24 Hour Segment Volume					9,433		
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	8	12	20	12:00 PM - 1:00 PM	377	388	765
1:00 AM - 2:00 AM	20	12	32	1:00 PM - 2:00 PM	365	308	673
2:00 AM - 3:00 AM	13	22	35	2:00 PM - 3:00 PM	344	375	719
3:00 AM - 4:00 AM	19	15	34	3:00 PM - 4:00 PM	389	354	743
4:00 AM - 5:00 AM	34	43	77	4:00 PM - 5:00 PM	396	356	752
5:00 AM - 6:00 AM	103	149	252	5:00 PM - 6:00 PM	243	264	507
6:00 AM - 7:00 AM	225	264	489	6:00 PM - 7:00 PM	273	278	551
7:00 AM - 8:00 AM	216	289	505	7:00 PM - 8:00 PM	195	153	348
8:00 AM - 9:00 AM	212	261	473	8:00 PM - 9:00 PM	149	125	274
9:00 AM - 10:00 AM	271	265	536	9:00 PM - 10:00 PM	116	94	210
10:00 AM - 11:00 AM	299	311	610	10:00 PM - 11:00 PM	60	73	133
11:00 AM - 12:00 PM	340	333	673	11:00 PM - 12:00 AM	11	11	22
<b>Total</b>	<b>1,760</b>	<b>1,976</b>	<b>3,736</b>	<b>Total</b>	<b>2,918</b>	<b>2,779</b>	<b>5,697</b>

**24-Hour NB Volume 4,678**      **24-Hour SB Volume 4,755**



# 24 Hour Segment Count

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



**Location:** 2. Quince Street Just south of W. Valley Parkway

**Orientation:** North-South

**Date of Count:** Thursday, July 06, 2017

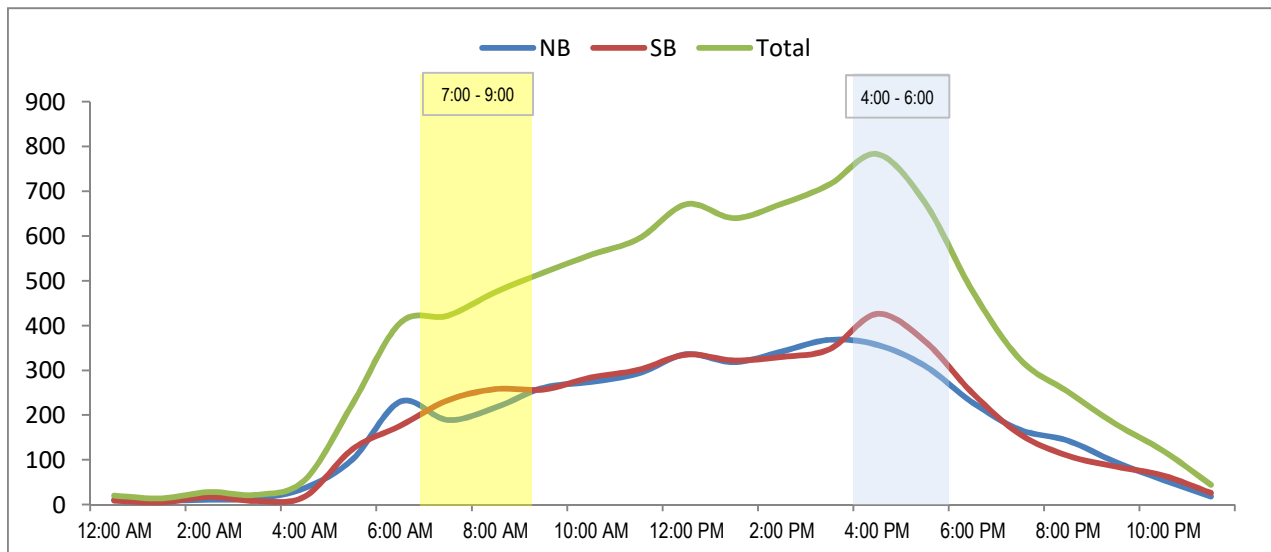
**Analysts:** DASH

**Weather:** Sunny

**AVC Proj. No:** 17-0713

24 Hour Segment Volume					8,890		
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	11	9	20	12:00 PM - 1:00 PM	336	335	671
1:00 AM - 2:00 AM	9	5	14	1:00 PM - 2:00 PM	318	322	640
2:00 AM - 3:00 AM	11	17	28	2:00 PM - 3:00 PM	342	330	672
3:00 AM - 4:00 AM	14	8	22	3:00 PM - 4:00 PM	368	347	715
4:00 AM - 5:00 AM	37	18	55	4:00 PM - 5:00 PM	357	426	783
5:00 AM - 6:00 AM	101	124	225	5:00 PM - 6:00 PM	310	365	675
6:00 AM - 7:00 AM	230	176	406	6:00 PM - 7:00 PM	228	249	477
7:00 AM - 8:00 AM	189	233	422	7:00 PM - 8:00 PM	167	157	324
8:00 AM - 9:00 AM	217	258	475	8:00 PM - 9:00 PM	143	109	252
9:00 AM - 10:00 AM	261	257	518	9:00 PM - 10:00 PM	95	85	180
10:00 AM - 11:00 AM	274	284	558	10:00 PM - 11:00 PM	55	65	120
11:00 AM - 12:00 PM	293	301	594	11:00 PM - 12:00 AM	18	26	44
<b>Total</b>	<b>1,647</b>	<b>1,690</b>	<b>3,337</b>	<b>Total</b>	<b>2,737</b>	<b>2,816</b>	<b>5,553</b>

**24-Hour NB Volume 4,384**      **24-Hour SB Volume 4,506**



# 24 Hour Segment Count

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



**Location:** 3. W Valley Parkway between Centre City Parkway and Quince Street

**Orientation:** North-South

**Date of Count:** Thursday, July 06, 2017

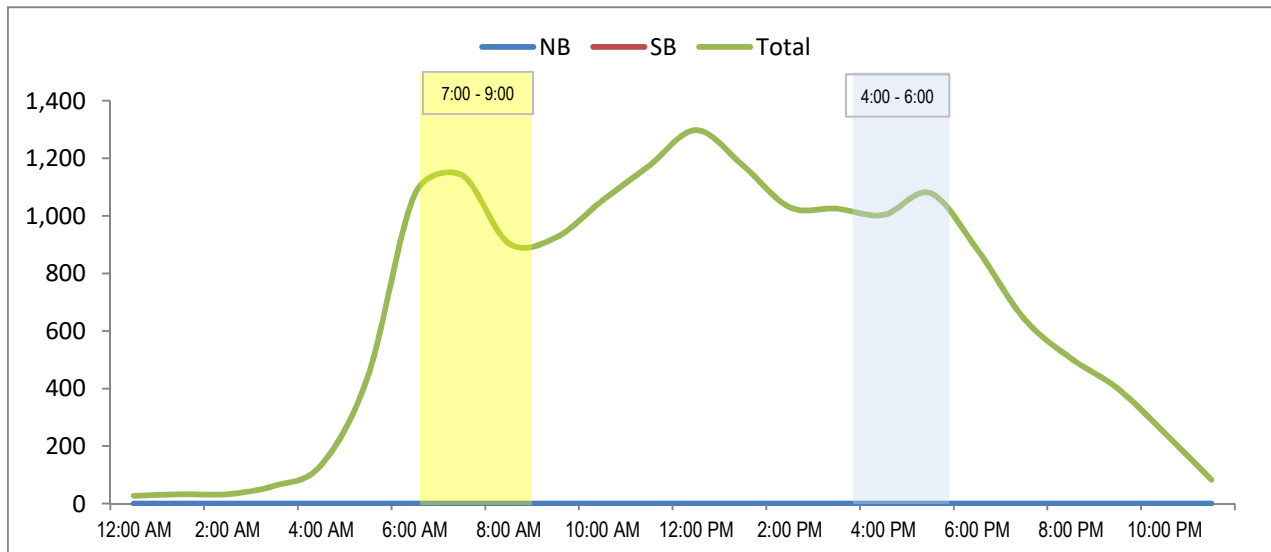
**Analysts:** DASH

**Weather:** Sunny

**AVC Proj. No:** 17-0713

24 Hour Segment Volume					16,379				
Time	Hourly Volume			Time	Hourly Volume				
	NB	SB	Total		NB	SB	Total		
12:00 AM - 1:00 AM	0	27	27	12:00 PM - 1:00 PM	0	1,298	1,298		
1:00 AM - 2:00 AM	0	33	33	1:00 PM - 2:00 PM	0	1,175	1,175		
2:00 AM - 3:00 AM	0	33	33	2:00 PM - 3:00 PM	0	1,030	1,030		
3:00 AM - 4:00 AM	0	62	62	3:00 PM - 4:00 PM	0	1,025	1,025		
4:00 AM - 5:00 AM	0	134	134	4:00 PM - 5:00 PM	0	1,003	1,003		
5:00 AM - 6:00 AM	0	445	445	5:00 PM - 6:00 PM	0	1,079	1,079		
6:00 AM - 7:00 AM	0	1,076	1,076	6:00 PM - 7:00 PM	0	884	884		
7:00 AM - 8:00 AM	0	1,142	1,142	7:00 PM - 8:00 PM	0	643	643		
8:00 AM - 9:00 AM	0	905	905	8:00 PM - 9:00 PM	0	505	505		
9:00 AM - 10:00 AM	0	924	924	9:00 PM - 10:00 PM	0	400	400		
10:00 AM - 11:00 AM	0	1,053	1,053	10:00 PM - 11:00 PM	0	246	246		
11:00 AM - 12:00 PM	0	1,174	1,174	11:00 PM - 12:00 AM	0	83	83		
<b>Total</b>	<b>0</b>	<b>7,008</b>	<b>7,008</b>	<b>Total</b>	<b>0</b>	<b>9,371</b>	<b>9,371</b>		

<b>24-Hour NB Volume</b>	<b>0</b>	<b>24-Hour SB Volume</b>	<b>16,379</b>
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# 24 Hour Segment Count

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



**Location:** 4. W. Valley Parkway Just west of Quince Street

**Orientation:** East-West

**Date of Count:** Thursday, July 06, 2017

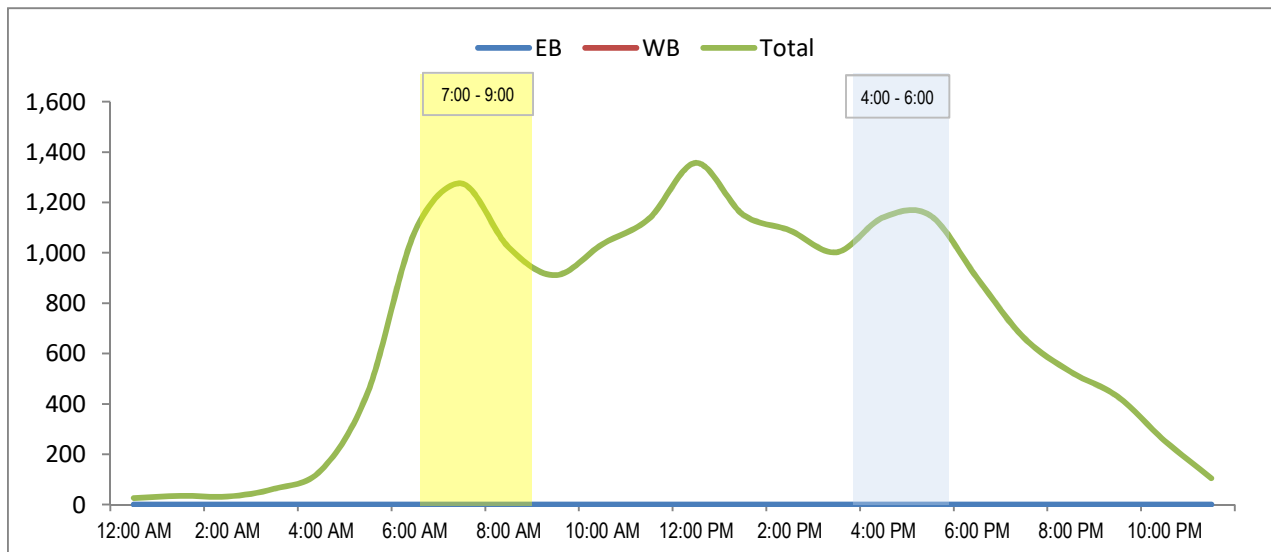
**Analysts:** DASH

**Weather:** Sunny

**AVC Proj. No:** 17-0713






















24 Hour Segment Volume					16,971				
Time	Hourly Volume			Time	Hourly Volume				
	EB	WB	Total		EB	WB	Total		
12:00 AM - 1:00 AM	0	26	26	12:00 PM - 1:00 PM	0	1,357	1,357		
1:00 AM - 2:00 AM	0	35	35	1:00 PM - 2:00 PM	0	1,152	1,152		
2:00 AM - 3:00 AM	0	32	32	2:00 PM - 3:00 PM	0	1,089	1,089		
3:00 AM - 4:00 AM	0	63	63	3:00 PM - 4:00 PM	0	1,002	1,002		
4:00 AM - 5:00 AM	0	137	137	4:00 PM - 5:00 PM	0	1,141	1,141		
5:00 AM - 6:00 AM	0	449	449	5:00 PM - 6:00 PM	0	1,148	1,148		
6:00 AM - 7:00 AM	0	1,085	1,085	6:00 PM - 7:00 PM	0	900	900		
7:00 AM - 8:00 AM	0	1,275	1,275	7:00 PM - 8:00 PM	0	662	662		
8:00 AM - 9:00 AM	0	1,022	1,022	8:00 PM - 9:00 PM	0	527	527		
9:00 AM - 10:00 AM	0	911	911	9:00 PM - 10:00 PM	0	429	429		
10:00 AM - 11:00 AM	0	1,034	1,034	10:00 PM - 11:00 PM	0	254	254		
11:00 AM - 12:00 PM	0	1,136	1,136	11:00 PM - 12:00 AM	0	105	105		
<b>Total</b>	<b>0</b>	<b>7,205</b>	<b>7,205</b>	<b>Total</b>	<b>0</b>	<b>9,766</b>	<b>9,766</b>		























<b>24-Hour EB Volume</b>	<b>0</b>	<b>24-Hour WB Volume</b>	<b>16,971</b>
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












## APPENDIX B




















### PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	299	107	84	724	83	76	110	52	30	216	61
Future Volume (veh/h)	14	299	107	84	724	83	76	110	52	30	216	61
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	325	116	91	787	90	83	120	57	33	235	66
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	920	323	368	1145	131	596	1168	527	678	1351	371
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	630	2572	902	944	3202	366	1074	2373	1070	1203	2745	754
Grp Volume(v), veh/h	15	222	219	91	435	442	83	88	89	33	150	151
Grp Sat Flow(s),veh/h/ln	630	1770	1704	944	1770	1798	1074	1770	1674	1203	1770	1730
Q Serve(g_s), s	1.2	5.5	5.7	4.7	12.5	12.6	2.8	1.6	1.7	0.9	2.8	2.9
Cycle Q Clear(g_c), s	13.8	5.5	5.7	10.4	12.5	12.6	5.7	1.6	1.7	2.6	2.8	2.9
Prop In Lane	1.00		0.53	1.00		0.20	1.00		0.64	1.00		0.44
Lane Grp Cap(c), veh/h	214	633	609	368	633	643	596	871	824	678	871	851
V/C Ratio(X)	0.07	0.35	0.36	0.25	0.69	0.69	0.14	0.10	0.11	0.05	0.17	0.18
Avail Cap(c_a), veh/h	424	1225	1180	684	1225	1245	596	871	824	678	871	851
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	22.3	14.1	14.2	18.0	16.4	16.4	10.1	8.1	8.2	8.9	8.4	8.5
Incr Delay (d2), s/veh	0.1	0.3	0.4	0.3	1.3	1.3	0.5	0.2	0.3	0.1	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.7	2.7	1.2	6.3	6.4	0.9	0.8	0.9	0.3	1.5	1.5
LnGrp Delay(d),s/veh	22.4	14.5	14.5	18.4	17.7	17.7	10.5	8.4	8.4	9.0	8.9	8.9
LnGrp LOS	C	B	B	B	B	B	B	A	A	A	A	A
Approach Vol, veh/h		456			968			260			334	
Approach Delay, s/veh		14.8			17.8			9.1			8.9	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.0		25.9		34.0		25.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		29.5		41.5		29.5		41.5				
Max Q Clear Time (g_c+I1), s		7.7		15.8		4.9		14.6				
Green Ext Time (p_c), s		1.3		2.9		1.9		6.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.5								
HCM 2010 LOS				B								

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	272	85	62	614	70	169	518	33	96	725	135
Future Volume (veh/h)	80	272	85	62	614	70	169	518	33	96	725	135
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	87	296	92	67	667	76	184	563	36	104	788	147
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	700	213	91	800	91	272	1338	599	208	1273	570
Arrive On Green	0.06	0.26	0.26	0.05	0.25	0.25	0.08	0.38	0.38	0.06	0.36	0.36
Sat Flow, veh/h	1774	2673	815	1774	3203	365	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	87	194	194	67	368	375	184	563	36	104	788	147
Grp Sat Flow(s),veh/h/ln	1774	1770	1719	1774	1770	1798	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	3.5	6.6	6.8	2.7	14.3	14.3	3.8	8.5	1.0	2.1	13.3	4.7
Cycle Q Clear(g_c), s	3.5	6.6	6.8	2.7	14.3	14.3	3.8	8.5	1.0	2.1	13.3	4.7
Prop In Lane	1.00		0.47	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	463	450	91	442	449	272	1338	599	208	1273	570
V/C Ratio(X)	0.78	0.42	0.43	0.74	0.83	0.83	0.68	0.42	0.06	0.50	0.62	0.26
Avail Cap(c_a), veh/h	208	537	522	171	501	509	356	1338	599	266	1273	570
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	33.4	22.2	22.3	33.9	25.8	25.8	32.5	16.7	14.3	33.0	19.1	16.4
Incr Delay (d2), s/veh	10.8	0.6	0.7	11.1	10.5	10.4	3.3	1.0	0.2	1.8	2.3	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	2.1	3.3	3.3	1.6	8.2	8.4	1.9	4.3	0.5	1.1	6.9	2.2
LnGrp Delay(d),s/veh	44.3	22.8	22.9	45.0	36.2	36.2	35.7	17.6	14.5	34.8	21.4	17.5
LnGrp LOS	D	C	C	D	D	D	D	B	B	C	C	B
Approach Vol, veh/h		475			810			783			1039	
Approach Delay, s/veh		26.8			36.9			21.7			22.2	
Approach LOS		C			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	8.9	31.9	8.2	23.5	10.2	30.6	9.1	22.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.6	27.4	7.0	22.0	7.5	25.5	8.5	20.5				
Max Q Clear Time (g_c+I1), s	4.1	10.5	4.7	8.8	5.8	15.3	5.5	16.3				
Green Ext Time (p_c), s	0.0	3.6	0.0	1.9	0.1	4.3	0.0	1.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.6									
HCM 2010 LOS			C									


















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	40	1167	54	76	183	0	0	250	164
Future Volume (veh/h)	0	0	0	40	1167	54	76	183	0	0	250	164
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				43	1268	59	83	199	0	0	272	178
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				57	1791	558	108	1867	0	0	846	537
Arrive On Green				0.35	0.35	0.35	0.06	0.53	0.00	0.00	0.41	0.41
Sat Flow, veh/h				162	5083	1583	1774	3632	0	0	2173	1319
Grp Volume(v), veh/h				492	819	59	83	199	0	0	230	220
Grp Sat Flow(s),veh/h/ln				1855	1695	1583	1774	1770	0	0	1770	1630
Q Serve(g_s), s				17.5	15.4	1.9	3.5	2.1	0.0	0.0	6.6	6.9
Cycle Q Clear(g_c), s				17.5	15.4	1.9	3.5	2.1	0.0	0.0	6.6	6.9
Prop In Lane				0.09		1.00	1.00		0.00	0.00		0.81
Lane Grp Cap(c), veh/h				653	1194	558	108	1867	0	0	720	663
V/C Ratio(X)				0.75	0.69	0.11	0.77	0.11	0.00	0.00	0.32	0.33
Avail Cap(c_a), veh/h				780	1426	666	272	1867	0	0	720	663
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.4	20.7	16.3	34.7	8.9	0.0	0.0	15.1	15.2
Incr Delay (d2), s/veh				3.4	1.1	0.1	11.0	0.1	0.0	0.0	1.2	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
%ile BackOfQ(50%),veh/ln				9.5	7.3	0.8	2.0	1.1	0.0	0.0	3.5	3.4
LnGrp Delay(d),s/veh				24.8	21.8	16.4	45.7	9.0	0.0	0.0	16.3	16.6
LnGrp LOS				C	C	B	D	A			B	B
Approach Vol, veh/h					1370			282			450	
Approach Delay, s/veh					22.6			19.8			16.4	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.0			9.0	35.0		30.9				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		39.5			11.5	23.5		31.5				
Max Q Clear Time (g_c+I1), s		4.1			5.5	8.9		19.5				
Green Ext Time (p_c), s		1.3			0.1	2.4		6.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					20.9							
HCM 2010 LOS					C							









































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	239	949	195	135	534	0	0	767	124
Future Volume (veh/h)	0	0	0	239	949	195	135	534	0	0	767	124
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				260	1032	212	147	580	0	0	834	135
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				490	1542	437	228	2139	0	0	1460	236
Arrive On Green				0.28	0.28	0.28	0.07	0.60	0.00	0.00	0.48	0.48
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3144	494
Grp Volume(v), veh/h				260	1032	212	147	580	0	0	484	485
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1776
Q Serve(g_s), s				9.4	12.3	8.4	3.1	5.8	0.0	0.0	14.8	14.8
Cycle Q Clear(g_c), s				9.4	12.3	8.4	3.1	5.8	0.0	0.0	14.8	14.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.28
Lane Grp Cap(c), veh/h				490	1542	437	228	2139	0	0	847	849
V/C Ratio(X)				0.53	0.67	0.49	0.64	0.27	0.00	0.00	0.57	0.57
Avail Cap(c_a), veh/h				601	1893	536	343	2139	0	0	847	849
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.1	24.2	22.8	34.3	7.0	0.0	0.0	14.1	14.1
Incr Delay (d2), s/veh				0.9	0.7	0.8	3.0	0.3	0.0	0.0	2.8	2.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	6.4	3.8	1.6	2.9	0.0	0.0	7.8	7.8
LnGrp Delay(d),s/veh				24.0	24.9	23.6	37.3	7.4	0.0	0.0	16.9	16.9
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1504			727			969	
Approach Delay, s/veh					24.5			13.4			16.9	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.5	40.5		25.3				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			7.5	33.5		25.5				
Max Q Clear Time (g_c+I1), s		7.8			5.1	16.8		14.3				
Green Ext Time (p_c), s		4.5			0.1	6.0		6.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					19.7							
HCM 2010 LOS					B							
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	792	140	76	414	94	99	165	132	76	140	27
Future Volume (veh/h)	49	792	140	76	414	94	99	165	132	76	140	27
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	861	152	83	450	102	108	179	143	83	152	29
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	419	1374	243	249	1312	295	553	765	576	466	1183	221
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	852	3008	531	554	2872	646	1198	1925	1451	1053	2978	556
Grp Volume(v), veh/h	53	507	506	83	276	276	108	164	158	83	89	92
Grp Sat Flow(s),veh/h/ln	852	1770	1769	554	1770	1749	1198	1770	1607	1053	1770	1765
Q Serve(g_s), s	2.6	13.4	13.4	8.3	6.2	6.3	3.9	3.8	4.1	3.5	2.0	2.0
Cycle Q Clear(g_c), s	8.9	13.4	13.4	21.7	6.2	6.3	5.9	3.8	4.1	7.6	2.0	2.0
Prop In Lane	1.00		0.30	1.00		0.37	1.00		0.90	1.00		0.32
Lane Grp Cap(c), veh/h	419	808	808	249	808	799	553	703	638	466	703	701
V/C Ratio(X)	0.13	0.63	0.63	0.33	0.34	0.35	0.20	0.23	0.25	0.18	0.13	0.13
Avail Cap(c_a), veh/h	673	1334	1334	414	1334	1318	553	703	638	466	703	701
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	13.7	12.7	12.7	21.0	10.8	10.8	13.7	12.3	12.4	15.0	11.8	11.8
Incr Delay (d2), s/veh	0.1	0.8	0.8	0.8	0.2	0.3	0.8	0.8	0.9	0.8	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.7	6.7	1.3	3.0	3.0	1.4	2.0	2.0	1.1	1.0	1.1
LnGrp Delay(d),s/veh	13.8	13.6	13.6	21.8	11.0	11.1	14.5	13.1	13.4	15.8	12.2	12.2
LnGrp LOS	B	B	B	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		1066			635			430			264	
Approach Delay, s/veh		13.6			12.4			13.6			13.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		32.7		29.0		32.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		46.5		24.5		46.5				
Max Q Clear Time (g_c+I1), s		7.9		15.4		9.6		23.7				
Green Ext Time (p_c), s		2.1		8.4		1.1		4.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			13.2									
HCM 2010 LOS			B									













Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	766	117	59	352	112	177	880	157	146	530	87
Future Volume (veh/h)	175	766	117	59	352	112	177	880	157	146	530	87
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	190	833	127	64	383	122	192	957	171	159	576	95
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	956	146	86	608	191	279	1186	531	238	1144	512
Arrive On Green	0.13	0.31	0.31	0.05	0.23	0.23	0.08	0.34	0.34	0.07	0.32	0.32
Sat Flow, veh/h	1774	3080	470	1774	2651	834	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	190	479	481	64	254	251	192	957	171	159	576	95
Grp Sat Flow(s),veh/h/ln	1774	1770	1780	1774	1770	1716	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	7.9	19.5	19.5	2.7	9.8	10.0	4.1	18.7	6.1	3.4	10.0	3.3
Cycle Q Clear(g_c), s	7.9	19.5	19.5	2.7	9.8	10.0	4.1	18.7	6.1	3.4	10.0	3.3
Prop In Lane	1.00		0.26	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	549	552	86	406	394	279	1186	531	238	1144	512
V/C Ratio(X)	0.83	0.87	0.87	0.74	0.63	0.64	0.69	0.81	0.32	0.67	0.50	0.19
Avail Cap(c_a), veh/h	277	591	594	121	435	422	398	1186	531	267	1144	512
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	32.3	24.8	24.8	35.7	26.4	26.5	34.0	23.0	18.9	34.6	20.8	18.5
Incr Delay (d2), s/veh	15.7	12.8	12.7	13.8	2.5	2.9	3.0	5.9	1.6	5.4	1.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	11.4	11.4	1.7	5.1	5.1	2.1	10.0	2.9	1.8	5.1	1.6
LnGrp Delay(d),s/veh	48.0	37.6	37.5	49.5	28.9	29.3	37.0	29.0	20.5	39.9	22.4	19.3
LnGrp LOS	D	D	D	D	C	C	D	C	C	D	C	B
Approach Vol, veh/h		1150			569			1320			830	
Approach Delay, s/veh		39.3			31.4			29.0			25.4	
Approach LOS		D			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	9.8	30.0	8.2	28.1	10.7	29.1	14.4	22.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.9	25.5	5.2	25.4	8.8	22.6	11.9	18.7				
Max Q Clear Time (g_c+I1), s	5.4	20.7	4.7	21.5	6.1	12.0	9.9	12.0				
Green Ext Time (p_c), s	0.0	2.9	0.0	2.2	0.2	3.1	0.1	1.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				31.7								
HCM 2010 LOS				C								

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	43	943	98	89	266	0	0	336	131
Future Volume (veh/h)	0	0	0	43	943	98	89	266	0	0	336	131
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				47	1025	107	97	289	0	0	365	142
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				62	1430	450	126	2114	0	0	1170	449
Arrive On Green				0.28	0.28	0.28	0.07	0.60	0.00	0.00	0.47	0.47
Sat Flow, veh/h				216	5026	1583	1774	3632	0	0	2597	960
Grp Volume(v), veh/h				402	670	107	97	289	0	0	256	251
Grp Sat Flow(s),veh/h/ln				1852	1695	1583	1774	1770	0	0	1770	1693
Q Serve(g_s), s				15.1	13.4	3.9	4.1	2.7	0.0	0.0	6.9	7.0
Cycle Q Clear(g_c), s				15.1	13.4	3.9	4.1	2.7	0.0	0.0	6.9	7.0
Prop In Lane				0.12		1.00	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				527	965	450	126	2114	0	0	827	792
V/C Ratio(X)				0.76	0.69	0.24	0.77	0.14	0.00	0.00	0.31	0.32
Avail Cap(c_a), veh/h				620	1135	530	291	2114	0	0	827	792
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.9	24.3	20.9	34.8	6.7	0.0	0.0	12.6	12.7
Incr Delay (d2), s/veh				4.7	1.5	0.3	9.6	0.1	0.0	0.0	1.0	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
%ile BackOfQ(50%),veh/ln				8.4	6.4	1.8	2.3	1.4	0.0	0.0	3.6	3.5
LnGrp Delay(d),s/veh				29.6	25.8	21.2	44.3	6.9	0.0	0.0	13.6	13.7
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1179			386			507	
Approach Delay, s/veh					26.7			16.3			13.7	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.9	40.1		26.2				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			12.5	28.5		25.5				
Max Q Clear Time (g_c+I1), s		4.7			6.1	9.0		17.1				
Green Ext Time (p_c), s		2.1			0.1	3.0		4.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				21.6								
HCM 2010 LOS				C								




















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	161	678	236	166	972	0	0	594	61
Future Volume (veh/h)	0	0	0	161	678	236	166	972	0	0	594	61
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				175	737	257	180	1057	0	0	646	66
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				440	1386	393	273	2222	0	0	1577	161
Arrive On Green				0.25	0.25	0.25	0.08	0.63	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3336	331
Grp Volume(v), veh/h				175	737	257	180	1057	0	0	352	360
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1804
Q Serve(g_s), s				6.0	8.3	10.6	3.7	11.5	0.0	0.0	9.2	9.3
Cycle Q Clear(g_c), s				6.0	8.3	10.6	3.7	11.5	0.0	0.0	9.2	9.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.18
Lane Grp Cap(c), veh/h				440	1386	393	273	2222	0	0	861	878
V/C Ratio(X)				0.40	0.53	0.65	0.66	0.48	0.00	0.00	0.41	0.41
Avail Cap(c_a), veh/h				624	1966	557	499	2222	0	0	861	878
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.7	23.6	24.5	32.4	7.2	0.0	0.0	11.9	11.9
Incr Delay (d2), s/veh				0.6	0.3	1.9	2.7	0.7	0.0	0.0	1.4	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
%ile BackOfQ(50%),veh/ln				3.0	4.3	4.8	1.9	5.8	0.0	0.0	4.8	4.9
LnGrp Delay(d),s/veh				23.3	23.9	26.3	35.1	7.9	0.0	0.0	13.4	13.4
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1169			1237			712	
Approach Delay, s/veh					24.4			11.8			13.4	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			10.3	39.7		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			10.5	30.5		25.5				
Max Q Clear Time (g_c+I1), s		13.5			5.7	11.3		12.6				
Green Ext Time (p_c), s		9.3			0.2	4.4		5.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				16.9								
HCM 2010 LOS				B								
<b>Notes</b>												






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	299	107	86	724	83	76	111	56	30	217	61
Future Volume (veh/h)	14	299	107	86	724	83	76	111	56	30	217	61
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	325	116	93	787	90	83	121	61	33	236	66
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	920	323	369	1146	131	596	1144	546	674	1352	370
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	630	2572	902	944	3202	366	1073	2326	1111	1197	2748	752
Grp Volume(v), veh/h	15	222	219	93	435	442	83	90	92	33	150	152
Grp Sat Flow(s),veh/h/ln	630	1770	1704	944	1770	1798	1073	1770	1667	1197	1770	1730
Q Serve(g_s), s	1.2	5.5	5.7	4.8	12.5	12.6	2.8	1.6	1.8	0.9	2.8	2.9
Cycle Q Clear(g_c), s	13.8	5.5	5.7	10.5	12.5	12.6	5.7	1.6	1.8	2.7	2.8	2.9
Prop In Lane	1.00		0.53	1.00		0.20	1.00		0.67	1.00		0.43
Lane Grp Cap(c), veh/h	214	633	610	369	633	643	596	871	820	674	871	851
V/C Ratio(X)	0.07	0.35	0.36	0.25	0.69	0.69	0.14	0.10	0.11	0.05	0.17	0.18
Avail Cap(c_a), veh/h	424	1225	1179	684	1225	1245	596	871	820	674	871	851
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	22.3	14.1	14.2	18.1	16.4	16.4	10.1	8.2	8.2	8.9	8.5	8.5
Incr Delay (d2), s/veh	0.1	0.3	0.4	0.4	1.3	1.3	0.5	0.2	0.3	0.1	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.7	2.7	1.3	6.3	6.4	0.9	0.9	0.9	0.3	1.5	1.5
LnGrp Delay(d),s/veh	22.4	14.5	14.5	18.4	17.7	17.7	10.6	8.4	8.5	9.0	8.9	8.9
LnGrp LOS	C	B	B	B	B	B	B	A	A	A	A	A
Approach Vol, veh/h		456			970			265			335	
Approach Delay, s/veh		14.8			17.8			9.1			8.9	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.0		26.0		34.0		26.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		29.5		41.5		29.5		41.5				
Max Q Clear Time (g_c+I1), s		7.7		15.8		4.9		14.6				
Green Ext Time (p_c), s		1.3		2.9		1.9		6.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.5								
HCM 2010 LOS				B								























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	272	85	62	614	70	169	518	33	96	725	137
Future Volume (veh/h)	84	272	85	62	614	70	169	518	33	96	725	137
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	91	296	92	67	667	76	184	563	36	104	788	149
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	707	216	90	798	91	272	1334	597	208	1268	567
Arrive On Green	0.07	0.26	0.26	0.05	0.25	0.25	0.08	0.38	0.38	0.06	0.36	0.36
Sat Flow, veh/h	1774	2673	815	1774	3203	365	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	91	194	194	67	368	375	184	563	36	104	788	149
Grp Sat Flow(s),veh/h/ln	1774	1770	1719	1774	1770	1798	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	3.7	6.6	6.8	2.7	14.3	14.4	3.8	8.6	1.1	2.1	13.4	4.8
Cycle Q Clear(g_c), s	3.7	6.6	6.8	2.7	14.3	14.4	3.8	8.6	1.1	2.1	13.4	4.8
Prop In Lane	1.00		0.47	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	117	468	454	90	441	448	272	1334	597	208	1268	567
V/C Ratio(X)	0.78	0.41	0.43	0.74	0.83	0.84	0.68	0.42	0.06	0.50	0.62	0.26
Avail Cap(c_a), veh/h	207	535	520	171	499	507	355	1334	597	265	1268	567
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	33.4	22.1	22.2	34.0	25.9	25.9	32.6	16.8	14.5	33.1	19.3	16.5
Incr Delay (d2), s/veh	10.4	0.6	0.6	11.2	10.6	10.6	3.3	1.0	0.2	1.9	2.3	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	2.1	3.3	3.3	1.6	8.3	8.4	1.9	4.3	0.5	1.1	6.9	2.3
LnGrp Delay(d),s/veh	43.8	22.7	22.8	45.2	36.5	36.5	35.9	17.8	14.6	35.0	21.6	17.7
LnGrp LOS	D	C	C	D	D	D	D	B	B	C	C	B
Approach Vol, veh/h		479			810			783			1041	
Approach Delay, s/veh		26.8			37.2			21.9			22.3	
Approach LOS		C			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	8.9	31.9	8.2	23.7	10.2	30.6	9.3	22.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.6	27.4	7.0	22.0	7.5	25.5	8.5	20.5				
Max Q Clear Time (g_c+I1), s	4.1	10.6	4.7	8.8	5.8	15.4	5.7	16.4				
Green Ext Time (p_c), s	0.0	3.6	0.0	1.9	0.1	4.3	0.0	1.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.8									
HCM 2010 LOS			C									

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↓	↑↑			↑↓	
Traffic Volume (veh/h)	0	0	0	40	1167	59	76	187	0	0	258	169
Future Volume (veh/h)	0	0	0	40	1167	59	76	187	0	0	258	169
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				43	1268	64	83	203	0	0	280	184
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				57	1786	558	108	1866	0	0	844	538
Arrive On Green				0.35	0.35	0.35	0.06	0.53	0.00	0.00	0.41	0.41
Sat Flow, veh/h				162	5083	1583	1774	3632	0	0	2168	1324
Grp Volume(v), veh/h				492	819	64	83	203	0	0	238	226
Grp Sat Flow(s),veh/h/ln				1855	1695	1583	1774	1770	0	0	1770	1629
Q Serve(g_s), s				17.6	15.5	2.0	3.5	2.2	0.0	0.0	6.9	7.2
Cycle Q Clear(g_c), s				17.6	15.5	2.0	3.5	2.2	0.0	0.0	6.9	7.2
Prop In Lane				0.09		1.00	1.00		0.00	0.00		0.81
Lane Grp Cap(c), veh/h				652	1191	558	108	1866	0	0	719	662
V/C Ratio(X)				0.76	0.69	0.11	0.77	0.11	0.00	0.00	0.33	0.34
Avail Cap(c_a), veh/h				777	1421	666	272	1866	0	0	719	662
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.5	20.8	16.4	34.7	8.9	0.0	0.0	15.2	15.3
Incr Delay (d2), s/veh				3.5	1.1	0.1	11.0	0.1	0.0	0.0	1.2	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
%ile BackOfQ(50%),veh/ln				9.5	7.3	0.9	2.0	1.1	0.0	0.0	3.6	3.5
LnGrp Delay(d),s/veh				25.0	21.9	16.5	45.7	9.0	0.0	0.0	16.5	16.7
LnGrp LOS				C	C	B	D	A			B	B
Approach Vol, veh/h					1375			286			464	
Approach Delay, s/veh					22.7			19.6			16.6	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.0			9.0	35.0		30.9				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		39.5			11.5	23.5		31.5				
Max Q Clear Time (g_c+I1), s		4.2			5.5	9.2		19.6				
Green Ext Time (p_c), s		1.4			0.1	2.4		6.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					21.0							
HCM 2010 LOS					C							






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	239	951	195	137	534	0	0	767	124
Future Volume (veh/h)	0	0	0	239	951	195	137	534	0	0	767	124
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				260	1034	212	149	580	0	0	834	135
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				490	1544	437	230	2139	0	0	1457	236
Arrive On Green				0.28	0.28	0.28	0.07	0.60	0.00	0.00	0.48	0.48
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3144	494
Grp Volume(v), veh/h				260	1034	212	149	580	0	0	484	485
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1776
Q Serve(g_s), s				9.4	12.4	8.4	3.2	5.8	0.0	0.0	14.8	14.8
Cycle Q Clear(g_c), s				9.4	12.4	8.4	3.2	5.8	0.0	0.0	14.8	14.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.28
Lane Grp Cap(c), veh/h				490	1544	437	230	2139	0	0	845	848
V/C Ratio(X)				0.53	0.67	0.48	0.65	0.27	0.00	0.00	0.57	0.57
Avail Cap(c_a), veh/h				601	1892	536	343	2139	0	0	845	848
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.1	24.2	22.8	34.3	7.1	0.0	0.0	14.1	14.1
Incr Delay (d2), s/veh				0.9	0.7	0.8	3.0	0.3	0.0	0.0	2.8	2.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	6.4	3.8	1.6	2.9	0.0	0.0	7.8	7.8
LnGrp Delay(d),s/veh				24.0	24.9	23.6	37.3	7.4	0.0	0.0	17.0	16.9
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1506			729			969	
Approach Delay, s/veh					24.5			13.5			16.9	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.5	40.5		25.3				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			7.5	33.5		25.5				
Max Q Clear Time (g_c+I1), s		7.8			5.2	16.8		14.4				
Green Ext Time (p_c), s		4.5			0.1	6.0		6.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					19.7							
HCM 2010 LOS					B							
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	871	154	89	455	103	109	183	148	84	155	30
Future Volume (veh/h)	54	871	154	89	455	103	109	183	148	84	155	30
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	947	167	97	495	112	118	199	161	91	168	33
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	429	1510	266	245	1442	324	490	695	534	398	1079	208
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	810	3009	530	504	2872	646	1177	1909	1465	1017	2962	570
Grp Volume(v), veh/h	59	557	557	97	304	303	118	184	176	91	99	102
Grp Sat Flow(s),veh/h/ln	810	1770	1769	504	1770	1749	1177	1770	1604	1017	1770	1762
Q Serve(g_s), s	3.2	15.4	15.4	11.7	6.9	7.0	5.1	5.0	5.3	4.7	2.5	2.6
Cycle Q Clear(g_c), s	10.2	15.4	15.4	27.1	6.9	7.0	7.7	5.0	5.3	10.0	2.5	2.6
Prop In Lane	1.00		0.30	1.00		0.37	1.00		0.91	1.00		0.32
Lane Grp Cap(c), veh/h	429	888	888	245	888	878	490	644	584	398	644	642
V/C Ratio(X)	0.14	0.63	0.63	0.40	0.34	0.35	0.24	0.29	0.30	0.23	0.15	0.16
Avail Cap(c_a), veh/h	582	1223	1223	340	1223	1209	490	644	584	398	644	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	12.2	12.2	22.0	10.1	10.1	17.0	15.2	15.3	18.8	14.4	14.4
Incr Delay (d2), s/veh	0.1	0.7	0.7	1.0	0.2	0.2	1.2	1.1	1.3	1.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.6	7.6	1.7	3.4	3.4	1.8	2.6	2.5	1.5	1.3	1.4
LnGrp Delay(d),s/veh	13.3	12.9	12.9	23.1	10.3	10.3	18.2	16.3	16.6	20.2	14.9	15.0
LnGrp LOS	B	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		1173			704			478			292	
Approach Delay, s/veh		12.9			12.1			16.9			16.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		38.3		29.0		38.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		46.5		24.5		46.5				
Max Q Clear Time (g_c+I1), s		9.7		17.4		12.0		29.1				
Green Ext Time (p_c), s		2.3		9.5		1.2		4.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.8								
HCM 2010 LOS				B								













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	843	129	65	387	123	195	968	173	161	583	101
Future Volume (veh/h)	196	843	129	65	387	123	195	968	173	161	583	101
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	213	916	140	71	421	134	212	1052	188	175	634	110
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	987	151	91	609	192	297	1151	515	253	1105	495
Arrive On Green	0.14	0.32	0.32	0.05	0.23	0.23	0.09	0.33	0.33	0.07	0.31	0.31
Sat Flow, veh/h	1774	3079	470	1774	2650	835	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	213	526	530	71	280	275	212	1052	188	175	634	110
Grp Sat Flow(s),veh/h/ln	1774	1770	1780	1774	1770	1715	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	9.2	22.6	22.6	3.1	11.3	11.5	4.7	22.4	7.1	3.9	11.8	4.0
Cycle Q Clear(g_c), s	9.2	22.6	22.6	3.1	11.3	11.5	4.7	22.4	7.1	3.9	11.8	4.0
Prop In Lane	1.00		0.26	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	567	570	91	407	394	297	1151	515	253	1105	495
V/C Ratio(X)	0.85	0.93	0.93	0.78	0.69	0.70	0.71	0.91	0.37	0.69	0.57	0.22
Avail Cap(c_a), veh/h	269	573	577	118	422	409	386	1151	515	259	1105	495
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	32.8	25.8	25.8	36.8	27.6	27.7	34.9	25.4	20.3	35.5	22.6	19.9
Incr Delay (d2), s/veh	20.5	21.5	21.5	21.9	4.5	5.0	4.3	12.5	2.0	7.5	2.2	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	5.9	14.4	14.4	2.1	6.0	6.0	2.4	12.8	3.4	2.1	6.1	1.9
LnGrp Delay(d),s/veh	53.3	47.3	47.2	58.7	32.1	32.7	39.1	37.9	22.2	42.9	24.7	21.0
LnGrp LOS	D	D	D	E	C	C	D	D	C	D	C	C
Approach Vol, veh/h		1269			626			1452			919	
Approach Delay, s/veh		48.3			35.3			36.1			27.8	
Approach LOS		D			D			D			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	10.3	30.0	8.5	29.6	11.3	29.0	15.6	22.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.9	25.5	5.2	25.4	8.8	22.6	11.9	18.7				
Max Q Clear Time (g_c+I1), s	5.9	24.4	5.1	24.6	6.7	13.8	11.2	13.5				
Green Ext Time (p_c), s	0.0	0.8	0.0	0.6	0.1	3.1	0.0	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				37.8								
HCM 2010 LOS				D								

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	47	1037	118	98	302	0	0	377	149
Future Volume (veh/h)	0	0	0	47	1037	118	98	302	0	0	377	149
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				51	1127	128	107	328	0	0	410	162
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				63	1491	472	138	2075	0	0	1121	438
Arrive On Green				0.30	0.30	0.30	0.08	0.59	0.00	0.00	0.45	0.45
Sat Flow, veh/h				214	5029	1583	1774	3632	0	0	2582	972
Grp Volume(v), veh/h				442	736	128	107	328	0	0	290	282
Grp Sat Flow(s),veh/h/ln				1852	1695	1583	1774	1770	0	0	1770	1691
Q Serve(g_s), s				17.1	15.1	4.8	4.6	3.3	0.0	0.0	8.4	8.5
Cycle Q Clear(g_c), s				17.1	15.1	4.8	4.6	3.3	0.0	0.0	8.4	8.5
Prop In Lane				0.12		1.00	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				549	1005	472	138	2075	0	0	797	762
V/C Ratio(X)				0.80	0.73	0.27	0.78	0.16	0.00	0.00	0.36	0.37
Avail Cap(c_a), veh/h				606	1109	520	286	2075	0	0	797	762
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.2	24.5	20.8	35.1	7.3	0.0	0.0	14.0	14.1
Incr Delay (d2), s/veh				7.2	2.3	0.3	9.0	0.2	0.0	0.0	1.3	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
%ile BackOfQ(50%),veh/ln				9.8	7.4	2.1	2.6	1.6	0.0	0.0	4.3	4.3
LnGrp Delay(d),s/veh				32.4	26.8	21.1	44.1	7.5	0.0	0.0	15.3	15.4
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1306			435			572	
Approach Delay, s/veh					28.1			16.5			15.4	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			10.5	39.5		27.6				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			12.5	28.5		25.5				
Max Q Clear Time (g_c+I1), s		5.3			6.6	10.5		19.1				
Green Ext Time (p_c), s		2.4			0.1	3.4		4.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					22.8							
HCM 2010 LOS					C							




















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	177	751	260	188	1069	0	0	653	67
Future Volume (veh/h)	0	0	0	177	751	260	188	1069	0	0	653	67
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				192	816	283	204	1162	0	0	710	73
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				467	1471	417	298	2177	0	0	1516	156
Arrive On Green				0.26	0.26	0.26	0.09	0.62	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3334	333
Grp Volume(v), veh/h				192	816	283	204	1162	0	0	387	396
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1804
Q Serve(g_s), s				6.6	9.3	11.9	4.3	13.9	0.0	0.0	11.0	11.1
Cycle Q Clear(g_c), s				6.6	9.3	11.9	4.3	13.9	0.0	0.0	11.0	11.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.18
Lane Grp Cap(c), veh/h				467	1471	417	298	2177	0	0	828	844
V/C Ratio(X)				0.41	0.55	0.68	0.68	0.53	0.00	0.00	0.47	0.47
Avail Cap(c_a), veh/h				612	1926	546	489	2177	0	0	828	844
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.5	23.5	24.4	32.8	8.2	0.0	0.0	13.4	13.4
Incr Delay (d2), s/veh				0.6	0.3	2.2	2.8	0.9	0.0	0.0	1.9	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.3	4.8	5.4	2.1	6.9	0.0	0.0	5.8	5.9
LnGrp Delay(d),s/veh				23.1	23.8	26.7	35.6	9.1	0.0	0.0	15.3	15.3
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1291			1366			783	
Approach Delay, s/veh					24.3			13.1			15.3	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			10.9	39.1		24.0				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			10.5	30.5		25.5				
Max Q Clear Time (g_c+I1), s		15.9			6.3	13.1		13.9				
Green Ext Time (p_c), s		10.3			0.2	4.7		5.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					17.8							
HCM 2010 LOS					B							
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	314	107	92	741	83	76	111	61	30	218	61
Future Volume (veh/h)	14	314	107	92	741	83	76	111	61	30	218	61
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	341	116	100	805	90	83	121	66	33	237	66
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	948	317	367	1167	130	589	1103	568	663	1341	365
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	619	2606	872	931	3210	359	1072	2262	1165	1192	2751	749
Grp Volume(v), veh/h	15	230	227	100	444	451	83	93	94	33	151	152
Grp Sat Flow(s),veh/h/ln	619	1770	1709	931	1770	1799	1072	1770	1657	1192	1770	1730
Q Serve(g_s), s	1.3	5.7	5.9	5.3	12.9	12.9	2.9	1.7	1.9	0.9	2.9	3.0
Cycle Q Clear(g_c), s	14.2	5.7	5.9	11.2	12.9	12.9	5.8	1.7	1.9	2.8	2.9	3.0
Prop In Lane	1.00		0.51	1.00		0.20	1.00		0.70	1.00		0.43
Lane Grp Cap(c), veh/h	212	643	621	367	643	654	589	863	808	663	863	844
V/C Ratio(X)	0.07	0.36	0.37	0.27	0.69	0.69	0.14	0.11	0.12	0.05	0.17	0.18
Avail Cap(c_a), veh/h	412	1214	1172	667	1214	1234	589	863	808	663	863	844
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	22.4	14.1	14.1	18.3	16.3	16.4	10.4	8.4	8.4	9.2	8.7	8.7
Incr Delay (d2), s/veh	0.1	0.3	0.4	0.4	1.3	1.3	0.5	0.3	0.3	0.1	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	2.8	1.4	6.5	6.6	0.9	0.9	0.9	0.3	1.5	1.5
LnGrp Delay(d),s/veh	22.5	14.4	14.5	18.7	17.7	17.7	10.9	8.6	8.7	9.3	9.1	9.2
LnGrp LOS	C	B	B	B	B	B	B	A	A	A	A	A
Approach Vol, veh/h		472			995			270			336	
Approach Delay, s/veh		14.7			17.8			9.3			9.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.0		26.5		34.0		26.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		29.5		41.5		29.5		41.5				
Max Q Clear Time (g_c+I1), s		7.8		16.2		5.0		14.9				
Green Ext Time (p_c), s		1.4		3.0		1.9		7.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	272	85	67	619	119	169	554	34	101	769	156
Future Volume (veh/h)	106	272	85	67	619	119	169	554	34	101	769	156
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	115	296	92	73	673	129	184	602	37	110	836	170
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	769	234	94	765	146	268	1282	573	205	1216	544
Arrive On Green	0.08	0.29	0.29	0.05	0.26	0.26	0.08	0.36	0.36	0.06	0.34	0.34
Sat Flow, veh/h	1774	2673	815	1774	2965	568	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	115	194	194	73	401	401	184	602	37	110	836	170
Grp Sat Flow(s),veh/h/ln	1774	1770	1719	1774	1770	1763	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	4.8	6.6	6.9	3.1	16.5	16.5	3.9	9.9	1.2	2.3	15.4	6.0
Cycle Q Clear(g_c), s	4.8	6.6	6.9	3.1	16.5	16.5	3.9	9.9	1.2	2.3	15.4	6.0
Prop In Lane	1.00		0.47	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	509	494	94	456	455	268	1282	573	205	1216	544
V/C Ratio(X)	0.79	0.38	0.39	0.78	0.88	0.88	0.69	0.47	0.06	0.54	0.69	0.31
Avail Cap(c_a), veh/h	199	515	500	164	479	478	341	1282	573	255	1216	544
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	34.1	21.6	21.6	35.4	26.9	27.0	34.0	18.5	15.8	34.6	21.3	18.3
Incr Delay (d2), s/veh	13.4	0.5	0.5	12.9	16.5	16.7	3.9	1.2	0.2	2.2	3.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.3	3.3	1.8	10.1	10.1	2.0	5.0	0.5	1.2	8.0	2.8
LnGrp Delay(d),s/veh	47.4	22.0	22.2	48.3	43.4	43.7	37.9	19.8	16.0	36.7	24.5	19.7
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	C	B
Approach Vol, veh/h		503			875			823			1116	
Approach Delay, s/veh		27.9			43.9			23.7			25.0	
Approach LOS		C			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	9.0	31.9	8.5	26.3	10.4	30.5	10.7	24.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.6	27.4	7.0	22.0	7.5	25.5	8.5	20.5				
Max Q Clear Time (g_c+I1), s	4.3	11.9	5.1	8.9	5.9	17.4	6.8	18.5				
Green Ext Time (p_c), s	0.0	3.8	0.0	1.9	0.1	3.9	0.0	1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.1									
HCM 2010 LOS			C									













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↓	↑↑			↑↓	
Traffic Volume (veh/h)	0	0	0	40	1212	59	76	188	0	0	255	169
Future Volume (veh/h)	0	0	0	40	1212	59	76	188	0	0	255	169
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				43	1317	64	83	204	0	0	277	184
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				56	1826	568	108	1848	0	0	831	535
Arrive On Green				0.36	0.36	0.36	0.06	0.52	0.00	0.00	0.40	0.40
Sat Flow, veh/h				156	5089	1583	1774	3632	0	0	2159	1331
Grp Volume(v), veh/h				511	849	64	83	204	0	0	236	225
Grp Sat Flow(s),veh/h/ln				1855	1695	1583	1774	1770	0	0	1770	1628
Q Serve(g_s), s				18.4	16.2	2.0	3.5	2.2	0.0	0.0	7.0	7.3
Cycle Q Clear(g_c), s				18.4	16.2	2.0	3.5	2.2	0.0	0.0	7.0	7.3
Prop In Lane				0.08		1.00	1.00		0.00	0.00		0.82
Lane Grp Cap(c), veh/h				666	1216	568	108	1848	0	0	711	654
V/C Ratio(X)				0.77	0.70	0.11	0.77	0.11	0.00	0.00	0.33	0.34
Avail Cap(c_a), veh/h				772	1412	659	270	1848	0	0	711	654
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.5	20.7	16.2	35.0	9.2	0.0	0.0	15.6	15.7
Incr Delay (d2), s/veh				4.0	1.3	0.1	11.0	0.1	0.0	0.0	1.3	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
%ile BackOfQ(50%),veh/ln				10.1	7.8	0.9	2.0	1.1	0.0	0.0	3.7	3.5
LnGrp Delay(d),s/veh				25.5	22.0	16.3	46.0	9.3	0.0	0.0	16.9	17.1
LnGrp LOS				C	C	B	D	A			B	B
Approach Vol, veh/h					1424			287			461	
Approach Delay, s/veh					23.0			19.9			17.0	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.0			9.1	34.9		31.6				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		39.5			11.5	23.5		31.5				
Max Q Clear Time (g_c+I1), s		4.2			5.5	9.3		20.4				
Green Ext Time (p_c), s		1.4			0.1	2.4		6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					21.3							
HCM 2010 LOS					C							










































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	244	1026	205	146	571	0	0	788	153
Future Volume (veh/h)	0	0	0	244	1026	205	146	571	0	0	788	153
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				265	1115	223	159	621	0	0	857	166
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				508	1599	453	241	2109	0	0	1382	268
Arrive On Green				0.29	0.29	0.29	0.07	0.60	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3051	573
Grp Volume(v), veh/h				265	1115	223	159	621	0	0	513	510
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1762
Q Serve(g_s), s				9.6	13.6	8.9	3.4	6.6	0.0	0.0	16.6	16.6
Cycle Q Clear(g_c), s				9.6	13.6	8.9	3.4	6.6	0.0	0.0	16.6	16.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.33
Lane Grp Cap(c), veh/h				508	1599	453	241	2109	0	0	827	823
V/C Ratio(X)				0.52	0.70	0.49	0.66	0.29	0.00	0.00	0.62	0.62
Avail Cap(c_a), veh/h				593	1866	529	338	2109	0	0	827	823
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.9	24.3	22.6	34.6	7.6	0.0	0.0	15.3	15.3
Incr Delay (d2), s/veh				0.8	0.9	0.8	3.1	0.4	0.0	0.0	3.5	3.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.8	7.1	4.0	1.7	3.3	0.0	0.0	8.8	8.7
LnGrp Delay(d),s/veh				23.7	25.3	23.5	37.7	7.9	0.0	0.0	18.7	18.8
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h				1603			780			1023		
Approach Delay, s/veh				24.7			14.0			18.8		
Approach LOS				C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.8	40.2		26.3				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			7.5	33.5		25.5				
Max Q Clear Time (g_c+I1), s		8.6			5.4	18.6		15.6				
Green Ext Time (p_c), s		4.8			0.1	6.0		6.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				20.5								
HCM 2010 LOS				C								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	314	107	92	741	83	76	111	61	30	218	61
Future Volume (veh/h)	14	314	107	92	741	83	76	111	61	30	218	61
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	341	116	100	805	90	83	121	66	33	237	66
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	948	317	367	1167	130	589	1103	568	663	1341	365
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	619	2606	872	931	3210	359	1072	2262	1165	1192	2751	749
Grp Volume(v), veh/h	15	230	227	100	444	451	83	93	94	33	151	152
Grp Sat Flow(s),veh/h/ln	619	1770	1709	931	1770	1799	1072	1770	1657	1192	1770	1730
Q Serve(g_s), s	1.3	5.7	5.9	5.3	12.9	12.9	2.9	1.7	1.9	0.9	2.9	3.0
Cycle Q Clear(g_c), s	14.2	5.7	5.9	11.2	12.9	12.9	5.8	1.7	1.9	2.8	2.9	3.0
Prop In Lane	1.00		0.51	1.00		0.20	1.00		0.70	1.00		0.43
Lane Grp Cap(c), veh/h	212	643	621	367	643	654	589	863	808	663	863	844
V/C Ratio(X)	0.07	0.36	0.37	0.27	0.69	0.69	0.14	0.11	0.12	0.05	0.17	0.18
Avail Cap(c_a), veh/h	412	1214	1172	667	1214	1234	589	863	808	663	863	844
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	22.4	14.1	14.1	18.3	16.3	16.4	10.4	8.4	8.4	9.2	8.7	8.7
Incr Delay (d2), s/veh	0.1	0.3	0.4	0.4	1.3	1.3	0.5	0.3	0.3	0.1	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	2.8	1.4	6.5	6.6	0.9	0.9	0.9	0.3	1.5	1.5
LnGrp Delay(d),s/veh	22.5	14.4	14.5	18.7	17.7	17.7	10.9	8.6	8.7	9.3	9.1	9.2
LnGrp LOS	C	B	B	B	B	B	B	A	A	A	A	A
Approach Vol, veh/h		472			995			270			336	
Approach Delay, s/veh		14.7			17.8			9.3			9.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.0		26.5		34.0		26.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		29.5		41.5		29.5		41.5				
Max Q Clear Time (g_c+I1), s		7.8		16.2		5.0		14.9				
Green Ext Time (p_c), s		1.4		3.0		1.9		7.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	272	85	67	619	119	169	554	34	101	769	156
Future Volume (veh/h)	106	272	85	67	619	119	169	554	34	101	769	156
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	115	296	92	73	673	129	184	602	37	110	836	170
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	769	234	94	765	146	268	1282	573	205	1216	544
Arrive On Green	0.08	0.29	0.29	0.05	0.26	0.26	0.08	0.36	0.36	0.06	0.34	0.34
Sat Flow, veh/h	1774	2673	815	1774	2965	568	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	115	194	194	73	401	401	184	602	37	110	836	170
Grp Sat Flow(s),veh/h/ln	1774	1770	1719	1774	1770	1763	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	4.8	6.6	6.9	3.1	16.5	16.5	3.9	9.9	1.2	2.3	15.4	6.0
Cycle Q Clear(g_c), s	4.8	6.6	6.9	3.1	16.5	16.5	3.9	9.9	1.2	2.3	15.4	6.0
Prop In Lane	1.00		0.47	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	509	494	94	456	455	268	1282	573	205	1216	544
V/C Ratio(X)	0.79	0.38	0.39	0.78	0.88	0.88	0.69	0.47	0.06	0.54	0.69	0.31
Avail Cap(c_a), veh/h	199	515	500	164	479	478	341	1282	573	255	1216	544
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	34.1	21.6	21.6	35.4	26.9	27.0	34.0	18.5	15.8	34.6	21.3	18.3
Incr Delay (d2), s/veh	13.4	0.5	0.5	12.9	16.5	16.7	3.9	1.2	0.2	2.2	3.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.3	3.3	1.8	10.1	10.1	2.0	5.0	0.5	1.2	8.0	2.8
LnGrp Delay(d),s/veh	47.4	22.0	22.2	48.3	43.4	43.7	37.9	19.8	16.0	36.7	24.5	19.7
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	C	B
Approach Vol, veh/h		503			875			823			1116	
Approach Delay, s/veh		27.9			43.9			23.7			25.0	
Approach LOS		C			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	9.0	31.9	8.5	26.3	10.4	30.5	10.7	24.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.6	27.4	7.0	22.0	7.5	25.5	8.5	20.5				
Max Q Clear Time (g_c+I1), s	4.3	11.9	5.1	8.9	5.9	17.4	6.8	18.5				
Green Ext Time (p_c), s	0.0	3.8	0.0	1.9	0.1	3.9	0.0	1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.1									
HCM 2010 LOS			C									

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↓	↑↑			↑↓	
Traffic Volume (veh/h)	0	0	0	40	1212	59	76	188	0	0	255	155
Future Volume (veh/h)	0	0	0	40	1212	59	76	188	0	0	255	155
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				43	1317	64	83	204	0	0	277	168
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				56	1826	568	108	1848	0	0	863	508
Arrive On Green				0.36	0.36	0.36	0.06	0.52	0.00	0.00	0.40	0.40
Sat Flow, veh/h				156	5089	1583	1774	3632	0	0	2239	1264
Grp Volume(v), veh/h				511	849	64	83	204	0	0	227	218
Grp Sat Flow(s),veh/h/ln				1855	1695	1583	1774	1770	0	0	1770	1640
Q Serve(g_s), s				18.4	16.2	2.0	3.5	2.2	0.0	0.0	6.7	6.9
Cycle Q Clear(g_c), s				18.4	16.2	2.0	3.5	2.2	0.0	0.0	6.7	6.9
Prop In Lane				0.08		1.00	1.00		0.00	0.00		0.77
Lane Grp Cap(c), veh/h				666	1216	568	108	1848	0	0	711	659
V/C Ratio(X)				0.77	0.70	0.11	0.77	0.11	0.00	0.00	0.32	0.33
Avail Cap(c_a), veh/h				772	1412	659	270	1848	0	0	711	659
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.5	20.7	16.2	35.0	9.2	0.0	0.0	15.5	15.6
Incr Delay (d2), s/veh				4.0	1.3	0.1	11.0	0.1	0.0	0.0	1.2	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
%ile BackOfQ(50%),veh/ln				10.1	7.8	0.9	2.0	1.1	0.0	0.0	3.4	3.4
LnGrp Delay(d),s/veh				25.5	22.0	16.3	46.0	9.3	0.0	0.0	16.7	16.9
LnGrp LOS				C	C	B	D	A			B	B
Approach Vol, veh/h					1424			287			445	
Approach Delay, s/veh					23.0			19.9			16.8	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.0			9.1	34.9		31.6				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		39.5			11.5	23.5		31.5				
Max Q Clear Time (g_c+I1), s		4.2			5.5	8.9		20.4				
Green Ext Time (p_c), s		1.4			0.1	2.3		6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					21.3							
HCM 2010 LOS					C							




















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	244	1026	205	146	571	0	0	788	153
Future Volume (veh/h)	0	0	0	244	1026	205	146	571	0	0	788	153
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				265	1115	223	159	621	0	0	857	166
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				508	1599	453	241	2109	0	0	1382	268
Arrive On Green				0.29	0.29	0.29	0.07	0.60	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3051	573
Grp Volume(v), veh/h				265	1115	223	159	621	0	0	513	510
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1762
Q Serve(g_s), s				9.6	13.6	8.9	3.4	6.6	0.0	0.0	16.6	16.6
Cycle Q Clear(g_c), s				9.6	13.6	8.9	3.4	6.6	0.0	0.0	16.6	16.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.33
Lane Grp Cap(c), veh/h				508	1599	453	241	2109	0	0	827	823
V/C Ratio(X)				0.52	0.70	0.49	0.66	0.29	0.00	0.00	0.62	0.62
Avail Cap(c_a), veh/h				593	1866	529	338	2109	0	0	827	823
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.9	24.3	22.6	34.6	7.6	0.0	0.0	15.3	15.3
Incr Delay (d2), s/veh				0.8	0.9	0.8	3.1	0.4	0.0	0.0	3.5	3.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.8	7.1	4.0	1.7	3.3	0.0	0.0	8.8	8.7
LnGrp Delay(d),s/veh				23.7	25.3	23.5	37.7	7.9	0.0	0.0	18.7	18.8
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h				1603			780			1023		
Approach Delay, s/veh				24.7			14.0			18.8		
Approach LOS				C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.8	40.2		26.3				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			7.5	33.5		25.5				
Max Q Clear Time (g_c+I1), s		8.6			5.4	18.6		15.6				
Green Ext Time (p_c), s		4.8			0.1	6.0		6.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				20.5								
HCM 2010 LOS				C								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	314	107	94	741	83	76	112	65	30	219	61
Future Volume (veh/h)	14	314	107	94	741	83	76	112	65	30	219	61
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	341	116	102	805	90	83	122	71	33	238	66
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	948	317	367	1168	131	588	1077	590	659	1342	364
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	619	2606	872	931	3210	359	1071	2209	1210	1185	2753	747
Grp Volume(v), veh/h	15	230	227	102	444	451	83	96	97	33	151	153
Grp Sat Flow(s),veh/h/ln	619	1770	1709	931	1770	1799	1071	1770	1649	1185	1770	1731
Q Serve(g_s), s	1.3	5.7	5.9	5.5	12.9	12.9	2.9	1.8	1.9	0.9	2.9	3.0
Cycle Q Clear(g_c), s	14.2	5.7	5.9	11.4	12.9	12.9	5.9	1.8	1.9	2.9	2.9	3.0
Prop In Lane	1.00		0.51	1.00		0.20	1.00		0.73	1.00		0.43
Lane Grp Cap(c), veh/h	212	644	622	367	644	655	588	863	804	659	863	844
V/C Ratio(X)	0.07	0.36	0.37	0.28	0.69	0.69	0.14	0.11	0.12	0.05	0.18	0.18
Avail Cap(c_a), veh/h	412	1214	1172	666	1214	1234	588	863	804	659	863	844
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	22.4	14.1	14.1	18.3	16.3	16.3	10.4	8.4	8.4	9.2	8.7	8.7
Incr Delay (d2), s/veh	0.1	0.3	0.4	0.4	1.3	1.3	0.5	0.3	0.3	0.1	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	2.8	1.4	6.5	6.6	0.9	0.9	0.9	0.3	1.5	1.6
LnGrp Delay(d),s/veh	22.5	14.4	14.5	18.7	17.7	17.7	10.9	8.7	8.7	9.4	9.1	9.2
LnGrp LOS	C	B	B	B	B	B	B	A	A	A	A	A
Approach Vol, veh/h		472			997			276			337	
Approach Delay, s/veh		14.7			17.8			9.4			9.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.0		26.5		34.0		26.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		29.5		41.5		29.5		41.5				
Max Q Clear Time (g_c+I1), s		7.9		16.2		5.0		14.9				
Green Ext Time (p_c), s		1.4		3.0		1.9		7.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	272	85	67	619	119	169	554	34	101	769	158
Future Volume (veh/h)	110	272	85	67	619	119	169	554	34	101	769	158
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	120	296	92	73	673	129	184	602	37	110	836	172
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	776	237	94	763	146	268	1276	571	204	1211	542
Arrive On Green	0.09	0.29	0.29	0.05	0.26	0.26	0.08	0.36	0.36	0.06	0.34	0.34
Sat Flow, veh/h	1774	2673	815	1774	2965	568	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	120	194	194	73	401	401	184	602	37	110	836	172
Grp Sat Flow(s),veh/h/ln	1774	1770	1719	1774	1770	1763	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	5.0	6.6	6.9	3.1	16.6	16.6	4.0	10.0	1.2	2.4	15.5	6.1
Cycle Q Clear(g_c), s	5.0	6.6	6.9	3.1	16.6	16.6	4.0	10.0	1.2	2.4	15.5	6.1
Prop In Lane	1.00		0.47	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	514	499	94	455	454	268	1276	571	204	1211	542
V/C Ratio(X)	0.79	0.38	0.39	0.78	0.88	0.88	0.69	0.47	0.06	0.54	0.69	0.32
Avail Cap(c_a), veh/h	198	514	499	163	477	476	340	1276	571	254	1211	542
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	34.1	21.5	21.6	35.5	27.1	27.1	34.1	18.7	15.9	34.7	21.5	18.4
Incr Delay (d2), s/veh	14.6	0.5	0.5	12.9	16.8	17.0	4.0	1.3	0.2	2.2	3.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.3	3.3	1.9	10.2	10.2	2.0	5.1	0.5	1.2	8.1	2.9
LnGrp Delay(d),s/veh	48.6	22.0	22.1	48.5	43.9	44.1	38.1	20.0	16.1	36.9	24.8	20.0
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	C	B
Approach Vol, veh/h		508			875			823			1118	
Approach Delay, s/veh		28.3			44.4			23.9			25.2	
Approach LOS		C			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	9.0	31.9	8.5	26.6	10.4	30.5	11.0	24.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.6	27.4	7.0	22.0	7.5	25.5	8.5	20.5				
Max Q Clear Time (g_c+I1), s	4.4	12.0	5.1	8.9	6.0	17.5	7.0	18.6				
Green Ext Time (p_c), s	0.0	3.8	0.0	1.9	0.1	3.9	0.0	1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.4									
HCM 2010 LOS			C									













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↓	↑↑			↑↓	
Traffic Volume (veh/h)	0	0	0	40	1212	64	76	192	0	0	263	160
Future Volume (veh/h)	0	0	0	40	1212	64	76	192	0	0	263	160
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				43	1317	70	83	209	0	0	286	174
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				56	1821	569	108	1847	0	0	861	509
Arrive On Green				0.36	0.36	0.36	0.06	0.52	0.00	0.00	0.40	0.40
Sat Flow, veh/h				156	5089	1583	1774	3632	0	0	2235	1267
Grp Volume(v), veh/h				511	849	70	83	209	0	0	235	225
Grp Sat Flow(s),veh/h/ln				1855	1695	1583	1774	1770	0	0	1770	1639
Q Serve(g_s), s				18.5	16.2	2.2	3.5	2.3	0.0	0.0	6.9	7.2
Cycle Q Clear(g_c), s				18.5	16.2	2.2	3.5	2.3	0.0	0.0	6.9	7.2
Prop In Lane				0.08		1.00	1.00		0.00	0.00		0.77
Lane Grp Cap(c), veh/h				664	1213	569	108	1847	0	0	711	659
V/C Ratio(X)				0.77	0.70	0.12	0.77	0.11	0.00	0.00	0.33	0.34
Avail Cap(c_a), veh/h				770	1407	659	270	1847	0	0	711	659
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.5	20.8	16.3	35.0	9.2	0.0	0.0	15.6	15.7
Incr Delay (d2), s/veh				4.1	1.3	0.1	11.0	0.1	0.0	0.0	1.2	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
%ile BackOfQ(50%),veh/ln				10.1	7.8	1.0	2.0	1.1	0.0	0.0	3.6	3.5
LnGrp Delay(d),s/veh				25.6	22.1	16.4	46.0	9.3	0.0	0.0	16.9	17.1
LnGrp LOS				C	C	B	D	A			B	B
Approach Vol, veh/h					1430			292			460	
Approach Delay, s/veh					23.1			19.7			17.0	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.0			9.1	34.9		31.7				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		39.5			11.5	23.5		31.5				
Max Q Clear Time (g_c+I1), s		4.3			5.5	9.2		20.5				
Green Ext Time (p_c), s		1.4			0.1	2.4		6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					21.4							
HCM 2010 LOS					C							






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	244	1028	205	148	571	0	0	788	153
Future Volume (veh/h)	0	0	0	244	1028	205	148	571	0	0	788	153
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				265	1117	223	161	621	0	0	857	166
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				508	1600	453	243	2109	0	0	1379	267
Arrive On Green				0.29	0.29	0.29	0.07	0.60	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3051	573
Grp Volume(v), veh/h				265	1117	223	161	621	0	0	513	510
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1762
Q Serve(g_s), s				9.6	13.6	8.9	3.5	6.6	0.0	0.0	16.6	16.6
Cycle Q Clear(g_c), s				9.6	13.6	8.9	3.5	6.6	0.0	0.0	16.6	16.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.33
Lane Grp Cap(c), veh/h				508	1600	453	243	2109	0	0	825	821
V/C Ratio(X)				0.52	0.70	0.49	0.66	0.29	0.00	0.00	0.62	0.62
Avail Cap(c_a), veh/h				592	1866	529	338	2109	0	0	825	821
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.9	24.3	22.6	34.6	7.6	0.0	0.0	15.3	15.3
Incr Delay (d2), s/veh				0.8	1.0	0.8	3.1	0.4	0.0	0.0	3.5	3.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.8	7.1	4.0	1.8	3.3	0.0	0.0	8.9	8.9
LnGrp Delay(d),s/veh				23.7	25.3	23.5	37.7	7.9	0.0	0.0	18.8	18.8
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1605			782			1023	
Approach Delay, s/veh					24.8			14.0			18.8	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.9	40.1		26.4				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			7.5	33.5		25.5				
Max Q Clear Time (g_c+I1), s		8.6			5.5	18.6		15.6				
Green Ext Time (p_c), s		4.8			0.1	6.0		6.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					20.5							
HCM 2010 LOS					C							
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	889	154	96	471	103	109	185	156	84	156	30
Future Volume (veh/h)	54	889	154	96	471	103	109	185	156	84	156	30
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	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	966	167	104	512	112	118	201	170	91	170	33
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	1555	269	246	1490	324	474	663	532	378	1053	200
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	797	3019	521	495	2892	630	1174	1869	1499	1007	2968	565
Grp Volume(v), veh/h	59	566	567	104	312	312	118	190	181	91	100	103
Grp Sat Flow(s),veh/h/ln	797	1770	1771	495	1770	1752	1174	1770	1598	1007	1770	1763
Q Serve(g_s), s	3.3	15.8	15.8	13.1	7.2	7.2	5.3	5.4	5.7	5.0	2.7	2.8
Cycle Q Clear(g_c), s	10.5	15.8	15.8	28.9	7.2	7.2	8.1	5.4	5.7	10.7	2.7	2.8
Prop In Lane	1.00		0.29	1.00		0.36	1.00		0.94	1.00		0.32
Lane Grp Cap(c), veh/h	431	912	912	246	912	902	474	628	567	378	628	625
V/C Ratio(X)	0.14	0.62	0.62	0.42	0.34	0.35	0.25	0.30	0.32	0.24	0.16	0.16
Avail Cap(c_a), veh/h	557	1191	1192	324	1191	1179	474	628	567	378	628	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	11.9	11.9	22.3	9.9	9.9	18.0	16.1	16.2	20.1	15.2	15.3
Incr Delay (d2), s/veh	0.1	0.7	0.7	1.2	0.2	0.2	1.3	1.2	1.5	1.5	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.7	7.7	1.9	3.5	3.5	1.9	2.8	2.8	1.5	1.4	1.4
LnGrp Delay(d),s/veh	13.1	12.6	12.6	23.4	10.1	10.1	19.3	17.4	17.7	21.6	15.8	15.8
LnGrp LOS	B	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		1192			728			489			294	
Approach Delay, s/veh		12.7			12.0			18.0			17.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		40.1		29.0		40.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		46.5		24.5		46.5				
Max Q Clear Time (g_c+I1), s		10.1		17.8		12.7		30.9				
Green Ext Time (p_c), s		2.3		9.7		1.2		4.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.0								
HCM 2010 LOS				B								

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	843	129	66	392	174	195	1023	177	180	621	120
Future Volume (veh/h)	223	843	129	66	392	174	195	1023	177	180	621	120
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	242	916	140	72	426	189	212	1112	192	196	675	130
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	985	150	92	528	232	297	1148	513	258	1108	495
Arrive On Green	0.15	0.32	0.32	0.05	0.22	0.22	0.09	0.32	0.32	0.08	0.31	0.31
Sat Flow, veh/h	1774	3079	470	1774	2395	1052	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	242	526	530	72	314	301	212	1112	192	196	675	130
Grp Sat Flow(s),veh/h/ln	1774	1770	1780	1774	1770	1677	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	10.5	22.6	22.7	3.2	13.2	13.4	4.7	24.3	7.3	4.4	12.7	4.8
Cycle Q Clear(g_c), s	10.5	22.6	22.7	3.2	13.2	13.4	4.7	24.3	7.3	4.4	12.7	4.8
Prop In Lane	1.00		0.26	1.00		0.63	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	566	569	92	390	370	297	1148	513	258	1108	495
V/C Ratio(X)	0.90	0.93	0.93	0.78	0.80	0.81	0.71	0.97	0.37	0.76	0.61	0.26
Avail Cap(c_a), veh/h	268	572	575	117	421	399	385	1148	513	258	1108	495
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	32.8	25.9	25.9	36.8	29.0	29.1	35.0	26.2	20.4	35.7	22.9	20.2
Incr Delay (d2), s/veh	30.7	21.9	21.8	22.4	10.2	11.6	4.3	20.1	2.1	12.3	2.5	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	7.5	14.4	14.5	2.1	7.6	7.4	2.4	15.1	3.5	2.5	6.6	2.3
LnGrp Delay(d),s/veh	63.5	47.7	47.7	59.3	39.2	40.7	39.3	46.3	22.5	47.9	25.4	21.5
LnGrp LOS	E	D	D	E	D	D	D	D	C	D	C	C
Approach Vol, veh/h		1298			687			1516			1001	
Approach Delay, s/veh		50.7			42.0			42.3			29.3	
Approach LOS		D			D			D			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	10.4	30.0	8.6	29.7	11.3	29.1	16.4	21.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.9	25.5	5.2	25.4	8.8	22.6	11.9	18.7				
Max Q Clear Time (g_c+I1), s	6.4	26.3	5.2	24.7	6.7	14.7	12.5	15.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.1	3.1	0.0	1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			41.8									
HCM 2010 LOS			D									

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	40	1212	64	76	192	0	0	263	174
Future Volume (veh/h)	0	0	0	40	1212	64	76	192	0	0	263	174
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				43	1317	70	83	209	0	0	286	189
Adj No. of Lanes				0	3	1	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				56	1821	569	108	1847	0	0	831	534
Arrive On Green				0.36	0.36	0.36	0.06	0.52	0.00	0.00	0.40	0.40
Sat Flow, veh/h				156	5089	1583	1774	3632	0	0	2162	1329
Grp Volume(v), veh/h				511	849	70	83	209	0	0	243	232
Grp Sat Flow(s),veh/h/ln				1855	1695	1583	1774	1770	0	0	1770	1628
Q Serve(g_s), s				18.5	16.2	2.2	3.5	2.3	0.0	0.0	7.2	7.5
Cycle Q Clear(g_c), s				18.5	16.2	2.2	3.5	2.3	0.0	0.0	7.2	7.5
Prop In Lane				0.08		1.00	1.00		0.00	0.00		0.82
Lane Grp Cap(c), veh/h				664	1213	569	108	1847	0	0	711	654
V/C Ratio(X)				0.77	0.70	0.12	0.77	0.11	0.00	0.00	0.34	0.35
Avail Cap(c_a), veh/h				770	1407	659	270	1847	0	0	711	654
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.5	20.8	16.3	35.0	9.2	0.0	0.0	15.7	15.8
Incr Delay (d2), s/veh				4.1	1.3	0.1	11.0	0.1	0.0	0.0	1.3	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.1	7.8	1.0	2.0	1.1	0.0	0.0	3.8	3.6
LnGrp Delay(d),s/veh				25.6	22.1	16.4	46.0	9.3	0.0	0.0	17.0	17.3
LnGrp LOS				C	C	B	D	A			B	B
Approach Vol, veh/h					1430			292			475	
Approach Delay, s/veh					23.1			19.7			17.1	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.0			9.1	34.9		31.7				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		39.5			11.5	23.5		31.5				
Max Q Clear Time (g_c+I1), s		4.3			5.5	9.5		20.5				
Green Ext Time (p_c), s		1.4			0.1	2.5		6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					21.4							
HCM 2010 LOS					C							

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	182	810	265	194	1128	0	0	671	87
Future Volume (veh/h)	0	0	0	182	810	265	194	1128	0	0	671	87
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				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	0	0	1863	1900
Adj Flow Rate, veh/h				198	880	288	211	1226	0	0	729	95
Adj No. of Lanes				1	3	1	2	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				476	1499	425	305	2162	0	0	1455	189
Arrive On Green				0.27	0.27	0.27	0.09	0.61	0.00	0.00	0.46	0.46
Sat Flow, veh/h				1774	5588	1583	3442	3632	0	0	3243	410
Grp Volume(v), veh/h				198	880	288	211	1226	0	0	409	415
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1770	0	0	1770	1790
Q Serve(g_s), s				6.8	10.2	12.1	4.4	15.4	0.0	0.0	12.1	12.1
Cycle Q Clear(g_c), s				6.8	10.2	12.1	4.4	15.4	0.0	0.0	12.1	12.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.23
Lane Grp Cap(c), veh/h				476	1499	425	305	2162	0	0	817	827
V/C Ratio(X)				0.42	0.59	0.68	0.69	0.57	0.00	0.00	0.50	0.50
Avail Cap(c_a), veh/h				607	1913	542	485	2162	0	0	817	827
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.4	23.7	24.4	33.0	8.6	0.0	0.0	14.0	14.0
Incr Delay (d2), s/veh				0.6	0.4	2.3	2.8	1.1	0.0	0.0	2.2	2.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.4	5.3	5.6	2.2	7.6	0.0	0.0	6.3	6.4
LnGrp Delay(d),s/veh				23.0	24.0	26.7	35.8	9.7	0.0	0.0	16.2	16.2
LnGrp LOS				C	C	C	D	A			B	B
Approach Vol, veh/h					1366			1437			824	
Approach Delay, s/veh					24.4			13.5			16.2	
Approach LOS					C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			11.1	38.9		24.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		45.5			10.5	30.5		25.5				
Max Q Clear Time (g_c+I1), s		17.4			6.4	14.1		14.1				
Green Ext Time (p_c), s		10.9			0.2	4.9		5.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					18.3							
HCM 2010 LOS					B							
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

## APPENDIX C

### CITY OF ESCONDIDO ROADWAY CLASSIFICATION TABLE

Table

CITY OF ESCONDIDO PROPOSED LEVEL OF SERVICE STANDARDS

STREET SEGMENT AVERAGE DAILY VEHICLE TRIP THRESHOLDS

Street Classification	Lanes	Cross Sections	Level of Service				
			A	B	C	D	E
Prime Arterial	(8lanes)	116/136 (NP)	23,800	37,800	51,800	62,300	70,000
	(6lanes)	106/126 (NP)	20,400	32,400	44,400	53,400	60,000
Major Road	(6lanes)	90/110 (NP)	17,000	27,000	37,000	44,500	50,000
	(4lanes)	82/102 (NP)	12,600	20,000	27,400	32,900	37,000
Collector	(4lanes)	64/84 (NP)	11,600	18,500	25,300	30,400	34,200
	(4lanes)	(WP)	6,800	10,800	14,800	17,800	20,000
Local Collector	(2lanes)	42/66 (NP)	5,100	8,100	11,100	13,400	15,000
		(WP)	3,400	5,400	7,400	8,900	10,000
Rural collector	(2lanes)						

(NP) No Parking  
(WP) With Parking

The following V/C Ratios were utilized for determining Existing and Future Level of Service.

Level of Service	Volume/Capacity (V/C) Ratio
A-	Less than or Equal to 0.00 to 0.34
B-	Less than or Equal to 0.35 to 0.54
C-	Less than or Equal to 0.55 to 0.74
D-	Less than or Equal to 0.75 to 0.89
E-	Less than or Equal to 0.90 to 1.00

v/c 0.74

## APPENDIX D

### CUMULATIVE PROJECTS TRAFFIC DATA



## Jose Nunez

**From:** Miriam Jim <mjim@escondido.org>  
**Sent:** Wednesday, August 02, 2017 10:48 AM  
**To:** Jose Nunez  
**Cc:** John A. Boarman  
**Subject:** RE: Quince Street Senior Center Project

Hi Jose,

Here is the cumulative project list:

Cumulative Project List					
	Project	Location	Land Use	Size	Unit
1	Centerpoint 78 Commercial Project	990 N Broadway	Supermarket	43.5	TSF
			Fast-Food Restaurant	3.2	TSF
2	Latitude II	Northeast quad. Of Washington/CCP	Condominiums	112	DU
3	Escondido Gateway Mixed-Use	700 W. Grand Ave	Apartments	126	DU
			Convenience Market	1	TSF
4	City Plaza	328 S. Escondido Blvd	Apartments	55	DU
			Specialty Retail	5.198	TSF
			Office	4.158	TSF
5	Hote La Terraza	300 La Terraza Blvd	Hotel	105	rooms
6	La Terraza Office	300 La Terraza Blvd	Office	36.614	TSF
7	Centre City Shopping Center	Southeast quad. of Centre City Pkwy/Mission Ave	Fast-Food With Drive-Thru	4.878	TSF
			Fast-Food Without Drive-Thru	2.4	TSF
			Specialty Retail	4.5	TSF
			Automatic Car Wash	4.308	TSF
8	TouchStone Project	137 West Valley Pkwy	Residential	106	DU
		343 East 2nd Ave	Specialty Retail	4.8	TSF
9	Starbucks Drive-through	Signature Pavilion	Fast-Food With Drive-Thru	1.9	TSF
		350 W. Valley Pkwy			

Thanks,  
Miriam

**Miriam W. Jim, P.E., T.E.**

Direct: (760) 839-4596

Email: [mjim@escondido.org](mailto:mjim@escondido.org)

---

**From:** Jose Nunez [<mailto:nunez@llgengineers.com>]

**Sent:** Thursday, July 27, 2017 8:07 AM

**To:** Miriam Jim <[mjim@escondido.org](mailto:mjim@escondido.org)>

**Cc:** John A. Boarman <[boarman@llgengineers.com](mailto:boarman@llgengineers.com)>

**Subject:** FW: Quince Street Senior Center Project

Miriam,

Just wanted to follow up with you on our Quince Street Senior Project and if we could obtain any Cumulative Project traffic data from you by tomorrow, Friday July 27th.



transportation planning • traffic engineering  
acoustical engineering • parking studies

December 9, 2013

Mr. Homi Namdari  
CITY OF ESCONDIDO  
201 North Broadway  
Escondido, CA 92025-2798

**Subject: SCOPING AGREEMENT FOR TRAFFIC IMPACT ANALYSIS (Revised 12/9/13)**

Dear Mr. Namdari:

RK ENGINEERING GROUP, INC. (RK) is pleased to provide the following Scoping Agreement for the Centerpointe 78 Traffic Impact Analysis. Please review and sign this document to indicate your approval of the scope of work.

**1. Project Overview**

- Project Name: Centerpointe 78
- Project Address: 990 North Broadway, City of Escondido (SWC of North Broadway and Lincoln Avenue)
- Project Description: 43,500 sq. ft. Supermarket and 3,200 sq. ft. Fast Food Restaurant With Drive-Thru

**2. Project Trip Generation**

- SANDAG (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region
- SANDAG suggested Pass-By for [undiverted and diverted < 1 miles] trip reductions only during PM peak period.

Vehicular Traffic Generation Rates				
Land Use	Quantity	Driveway Vehicle Trip Rate	Peak Hour Ratios	
			AM (in:out)	PM (in:out)
Supermarket	43.500	150 Trips/TSF	4% (7:3)	10% (5:5)
Fast Food Restaurant (With Drive-Thru)	3.200	650 Trips/TSF	7% (5:5)	7% (5:5)

4000 westerly place, suite 280  
newport beach, california 92660  
tel 949.474.0809 fax 949.474.0902  
<http://www.rkengineer.com>

Pass-By Reductions <sup>3</sup>	
Supermarket	40%
Fast Food Restaurant	40%

Project Trip Generation										
Land Use	Qty.	Units	Peak Hour						Daily	
			AM			PM				
			In	Out	Total	In	Out	Total		
1 Supermarket	43.500	TSF	183	78	261	326	327	653	6,525	
	40% Pass-By Trip Reduction <sup>2</sup>		n/a	n/a	n/a	-130	-131	-261	n/a	
	Net Total Supermarket		183	78	261	196	196	392	6,525	
2 Fast Food Restaurant (With Drive-Thru)	3.200	TSF	73	73	146	73	73	146	2,080	
	40% Pass-By Trip Reduction <sup>2</sup>		n/a	n/a	n/a	-29	-29	-58	n/a	
	Net Total Fast Food		73	73	146	44	44	88	6,525	
<b>Full Project Trip Generation</b>			<b>256</b>	<b>151</b>	<b>407</b>	<b>399</b>	<b>400</b>	<b>799</b>	<b>8,605</b>	
<b>Net Total (With Pass-By Trip Reduction)</b>			<b>256</b>	<b>151</b>	<b>407</b>	<b>240</b>	<b>240</b>	<b>480</b>	<b>8,605</b>	

### 3. Trip Distribution and Assignment

- SANDAG Series 12 Select Zone Assignment
- Project traffic will be determined based on the Select Zone Assignment percent distribution and the project trip generation for the AM Peak Hour, PM Peak Hour and Daily conditions.

#### 4. Study Area

The following study area is based on the latest City of Escondido Traffic Impact Analysis Requirement Guidelines:

- 23 Study Area Roadway Segments (see attached Table)
- 16 Study Area Intersections (see attached Table)
- 2 Caltrans Mainline Freeway Segments (see attached Table)

#### 5. Traffic Counts

Please see the attached table for a detailed list of count locations and times. All traffic counts are taken during normal non-holiday weekday conditions (Tuesday – Thursday) during clear weather and while schools are in regular session.

- 24 Hour 2-Way ADT counts will be taken at the 23 study area roadway segments.
  - Thirteen (13) roadway segment ADTs will be used from data collected on June 6, 2013.
  - Ten (10) additional roadway segment ADTs will be collected.
- Morning (7AM to 9AM) and Evening (4PM to 6PM) peak hour turning movement counts will be taken at all 16 study area intersections.
  - Twelve (12) intersection morning and evening counts will be used from data collected on June 6, 2013
  - Four (4) additional intersection morning and evening counts will be collected.
- Mid-Day intersection turning movement counts will be taken at all study area intersections.
  - Eight (8) new intersection mid-day (2PM-4PM) counts will be collected.
  - Eight (8) new intersection mid-day (12PM-2PM) counts will be collected at all other intersection locations.
- Pedestrian Counts (7AM-9AM, 12:30PM-2:30PM/2PM-4PM and 4PM-6PM) will be taken at nine (9) locations.
  - Four (4) pedestrian morning and evening count locations will be used from data collected on June 6, 2013
  - Five (5) additional pedestrian morning and evening count locations will be collected.
  - Eight (8) new pedestrian mid-day count locations will be collected.
  - One (1) mid-block pedestrian count will be used from June 6, 2013.

## 6. Analysis Scenarios

- Existing: (AM, Mid-Day, PM, Daily)
- Existing + Project: (AM, Mid-Day, PM, Daily)
- Project Opening Year (2016) + Cumulative Projects; (AM, Mid-Day, PM, Daily)
- Project Opening Year (2016) + Cumulative Projects + Project (AM, Mid-Day, PM, Daily)
- Horizon Year (2035): (AM, PM, Daily)
- Horizon Year (2035) + Project: (AM, PM, Daily)

To assess Project Opening Year (2016) conditions, a 1% per year compound annual growth rate will be added to existing traffic volumes plus added traffic from cumulative projects. For Mid-Day analysis, the worst case PM peak hour project trip generation will be used.

Cumulative projects should be provided by the City of Escondido and would include all approved or reasonably foreseeable pending projects that are expected to influence the study area. Copies of traffic studies for the cumulative projects should be provided. If data is not available for near-term projects, an ambient growth factor should be agreed upon by the City.

## 7. Level of Service Standards and Significant Impact Criteria

- City of Escondido Traffic Impact Analysis Requirement Guidelines (October 10, 2013)

## 8. Analysis Methodology

- Highway Capacity Manual 2010 (HCM) for intersections and freeway segments
- Volume to Capacity (V/C) ratio analysis will be used for roadway segments

## 9. Additional Items to be Addressed

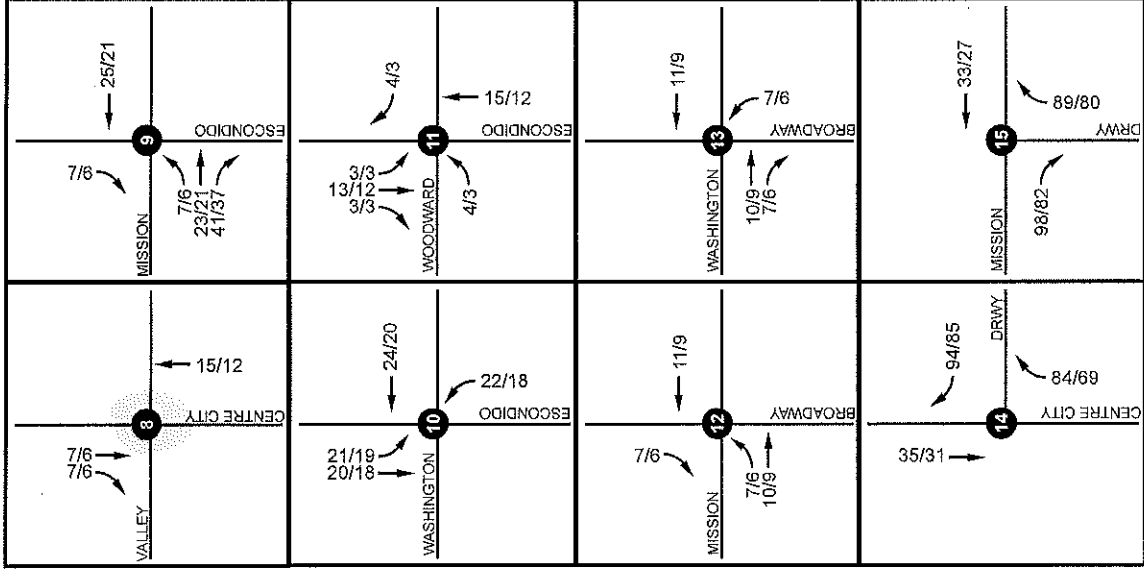
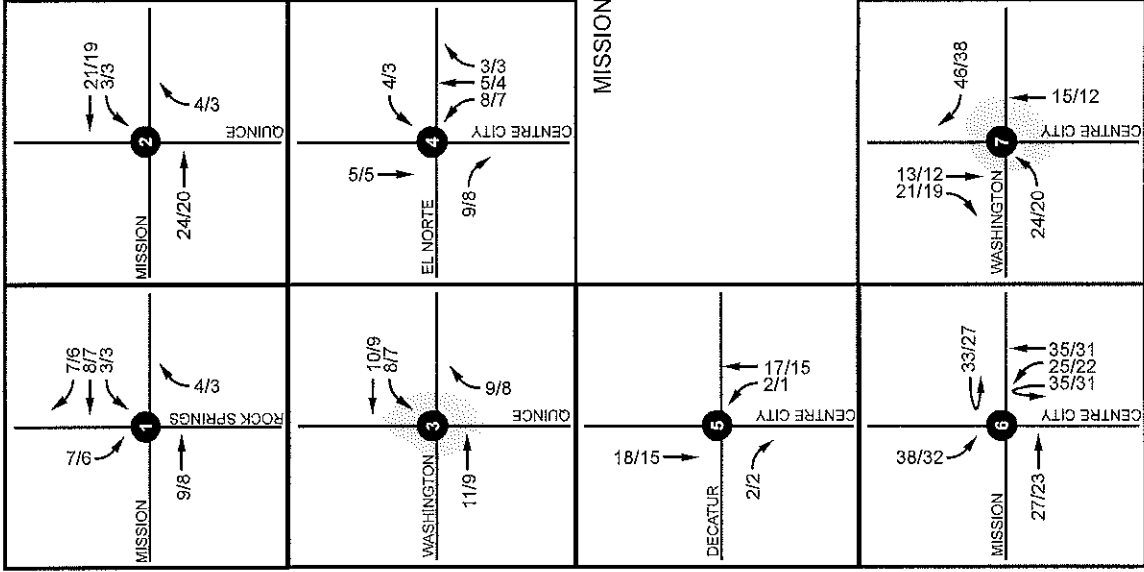
- Review project access with regards to sight distance and circulation, and determine the need for any special turn lanes that might be required to serve the project.
- Review internal circulation and drive-thru queuing.
- Develop mitigation measures (i.e. traffic signals, additional lanes, etc.) that may be required to accommodate the project.
- The traffic impact study will be reviewed and signed by a California Registered Traffic Engineer.

Please find attached a location map and table of the study area roadway segments and intersections. Please sign and return a copy of this scoping agreement upon your approval. If you have any questions please call us at (949)474-0809.

Approved  
By:

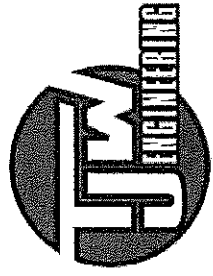
 12/6/13  
\_\_\_\_\_  
Consultant's Representative      Date

\_\_\_\_\_  
City of Escondido Representative      Date

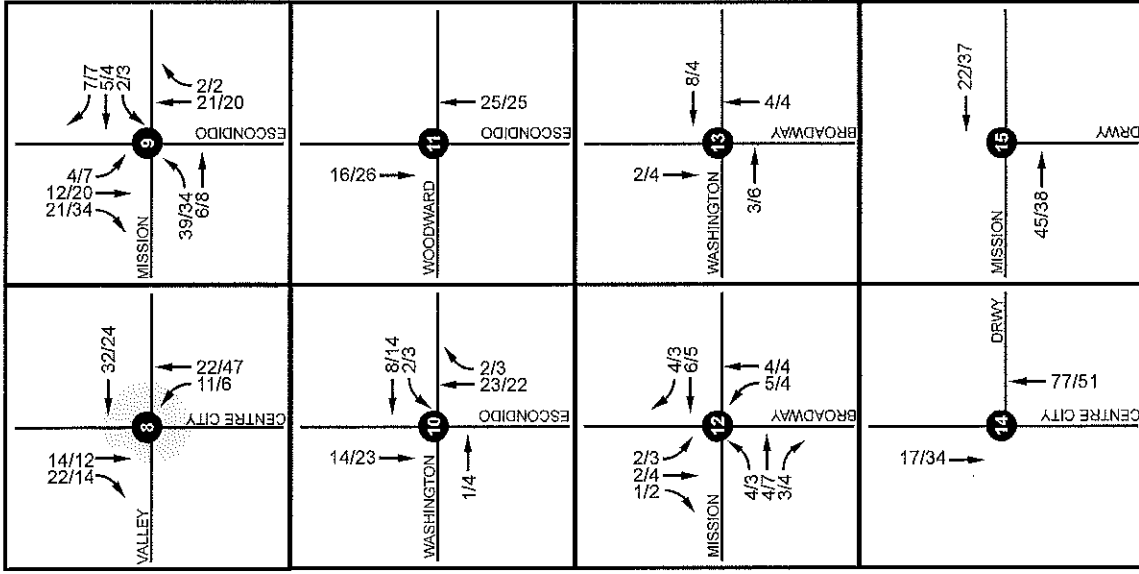
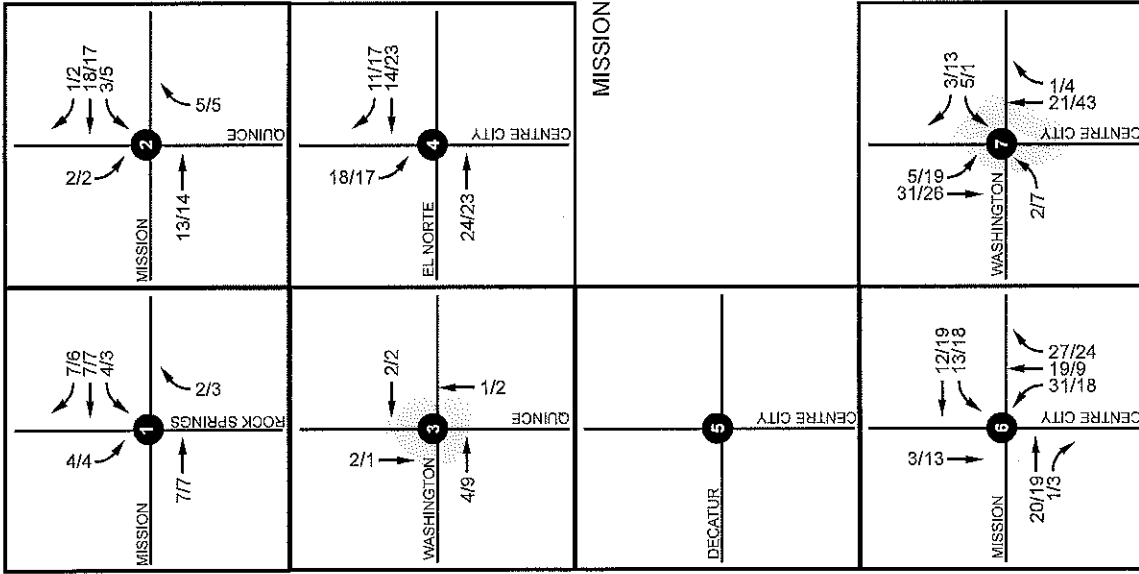


# Exhibit 6A: AM-Midday & PM Peak Hour Trip Assignment

ONP-16-002 Centre City Shopping Center TIA

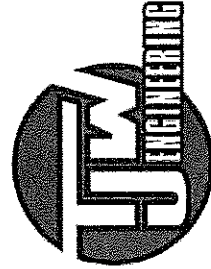


Not to Scale



# Exhibit 8: Cumulative Project AM/PM Peak Hour and Daily Trip Assignment

ONP-15-002 Centre City Shopping Center TIA



Not to Scale