

**Escondido Multi-Family Development (42 units)
City of Escondido
2608 S. Escondido Blvd
Escondido, California**

February 28, 2020

Transportation Impact Analysis

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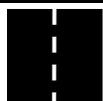
Job #1921

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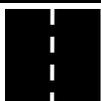


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Executive Summary

The multi-family project of 42 units is located at 2608 S. Escondido Blvd in Escondido, California. The site is occupied by a restaurant that was closed in late 2017. The project is the removal and replacement of the closed restaurant with the proposed 42-unit multi-family project. The project is planned to open by the year 2021 or 2022.

The project trip generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. The project is calculated to generate 336 Average Daily Trips (ADT) with 27 AM peak hour trips (5 inbound and 22 outbound) and 34 PM peak hour trips (24 inbound and 10 outbound).

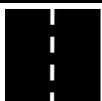
Three cumulative projects were identified by City staff and were included in this analysis.

The following scenarios were analyzed: Existing, Existing plus Project, Existing + Cumulative, Existing + Cumulative + Project, Year 2035, and Year 2035 + Project Conditions. For each scenario, the findings include:

- 1) Under existing conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM).
- 2) Under existing plus project conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM). There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.
- 3) Under existing plus cumulative conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM) and the SB approach leg at the intersection of S. Escondido Blvd/Brotherton Rd (LOS E PM).
- 4) Under existing plus cumulative plus project conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM) and the SB approach leg at the intersection of S. Escondido Blvd/Brotherton Rd (LOS E PM). There are no significant cumulative impacts because the addition of project traffic does not exceed the significance thresholds.
- 5) Under Year 2035 conditions, the study intersections and segments were calculated to operate at LOS C or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS F AM & PM) and the minor approach legs at the intersection of S. Escondido Blvd/Brotherton Rd (NB LOS E PM, SB LOS F PM).
- 6) Under Year 2035 plus project conditions, the study intersections and segments were calculated to operate at LOS C or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS F AM & PM) and the minor approach legs at the intersection of S. Escondido Blvd/Brotherton Rd (NB LOS E

PM, SB LOS F PM). There are no significant horizon year impacts because the addition of project traffic does not exceed the significance thresholds.

The project has no calculated traffic impacts based on the significance criteria; therefore, mitigation measures are not required.



1.0 Introduction

The multi-family project of 42 units is located at 2608 S. Escondido Blvd in Escondido, California. The site is occupied by a restaurant that was closed in late 2017. The project is the removal and replacement of the closed restaurant with the proposed 42-unit multi-family project. The project is planned to open by the year 2021 or 2022. The location of the project is shown in **Figure 1**. A site plan is shown in **Figure 2**.

The purpose of this study is to analyze how the proposed project traffic will affect the study roadways and intersections during weekday daily, AM peak hour and PM peak hour conditions when the project is completed. This report includes the following chapters:

- 1.0 Introduction
- 2.0 Study Methodology
- 3.0 Existing Conditions
- 4.0 Project Description
- 5.0 Existing plus Project Conditions
- 6.0 Cumulative Projects
- 7.0 Existing plus Cumulative Conditions
- 8.0 Existing plus Cumulative plus Project Conditions
- 9.0 Horizon Year Conditions
- 10.0 Horizon Year plus Project Conditions
- 11.0 Conclusion
- 12.0 References and List of Prepares

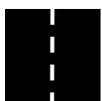


Figure 1: Project Location

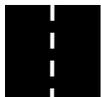
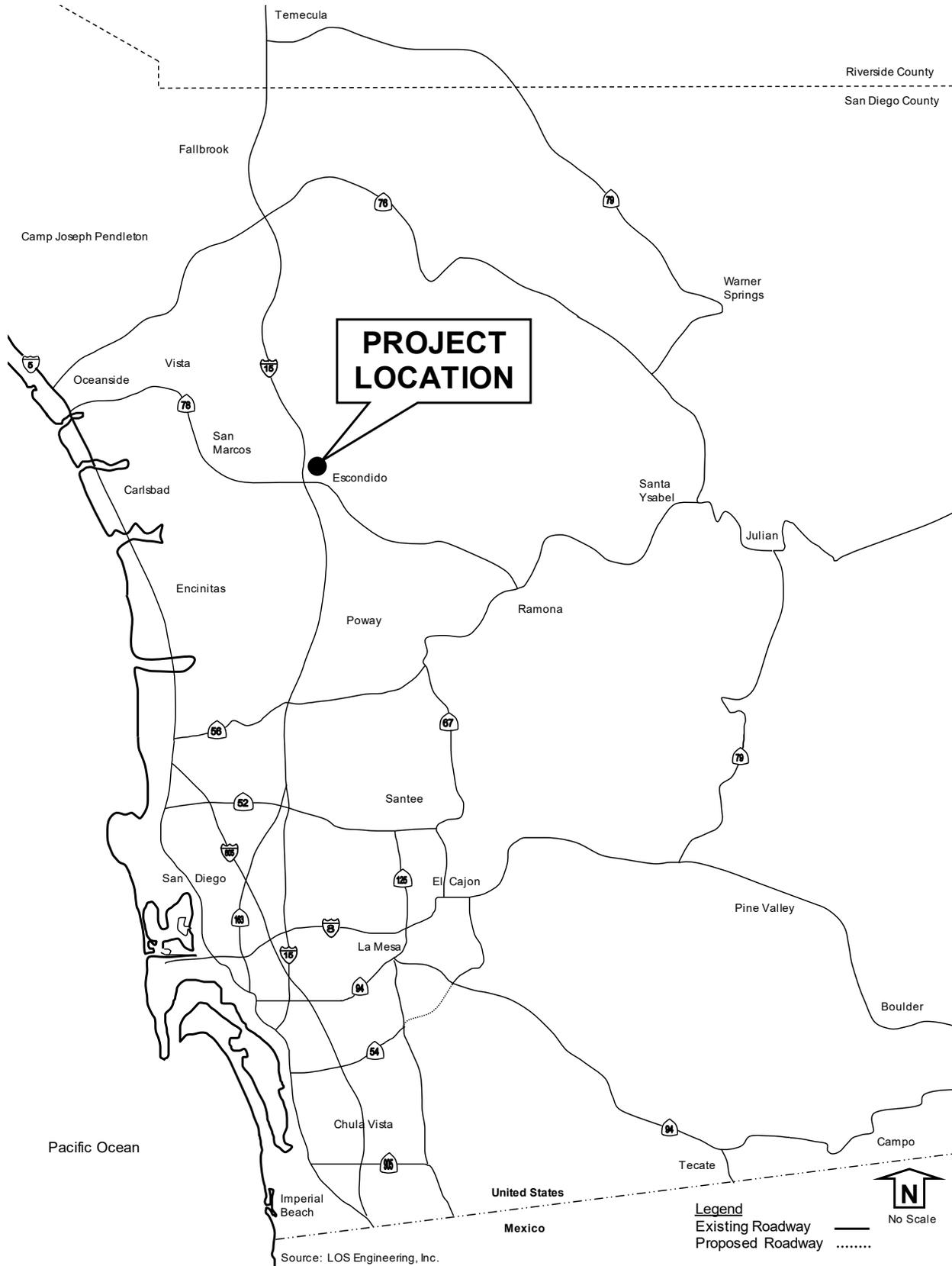
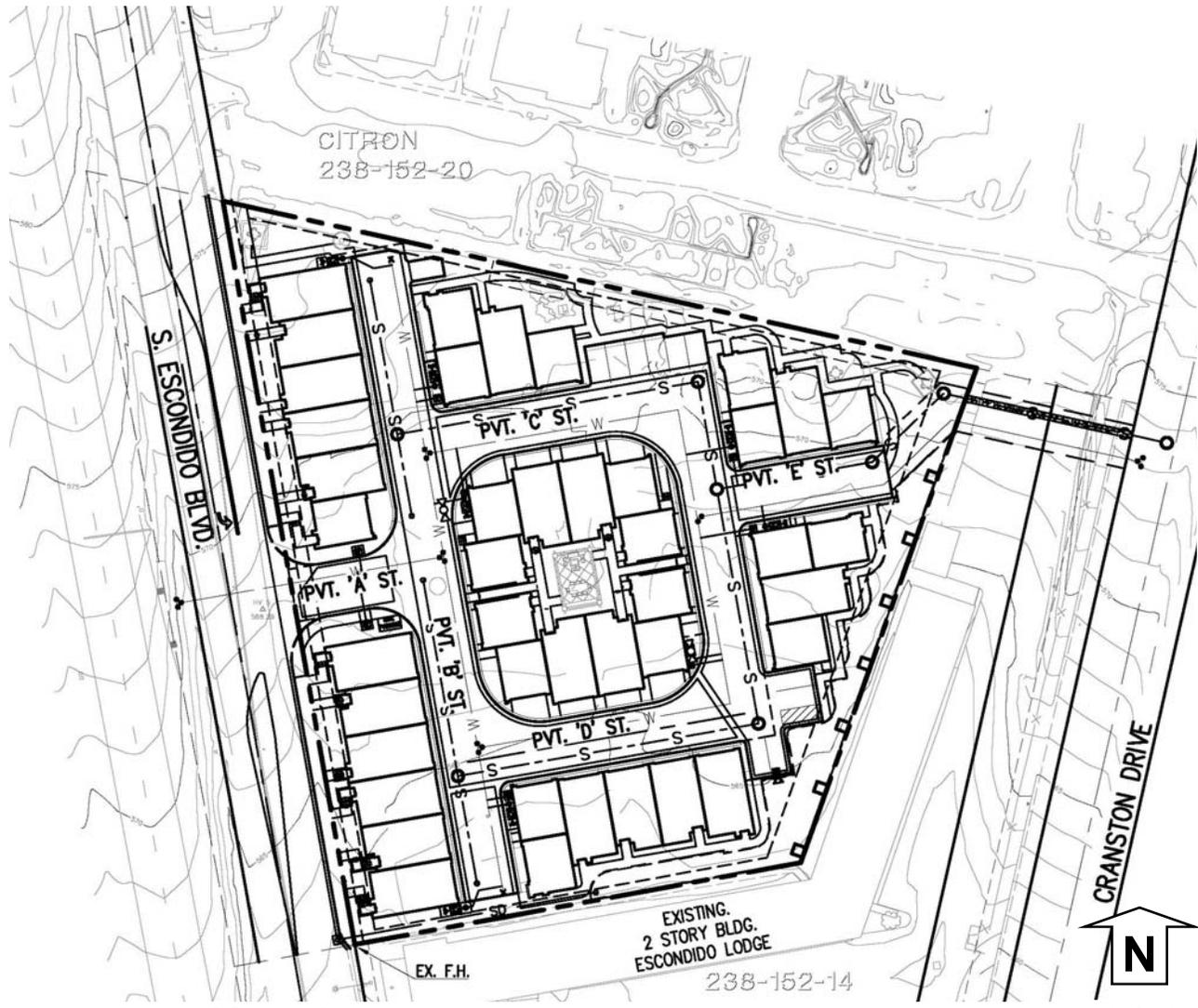
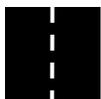


Figure 2: Site Plan



Source: Masson & Associates

No Scale



2.0 Study Methodology

The parameters by which this transportation impact analysis was prepared included the determination of what transportation facilities are to be analyzed, the scenarios to be analyzed and the methods required for analysis. The analysis is based on the *Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria and the threshold for determining an impact is based on the city of Escondido traffic impact significance thresholds.

2.1 Study Area Criteria

The project study area is generally determined by the City of Escondido *Traffic Impact Analysis Requirement Guidelines*, October 10, 2013 (copy included in **Appendix A**). The following intersections were included in this study based on coordination with City of Escondido staff:

- 1) Centre City Parkway/S. Escondido Connector
- 2) Centre City Parkway/Brotherton Road
- 3) S. Escondido Parkway/Brotherton Road
- 4) Centre City Parkway/Citracado Parkway
- 5) S. Escondido Parkway/Citracado Parkway
- 6) S. Escondido Parkway/Project Driveway (Does Not Exist - Future Driveway)
- 7) Centre City Parkway/Cranston Drive

The following street segments were also analyzed as part of this study:

- 1) S. Escondido Boulevard from S. Escondido Connector to Brotherton Road
- 2) S. Escondido Boulevard from to Brotherton Road to Citracado Parkway
- 3) S. Escondido Boulevard from Citracado Parkway to Cranston Drive

Traffic count data are included in **Appendix B**.

2.2 Scenario Criteria

The following study scenarios were based on coordination with City staff:

- 1) Existing Conditions
- 2) Existing plus Project Conditions
- 3) Existing plus Cumulative Conditions
- 4) Existing plus Cumulative plus Project Conditions
- 5) Year 2035 Conditions
- 6) Year 2035 plus Project Conditions

2.3 Traffic Analysis Criteria

The traffic analyses prepared for this study were based on the 6th Edition *Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria. The operating conditions of the study intersections were measured using the HCM LOS designations, which ranges from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. For this traffic study, the intersections were analyzed using the City of Escondido criteria. The LOS criteria for each roadway component are described below.

2.3.1 Intersections

The study intersections were analyzed based on the **operational analysis** outlined in the 6th Ed HCM. This process defines LOS in terms of **average control delay** per vehicle, which is measured in seconds. LOS at the intersections were calculated using the computer software program Synchro 10 (Trafficware Corporation). The 6th Ed HCM LOS for the range of delay by seconds for un-signalized and signalized intersections is described in **Table 1**.

TABLE 1: INTERSECTION LEVEL OF SERVICE DEFINITIONS (6TH EDITION HCM)

Level of Service	Un-Signalized (TWSC and AWSC) Control Delay (sec/veh where $v/c \leq 1$)	Signalized Control Delay (sec/veh where $v/c \leq 1$)
A	0-10	≤ 10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

TWSC: Two Way Stop Control. AWSC: All Way Stop Control. Source: 6th Edition HCM (exhibit 20-2 for two way stop control, exhibit 21-8 for all way stop control, and exhibit 19-8 for signalized intersections). For un-signalized intersections, the control delay is the worst movement delay in seconds/vehicle.

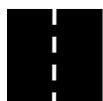
2.3.2 Street Segments

The street segments were analyzed based on the functional classification of the roadway using the City of Escondido Street Segment Average Daily Vehicle Trip Thresholds table. The roadway segment capacity and LOS standards used to analyze street segments are summarized in **Table 2**.

TABLE 2: STREET SEGMENT DAILY CAPACITY AND LOS (CITY OF ESCONDIDO)

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

Source: City of Escondido *Traffic Impact Analysis Guideline* October 10, 2013. NP: No Parking. WP: With Parking.



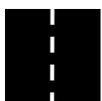
2.4 Traffic Significance Criteria

If the project's traffic exceeds the City of Escondido defined threshold values in **Table 3** on a roadway segment or at an intersection that is operating at a LOS D or worse, then the impact is considered significant and potential mitigation measure(s) should be proposed.

TABLE 3: CITY OF ESCONDIDO IMPACT SIGNIFICANT THRESHOLDS

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

Source: City of Escondido *Traffic Impact Analysis Guideline* October 10, 2013.



3.0 Existing Conditions

This section describes the study area street system, daily volumes, and LOS.

3.1 Existing Street System

In the vicinity of the project, the following roadways were analyzed as part of this study:

S. Escondido Parkway from the S. Escondido Connector to Cranston Drive is classified as a *Local Collector* in the City of Escondido 2012 General Plan (excerpt included in **Appendix C**). This segment of roadway is construct as a 2-lane un-divided roadway and is posted at 35 Miles Per Hour (MPH). Some parking is generally permitted off-pavement between Brotherton Road and Citracado Parkway.

3.2 Multi-Modal Transportation

North County Transit District (NCTD) does not show any bus service near the project site. A route map is included in **Appendix D**.

The City of Escondido *Bicycle Master Plan*, October 2012 shows a Class II bike route along Centre City Parkway near the project site. Excerpts from the City of Escondido *Bicycle Master Plan* are included in **Appendix E**.

The existing roadway conditions are shown in **Figure 3**.

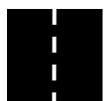
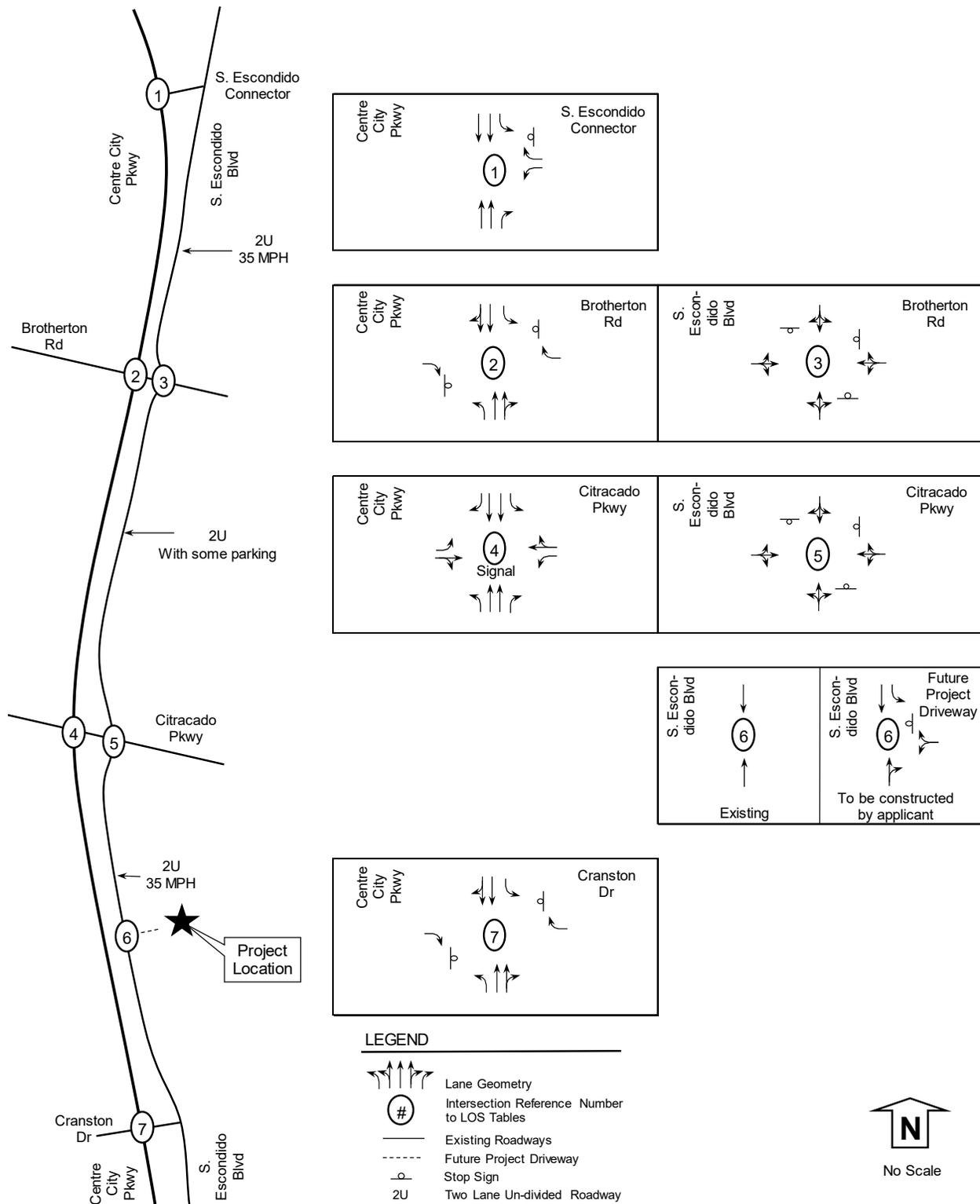


Figure 3: Existing Multi-Modal Conditions



3.3 Existing Traffic Volumes and LOS Analysis

Intersection counts were collected on Tuesday September 10, 2019 between 7:00 AM to 9:00 AM for the AM commuter period and from 4:00 PM to 6:00 PM for the PM commuter period. The count dates are noted in parentheses for the study intersections below:

- 1) Centre City Parkway/S. Escondido Connector
- 2) Centre City Parkway/Brotherton Road
- 3) S. Escondido Parkway/Brotherton Road
- 4) Centre City Parkway/Citracado Parkway
- 5) S. Escondido Parkway/Citracado Parkway
- 6) S. Escondido Parkway/Project Driveway (Does Not Exist - Future Driveway)
- 7) Centre City Parkway/Cranston Drive

Twenty-four hours of traffic volumes were collected on Tuesday September 10, 2019 on the following segments:

- 1) S. Escondido Boulevard from S. Escondido Connector to Brotherton Road
- 2) S. Escondido Boulevard from to Brotherton Road to Citracado Parkway
- 3) S. Escondido Boulevard from Citracado Parkway to Cranston Drive

The existing weekday daily and peak hour volumes are shown in **Figure 4**.

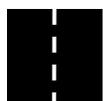
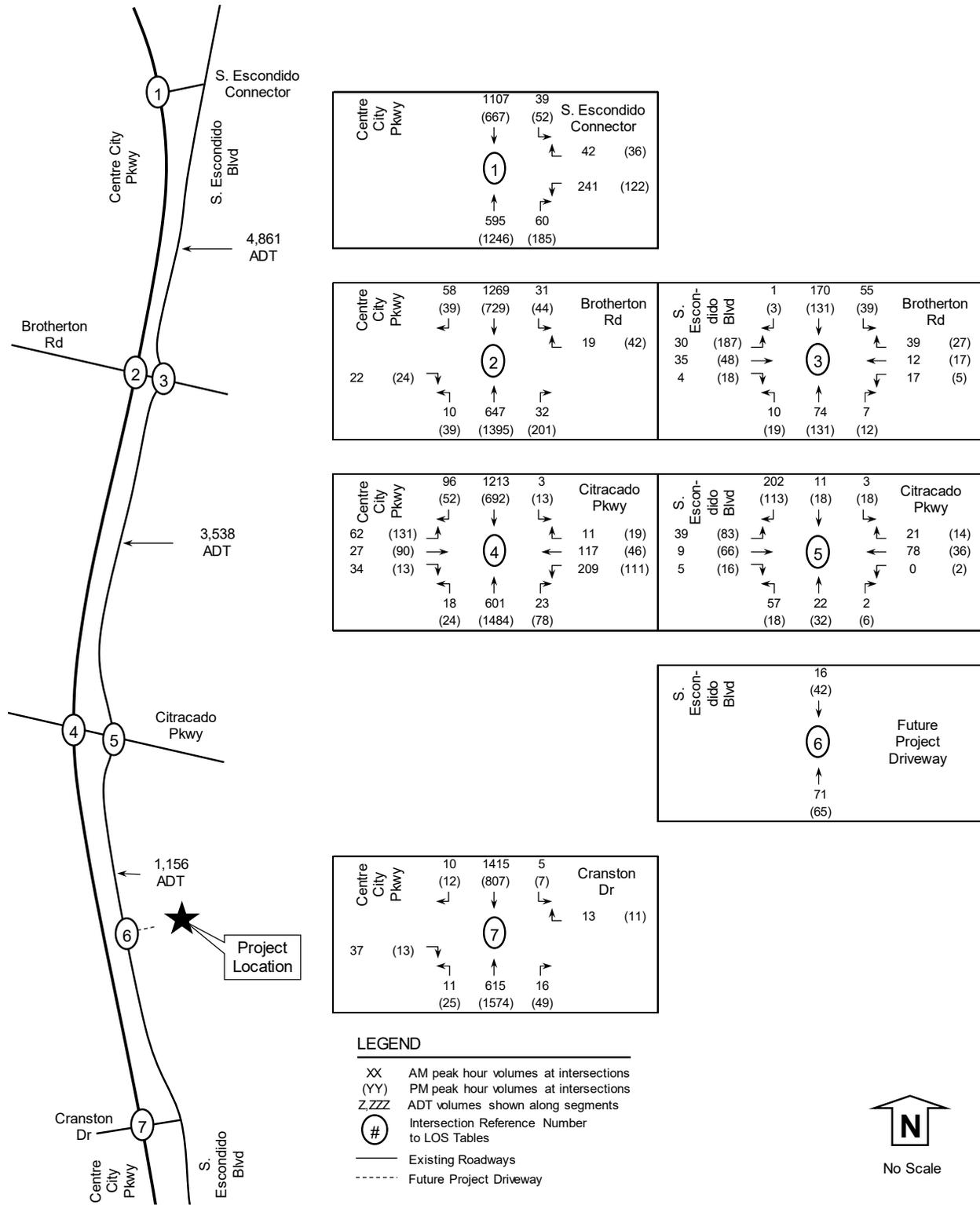


Figure 4: Existing Volumes



The LOS calculated for the intersections and roadway segments are included in **Tables 4 and 5**. Intersection LOS calculations are included in **Appendix F**.

TABLE 4: EXISTING INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis) ¹	Movement	Study Period	Existing	
			Delay ²	LOS ³
1) Centre City Pkwy at S. Escondido Connector (U)	WB	AM	40.5	E
	WB	PM	52.2	F
2) Centre City Pkwy at Brotherton Rd (U)	EB R	AM	15.4	C
	WB R	AM	10.9	B
	EB R	PM	11.5	B
	WB R	PM	19.4	C
3) S. Escondido Blvd at Brotherton Rd (U)	NB LTR	AM	11.3	B
	SB LTR	AM	13.2	B
	NB LTR	PM	21.6	C
	SB LTR	PM	25.4	D
4) Centre City Pkwy at Citrcado Pkwy (S)	All	AM	12.0	B
	All	PM	11.3	B
5) S. Escondido Blvd at Citrcado Pkwy (U)	NB LTR	AM	12.7	B
	SB LTR	AM	10.2	B
	NB LTR	PM	11.9	B
	SB LTR	PM	10.2	B
6) S. Escondido Pkwy at Project Driveway (U)	WB LR	AM	DNE	NA
	WB LR	PM	DNE	NA
7) Centre City Pkwy at Cranston Dr (U)	EB R	AM	17.0	C
	WB R	AM	10.7	B
	EB R	PM	11.6	B
	WB R	PM	18.0	C

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. DNE: Does Not Exist. NA: Not Applicable.

TABLE 5: EXISTING SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	Functional Classification	LOS E Capacity	Existing		
			Daily Volume	V/C	LOS
S. Escondido Boulevard					
S. Escondido Connector to Brotherton Rd	2 Ln Local Collector	10,000	4,861	0.486	B
Brotherton Rd to Citracado Pkwy	2 Ln Local Collector	10,000	3,538	0.354	B
Citracado Pkwy to Cranston Dr	2 Ln Local Collector	10,000	1,156	0.116	A

Notes: Ln = Lane. Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio.

Under existing conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM).



4.0 Project Description

The multi-family project of 42 units is located at 2608 S. Escondido Blvd in Escondido, California. The site is occupied by a restaurant that was closed in late 2017. The project is the removal and replacement of the closed restaurant with the proposed 42-unit multi-family project. The project is planned to open by the year 2021 or 2022.

4.1 Project Trip Generation

The project trip generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. The project is calculated to generate 336 Average Daily Trips (ADT) with 27 AM peak hour trips (5 inbound and 22 outbound) and 34 PM peak hour trips (24 inbound and 10 outbound) as shown in **Table 6**.

TABLE 6: PROJECT TRIP GENERATION

Proposed Land Use	Rate	Size & Units	ADT	%	Split	AM			PM		
						IN	OUT	%	Split	IN	OUT
Residential - Multi Family	8 /DU	42 DU	336	8%	0.2 0.8	5	22	10%	0.7 0.3	24	10

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002.

SF - Square Feet; ADT-Average Daily Traffic; Split-percent inbound and outbound.

4.2 Project Access

Project access is from a single driveway on S. Escondido Parkway. The driveway design is included on the Civil plans. The southbound approach along S. Escondido Parkway will be restriped to include a left turn lane (with approximately 75 feet of storage) into the project site and a through lane. The northbound approach along S. Escondido Parkway will included a through-right turn lane. The project egress will include a combination left-right lane with stop control as shown previously in Figure 3.

4.3 Project Parking

The project is proposed with 96 parking spaces (84 garage spaces and 12 open outdoor spaces).

4.4 Project Trip Distribution and Assignment

The distribution was based on travel routes to/from to I-15 and existing traffic patterns (calculations included in **Appendix G**). The project distribution is shown in **Figure 5** while the trip assignment is shown in **Figure 6**.

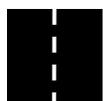
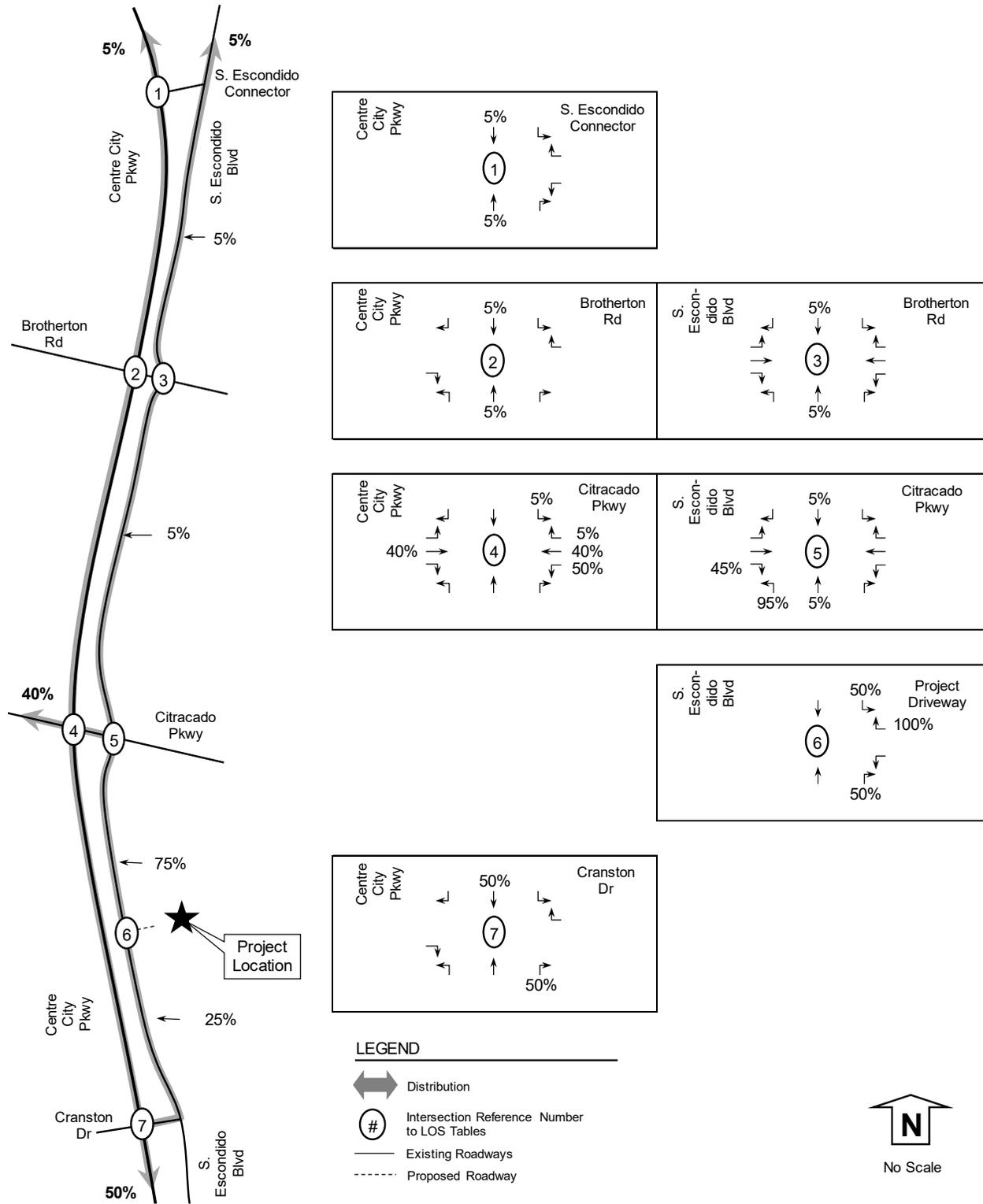


Figure 5: Project Distribution



5.0 Existing plus Project Conditions

This scenario accounts for the addition of project traffic onto existing conditions. The traffic volumes are shown in **Figure 9**. The LOS calculated for the study intersections and segments are included in **Tables 7 and 8**. Intersection LOS calculations are included in **Appendix H**.

TABLE 7: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis) ¹	Movement	Study Period	Existing		Existing + Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Direct Impact? ⁵
1) Centre City Pkwy at Escondido Connector (WB	AM	40.5	E	40.5	E	0.0	No
	WB	PM	52.2	F	52.2	F	0.0	No
2) Centre City Pkwy at Brotherton Rd (U)	EB R	AM	15.4	C	15.4	C	0.0	No
	WB R	AM	10.9	B	10.9	B	0.0	No
	EB R	PM	11.5	B	11.5	B	0.0	No
	WB R	PM	19.4	C	19.4	C	0.0	No
3) S. Escondido Blvd at Brotherton Rd (U)	NB LTR	AM	11.3	B	11.3	B	0.0	No
	SB LTR	AM	13.2	B	13.2	B	0.0	No
	NB LTR	PM	21.6	C	21.7	C	0.1	No
	SB LTR	PM	25.4	D	25.5	D	0.1	No
4) Centre City Pkwy at Citrcado Pkwy (S)	All	AM	12.0	B	12.5	B	0.5	No
	All	PM	11.3	B	11.8	B	0.5	No
5) S. Escondido Blvd at Citrcado Pkwy (U)	NB LTR	AM	DNE	NA	13.3	B	0.6	No
	SB LTR	AM	DNE	NA	10.2	B	0.0	No
	NB LTR	PM	DNE	NA	12.2	B	0.3	No
	SB LTR	PM	DNE	NA	10.3	B	0.1	No
6) S. Escondido Pkwy at Project Driveway (U)	WB LR	AM	DNE	NA	8.8	A	NA	No
	WB LR	PM	DNE	NA	8.7	A	NA	No
7) Centre City Pkwy at Cranston Dr (U)	EB R	AM	17.0	C	17.2	C	0.2	No
	WB R	AM	10.7	B	10.7	B	0.0	No
	EB R	PM	11.6	B	11.6	B	0.0	No
	WB R	PM	18.0	C	18.1	C	0.1	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Direct Impact if project traffic exceeds threshold. DNE: Does not exist. NA: Not Applicable.

TABLE 8: EXISTING PLUS PROJECT SEGMENT VOLUMES AND LEVEL OF SERVICE

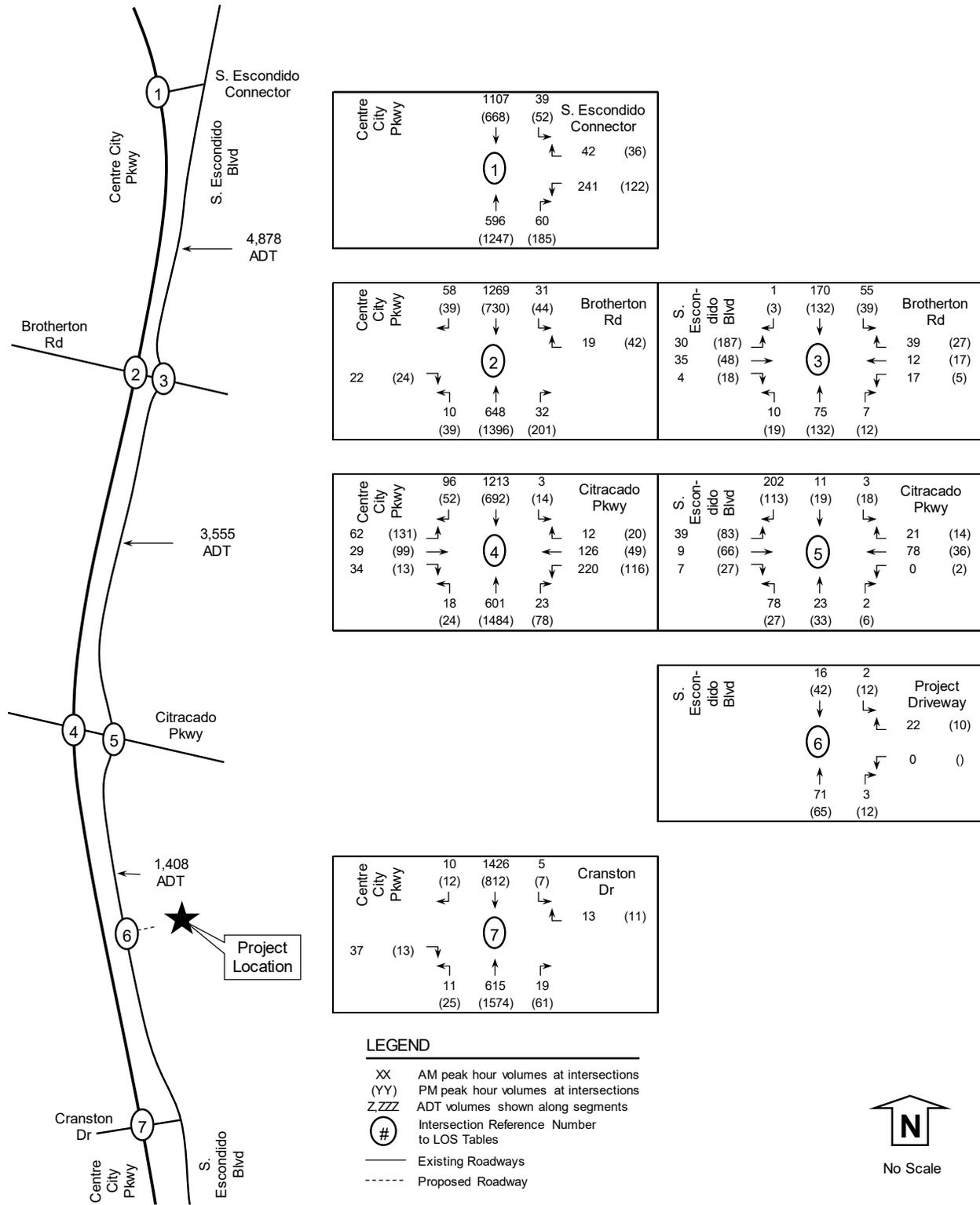
Segment	Functional Classification	LOS E	Existing		Project		Existing + Project				
			Daily Capacity	V/C	Daily LOS	Daily Volume	Daily Volume	V/C	Change LOS	Project Impact?	
S. Escondido Boulevard											
S. Escondido Connector to Brotherton Rd	2 Ln Local Collector	10,000	4,861	0.486	B	17	4,878	0.488	B	0.002	No
Brotherton Rd to Citracado Pkwy	2 Ln Local Collector	10,000	3,538	0.354	B	17	3,555	0.356	B	0.002	No
Citracado Pkwy to Cranston Dr	2 Ln Local Collector	10,000	1,156	0.116	A	252	1,408	0.141	A	0.025	No

Notes: Ln = Lane. Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio.

Under existing plus project conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM). There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.



Figure 7: Existing plus Project Volumes



6.0 Cumulative Projects

Based on coordination with Escondido staff the following cumulative projects were determined to add traffic to the study area. A map showing the cumulative project locations and trip assignments are included in **Appendix I**. The following cumulative project were included in this analysis.

Cumulative Project Del Prado I & II: A multi-family subdivision with 113 homes generally located on the southwest corner of S. Centre City Pkwy and Brotherton Road.

Cumulative Project Warmington: A multi-family subdivision with 69 homes generally located on the northeast corner of S. Escondido Blvd and Brotherton Road.

Cumulative Project Brandywine Storage (78,067 sf) and 4 single family homes. This project is generally located on the southeast corner of S. Escondido Blvd and Brotherton Road.

The cumulative project volumes are shown in **Figure 8**.

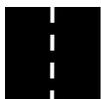
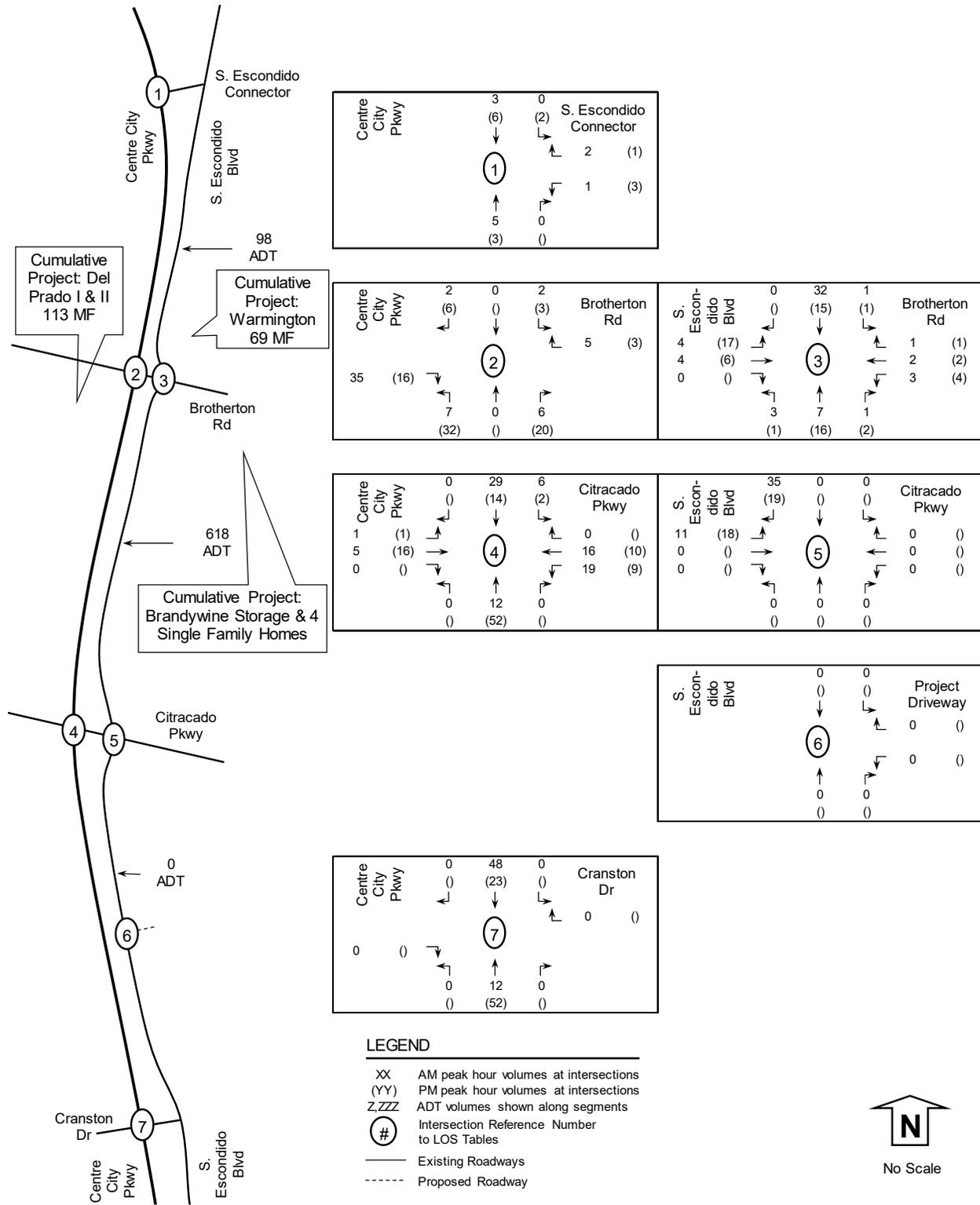


Figure 8: Cumulative Project Locations and Volumes



7.0 Existing plus Cumulative Conditions

Existing plus cumulative conditions (near term) describe the anticipated roadway operations for opening day anticipated to be year 2021/2022. The Existing plus Cumulative without project volumes are shown in **Figure 9**. The LOS calculated for the study intersections and segments are included in **Tables 9 and 10**. Intersection LOS calculations are included in **Appendix J**.

TABLE 9: EXISTING PLUS CUMULATIVE INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis) ¹	Movement	Peak Hour	Near Term	
			Delay ²	LOS ³
1) Centre City Pkwy at S. Escondido Connector (U)	WB	AM	41.0	E
	WB	PM	54.7	F
2) Centre City Pkwy at Brotherton Rd (U)	EB R	AM	16.7	C
	WB R	AM	11.0	B
	EB R	PM	11.7	B
	WB R	PM	19.9	C
3) S. Escondido Blvd at Brotherton Rd (U)	NB LTR	AM	11.8	B
	SB LTR	AM	14.6	B
	NB LTR	PM	27.7	D
	SB LTR	PM	35.1	E
4) Centre City Pkwy at Citracado Pkwy (S)	All	AM	13.1	B
	All	PM	12.5	B
5) S. Escondido Blvd at Citracado Pkwy (U)	NB LTR	AM	13.7	B
	SB LTR	AM	10.4	B
	NB LTR	PM	12.6	B
	SB LTR	PM	10.4	B
6) S. Escondido Pkwy at Project Driveway (U)	WB LR	AM	DNE	NA
	WB LR	PM	DNE	NA
7) Centre City Pkwy at Cranston Dr (U)	EB R	AM	17.6	C
	WB R	AM	10.7	B
	EB R	PM	11.7	B
	WB R	PM	18.6	C

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. DNE: Does Not Exist. NA: Not Applicable.

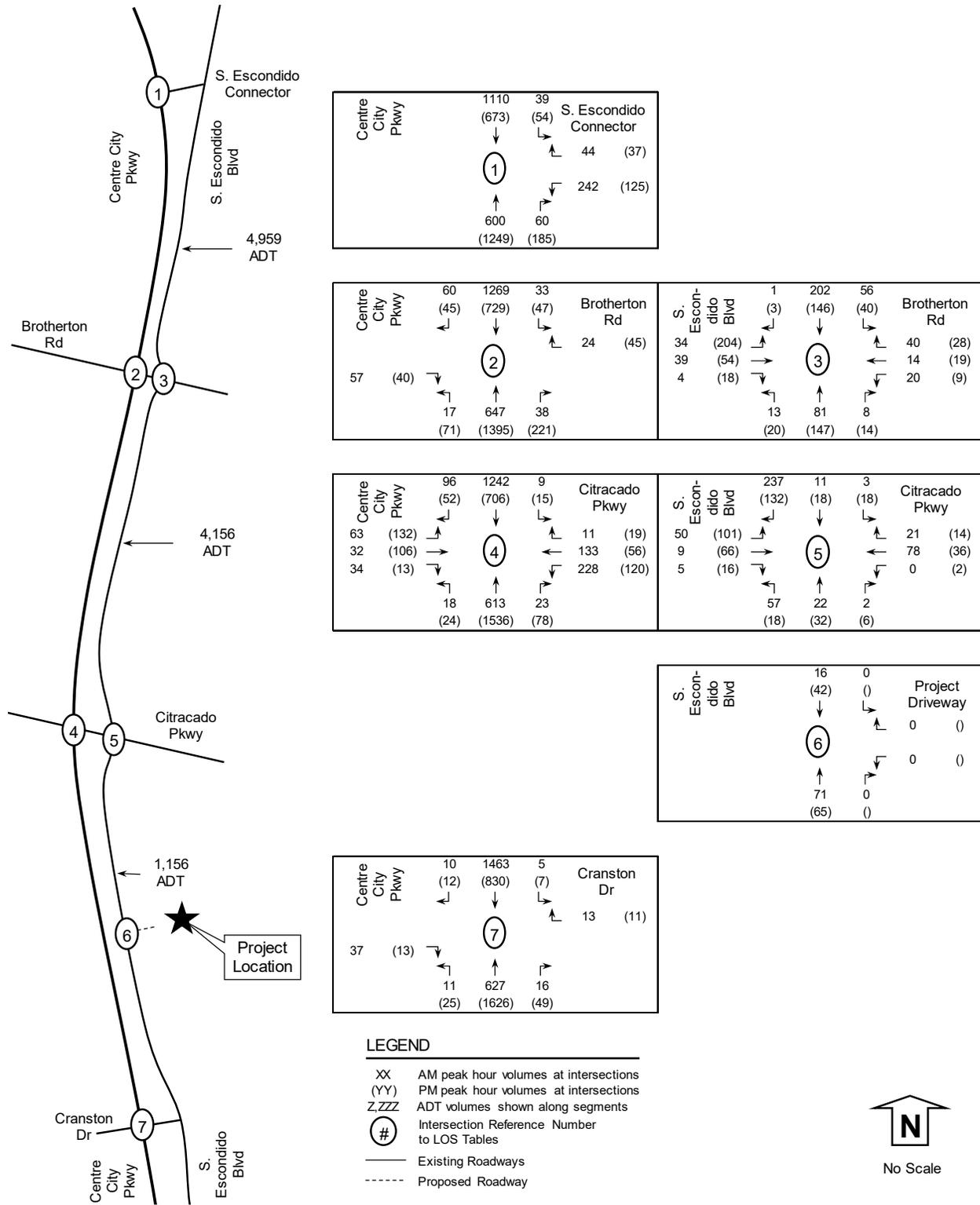
TABLE 10: EXISTING PLUS CUMULATIVE SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	Functional Classification	LOS E Capacity	Near Term		
			Daily Volume	V/C	LOS
<u>S. Escondido Boulevard</u>					
S. Escondido Connector to Brotherton Rd	2 Ln Local Collector	10,000	4,959	0.496	B
Brotherton Rd to Citracado Pkwy	2 Ln Local Collector	10,000	4,156	0.416	B
Citracado Pkwy to Cranston Dr	2 Ln Local Collector	10,000	1,156	0.116	A

Notes: Ln = Lane. Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio.

Under existing plus cumulative conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM) and the SB approach leg at the intersection of S. Escondido Blvd/Brotherton Rd (LOS E PM).

Figure 9: Existing plus Cumulative Volumes



8.0 Existing plus Cumulative plus Project Conditions

The existing plus cumulative plus project conditions (near term + project) describe the anticipated roadway operations during opening day of the project. Existing plus cumulative plus project traffic volumes are shown in **Figure 10**. The LOS calculated for the study intersections and segments are included in **Tables 11 and 12**. Intersection LOS calculations are included in **Appendix K**.

TABLE 11: EXISTING PLUS CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis) ¹	Movement	Peak Hour	Near Term		Near Term + Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Cumulative Impact ⁵
1) Centre City Pkwy at S. Escondido Connector (U)	WB	AM	41.0	E	41.0	E	0.0	No
	WB	PM	54.7	F	54.7	F	0.0	No
2) Centre City Pkwy at Brotherton Rd (U)	EB R	AM	16.7	C	16.7	C	0.0	No
	WB R	AM	11.0	B	11.0	B	0.0	No
	EB R	PM	11.7	B	11.7	B	0.0	No
3) S. Escondido Blvd at Brotherton Rd (U)	WB R	PM	19.9	C	19.9	C	0.0	No
	NB LTR	AM	11.8	B	11.9	B	0.1	No
	SB LTR	AM	14.6	B	14.6	B	0.0	No
4) Centre City Pkwy at Citracado Pkwy (S)	NB LTR	PM	27.7	D	27.9	D	0.2	No
	SB LTR	PM	35.1	E	35.3	E	0.2	No
	All	AM	13.1	B	13.6	B	0.5	No
	All	PM	12.5	B	13.1	B	0.6	No
5) S. Escondido Blvd at Citracado Pkwy (U)	NB LTR	AM	13.7	B	14.5	B	0.8	No
	SB LTR	AM	10.4	B	10.4	B	0.0	No
	NB LTR	PM	12.6	B	13.0	B	0.4	No
	SB LTR	PM	10.4	B	10.5	B	0.1	No
6) S. Escondido Pkwy at Project Driveway (U)	WB LR	AM	DNE	NA	8.8	A	NA	No
	WB LR	PM	DNE	NA	8.7	A	NA	No
7) Centre City Pkwy at Cranston Dr (U)	EB R	AM	17.6	C	17.8	C	0.2	No
	WB R	AM	10.7	B	10.7	B	0.0	No
	EB R	PM	11.7	B	11.8	B	0.1	No
	WB R	PM	18.6	C	18.7	C	0.1	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Cumulative Impact if project traffic exceeds threshold. DNE: Does Not Exist. NA: Not Applicable.

TABLE 12: EXISTING PLUS CUMULATIVE PLUS PROJECT SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	Functional Classification	Near-Term (E+C)			Project		Near-Term with Project (E+C+P)				
		LOS E	Daily Capacity	Daily Volume	V/C	Daily Volume	Daily Volume	V/C	Change LOS	Project in V/C	Impact?
S. Escondido Boulevard											
S. Escondido Connector to Brotherton Rd	2 Ln Local Collector	10,000	4,959	0.496	B	17	4,976	0.498	B	0.002	No
Brotherton Rd to Citracado Pkwy	2 Ln Local Collector	10,000	4,156	0.416	B	17	4,173	0.417	B	0.002	No
Citracado Pkwy to Cranston Dr	2 Ln Local Collector	10,000	1,156	0.116	A	252	1,408	0.141	A	0.025	No

Notes: Ln = Lane. Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio.

Under existing plus cumulative plus project conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM) and the SB approach leg at the intersection of S. Escondido Blvd/Brotherton Rd (LOS E PM). There are no significant cumulative impacts because the addition of project traffic does not exceed the significance thresholds.

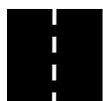
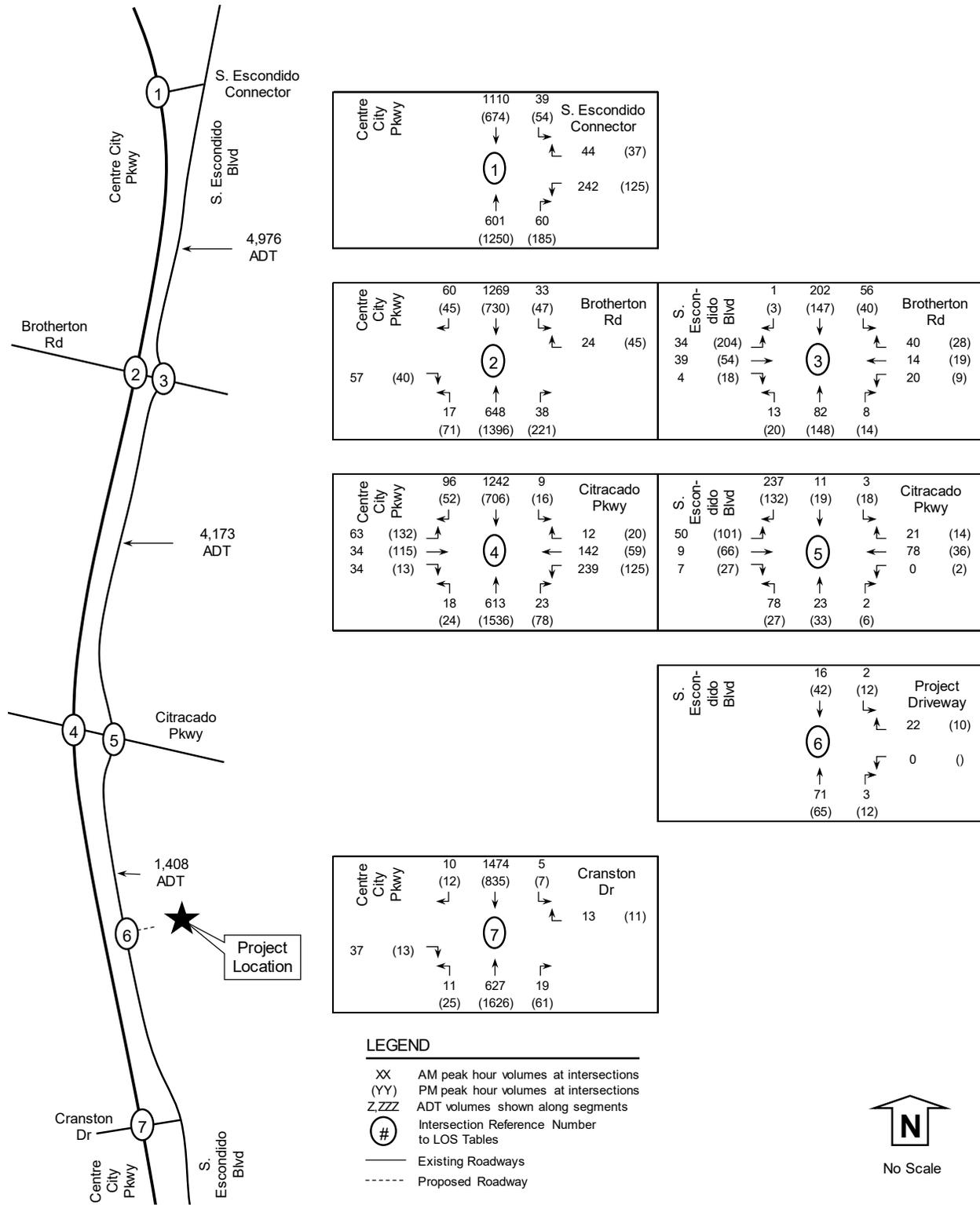


Figure 10: Existing plus Cumulative plus Project Volumes



9.0 Year 2035 Conditions

The *City of Escondido General Plan*, May 2012 (“General Plan”) was reviewed for Year 2035 volumes; however, the General Plan only had volumes for the study segments and not the study intersections. Therefore, an 8% growth factor was applied to near-term (existing + cumulative) intersection volumes to obtain year 2035 intersection volumes. The 8% growth factor was calculated by apply a 0.5% annual growth factor over 16 years ($16 \times 0.5\%/year = 8\%$) to represent the 16 years between Year 2019 and Year 2035. The 0.5% growth factor was obtained from the General Plan traffic study that documented a 2.5% growth between 2030 and 2035, or 0.5% growth per year (**Appendix L**). Available Year 2035 segment volumes were obtained from Table 4.16-2 of the General Plan (excerpts included in Appendix L).

Year 2035 volumes are shown in **Figure 11**. Roadway geometric conditions used for the year 2035 analysis were based on existing conditions documented previously in Figure 3. The LOS calculated for the study intersections and segments are included in **Tables 13 and 14**. Intersection LOS calculations are included in **Appendix M**.

TABLE 13: YEAR 2035 INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis) ¹	Movement	Study Period	Horizon Year (2035)	
			Delay ²	LOS ³
1) Centre City Pkwy at S. Escondido Connector (U)	WB	AM	59.9	F
	WB	AM	93.2	F
2) Centre City Pkwy at Brotherton Rd (U)	EB R	AM	18.1	C
	WB R	AM	11.4	B
	EB R	PM	12.1	B
	WB R	PM	22.5	C
3) S. Escondido Blvd at Brotherton Rd (U)	NB LTR	AM	12.1	B
	SB LTR	AM	15.8	C
	NB LTR	PM	35.8	E
	SB LTR	PM	50.9	F
4) Centre City Pkwy at Citrcado Pkwy (S)	All	AM	15.1	B
	All	PM	14.5	B
5) S. Escondido Blvd at Citrcado Pkwy (U)	NB LTR	AM	14.6	B
	SB LTR	AM	10.6	B
	NB LTR	PM	12.9	B
	SB LTR	PM	10.8	B
6) S. Escondido Pkwy at Project Driveway (U)	WB LR	AM	DNE	NA
	WB LR	PM	DNE	NA
7) Centre City Pkwy at Cranston Dr (U)	EB R	AM	19.2	C
	WB R	AM	11.0	B
	EB R	PM	12.1	B
	WB R	PM	20.2	C

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. DNE: Does Not Exist. NA: Not Applicable.

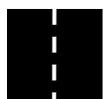


Figure 11: Year 2035 Volumes

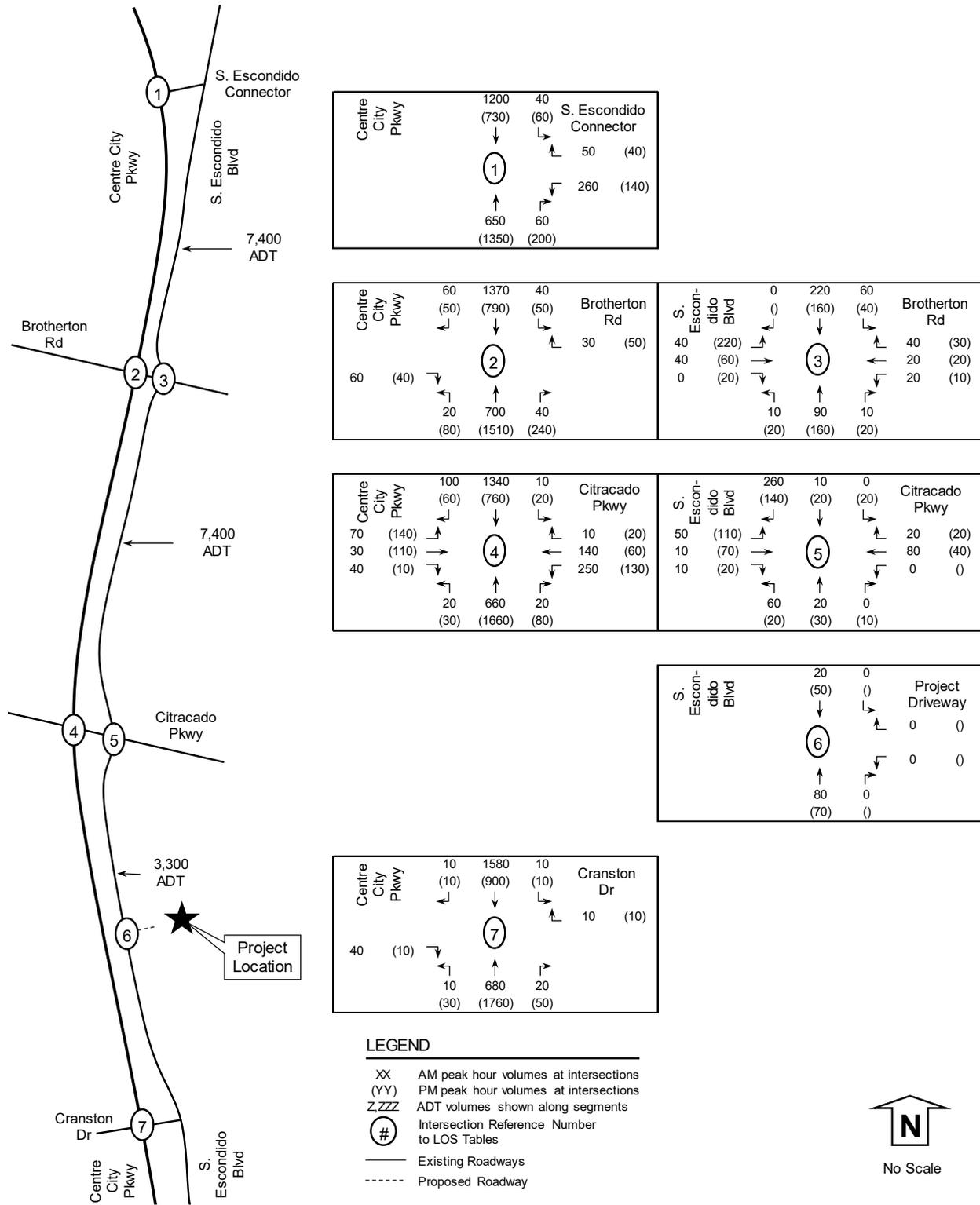


TABLE 14: YEAR 2035 SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	Proposed Classification	LOS E Capacity	Horizon Year (2035)		
			Daily Volume	V/C	LOS
S. Escondido Boulevard					
S. Escondido Connector to Brotherton Rd	2 Ln Local Collector	15,000	7,400	0.493	B
Brotherton Rd to Citracado Pkwy	2 Ln Local Collector	15,000	7,400	0.493	B
Citracado Pkwy to Cranston Dr	2 Ln Local Collector	15,000	3,300	0.220	A

Notes: Ln = Lane. Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio.

Under Year 2035 conditions, the study intersections and segments were calculated to operate at LOS C or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS F AM & PM) and the minor approach legs at the intersection of S. Escondido Blvd/Brotherton Rd (NB LOS E PM, SB LOS F PM).

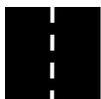
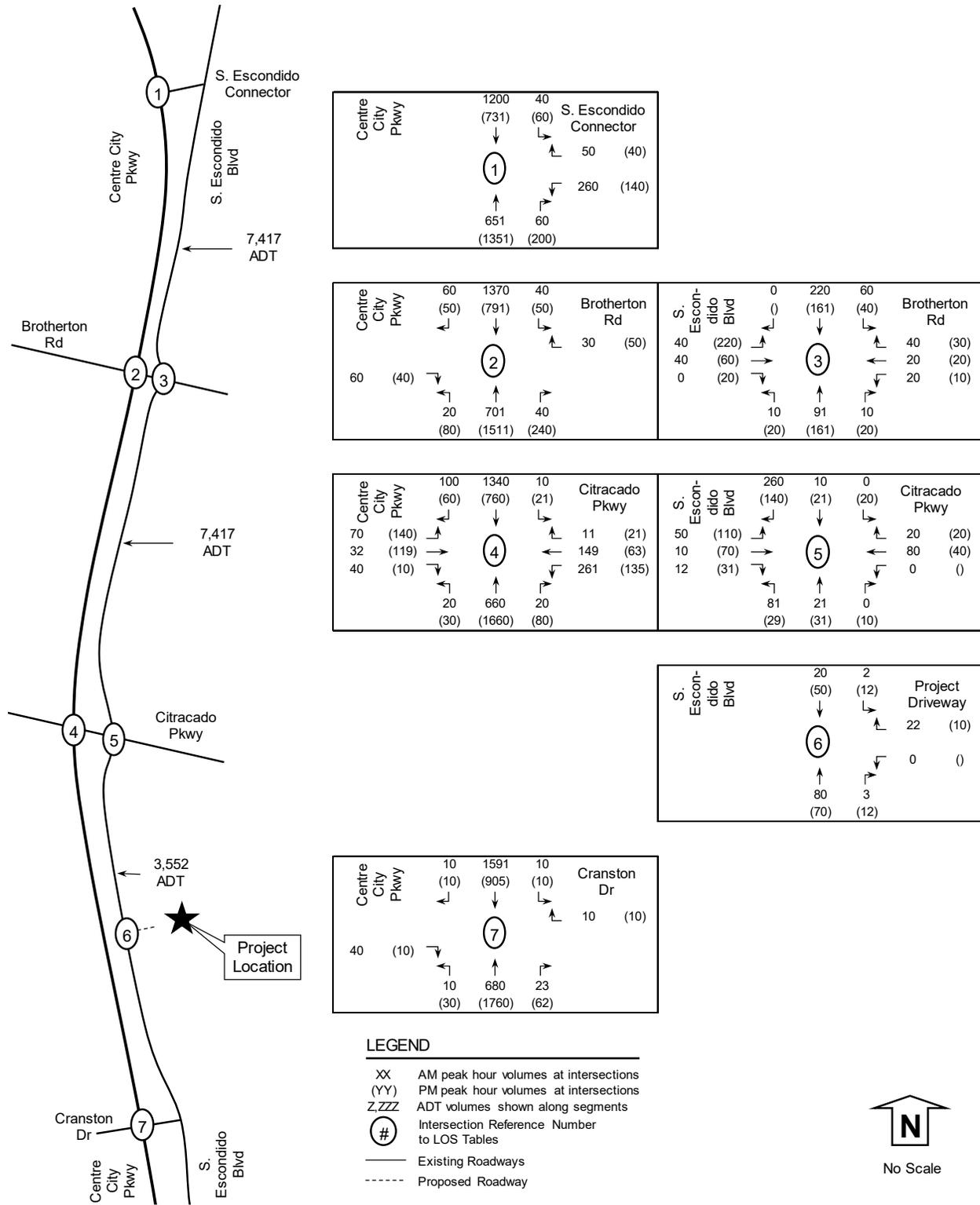


Figure 12: Year 2035 plus Project Volumes



LEGEND

- XX AM peak hour volumes at intersections
- (YY) PM peak hour volumes at intersections
- Z.ZZZ ADT volumes shown along segments
- ① Intersection Reference Number to LOS Tables
- Existing Roadways
- - - - - Proposed Roadway



11.0 Conclusion

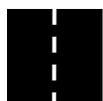
The multi-family project of 42 units is located at 2608 S. Escondido Blvd in Escondido, California. The site is occupied by a restaurant that was closed in late 2017. The project is the removal and replacement of the closed restaurant with the proposed 42-unit multi-family project. The project is planned to open by the year 2021 or 2022.

The project trip generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. The project is calculated to generate 336 Average Daily Trips (ADT) with 27 AM peak hour trips (5 inbound and 22 outbound) and 34 PM peak hour trips (24 inbound and 10 outbound).

Three cumulative projects were identified by City staff and were included in this analysis.

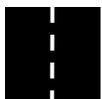
The following scenarios were analyzed: Existing, Existing plus Project, Existing + Cumulative, Existing + Cumulative + Project, Year 2035, and Year 2035 + Project Conditions. For each scenario, the findings include:

- 1) Under existing conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM).
- 2) Under existing plus project conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM). There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.
- 3) Under existing plus cumulative conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E and F) and the SB approach leg at the intersection of S. Escondido Blvd/Brotherton Rd (LOS E PM).
- 4) Under existing plus cumulative plus project conditions, the study intersections and segments were calculated to operate at LOS D or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS E AM and F PM) and the SB approach leg at the intersection of S. Escondido Blvd/Brotherton Rd (LOS E PM). There are no significant cumulative impacts because the addition of project traffic does not exceed the significance thresholds.
- 5) Under Year 2035 conditions, the study intersections and segments were calculated to operate at LOS C or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS F AM & PM) and the minor approach legs at the intersection of S. Escondido Blvd/Brotherton Rd (NB LOS E PM, SB LOS F PM).
- 6) Under Year 2035 plus project conditions, the study intersections and segments were calculated to operate at LOS C or better except for the minor approach leg at the intersection of Centre City Pkwy/S. Escondido Connector (LOS F AM & PM) and the minor approach legs at the intersection of S. Escondido Blvd/Brotherton Rd (NB LOS E



PM, SB LOS F PM). There are no significant horizon year impacts because the addition of project traffic does not exceed the significance thresholds.

The project has no calculated traffic impacts based on the significance criteria; therefore, mitigation measures are not required.



12.0 References and List of Preparers

12.1 References

City of Escondido *Traffic Impact Analysis Requirement Guidelines*, October 2013.

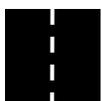
San Diego Traffic Engineers' Council (SANTEC). March 2, 2002. *SANTEC/ITE Guidelines for Traffic Impact Studies in the Escondido Region*.

Trafficware Corporation. Synchro Version 10 computer software.

Transportation Research Board National Research Council Washington, D.C. *Highway Capacity Manual*. CD ROM.

12.2 List of Preparers

Justin Rasas, P.E. (RCE 60690), LOS Engineering, Inc. Author



Appendix A

City of Escondido Traffic Impact Analysis Requirement Guidelines



**CITY OF ESCONDIDO
Traffic Impact Analysis Guideline**

The City’s General Plan (2012) established a goal of L.O.S. “C” for all City streets, however, due to overall citywide traffic conditions, L.O.S. “D” was considered acceptable. If the existing LOS is “D” or worse, preservation of the existing LOS must be maintained, or acceptable mitigation must be identified. Currently the approved level-of-service standards for different street segments based on their classifications and ADT within the City of Escondido are as follows:

**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	(8 lanes)	116/136 (NP)	23,800	37,800	51,800	62,300	70,000
	(6 lanes)	106/126 (NP)	20,400	32,400	44,400	53,400	60,000
Major Road	(6 lanes)	90/110 (NP)	17,000	27,000	37,000	44,500	50,000
	(4 lanes)	82/102 (NP)	12,600	20,000	27,400	32,900	37,000
Collector	(4 lanes)	64/84 (NP)	11,600	18,500	25,300	30,400	34,200
	(4 lanes)	(WP)	6,800	10,800	14,800	17,800	20,000
Local Collector	(2 lanes)	42/66 (NP)	5,100	8,100	11,100	13,400	15,000
		(WP)	3,400	5,400	7,400	8,900	10,000

NP: No Parking, WP: With Parking

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

Level of Service	(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

For any development, passenger vehicle trips shall be estimated using the rates and methodologies outlined in “Trip Generation Rates for San Diego Region”, latest edition, published by SANDAG (if rates not available, ITE rates shall be used). Since based on the adopted 2013 General Plan of the City of Escondido, the goal Level-Of-Service is C, a Traffic Impact Analysis (TIA) must be prepared for any project that generates and adds more than 2% of the ADT for LOS C to any street segment within the preliminary study area identified by the City staff. Based on the above mentioned threshold, the following table contains the trigger-points for Traffic Impact Analysis within the City of Escondido for different street classifications.

**PROPOSED A.D.T. THRESHOLDS FOR ROADWAY SEGMENTS TO
TRIGGER TRAFFIC IMPACT ANALYSIS FOR NEW DEVELOPMENTS**

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 other	(2 lanes)	42/66 (NP)	200
	(2 lanes)	(WP)	

A Traffic Impact Analysis should be undertaken for any type of development that generates daily trips more than the above mentioned trigger-points. Certain types of projects which generate less than 500 ADTs may be considered by the City staff for a TIA waiver only where the affected segments and intersections operate at LOS C or better. On the contrary, City staff may require a TIA for any kind of development if the possible traffic impact of the project is believed to be considerable. The study area would be identified based on the fact that any complete transportation impact analysis should include at least all site access points and major intersections (signalized and un-signalized) adjacent to the site in the study area. Below are the proposed trigger-points to identify if an intersection should be included in the TIA or not:

PROPOSED A.D.T. THRESHOLDS FOR INTERSECTIONS TO BE INCLUDED IN THE TRAFFIC IMPACT ANALYSIS

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

* 2% of A.D.T. for LOS “C” has been used as a guide to calculate the trigger-point values
 * Study area can be expanded by City Engineer

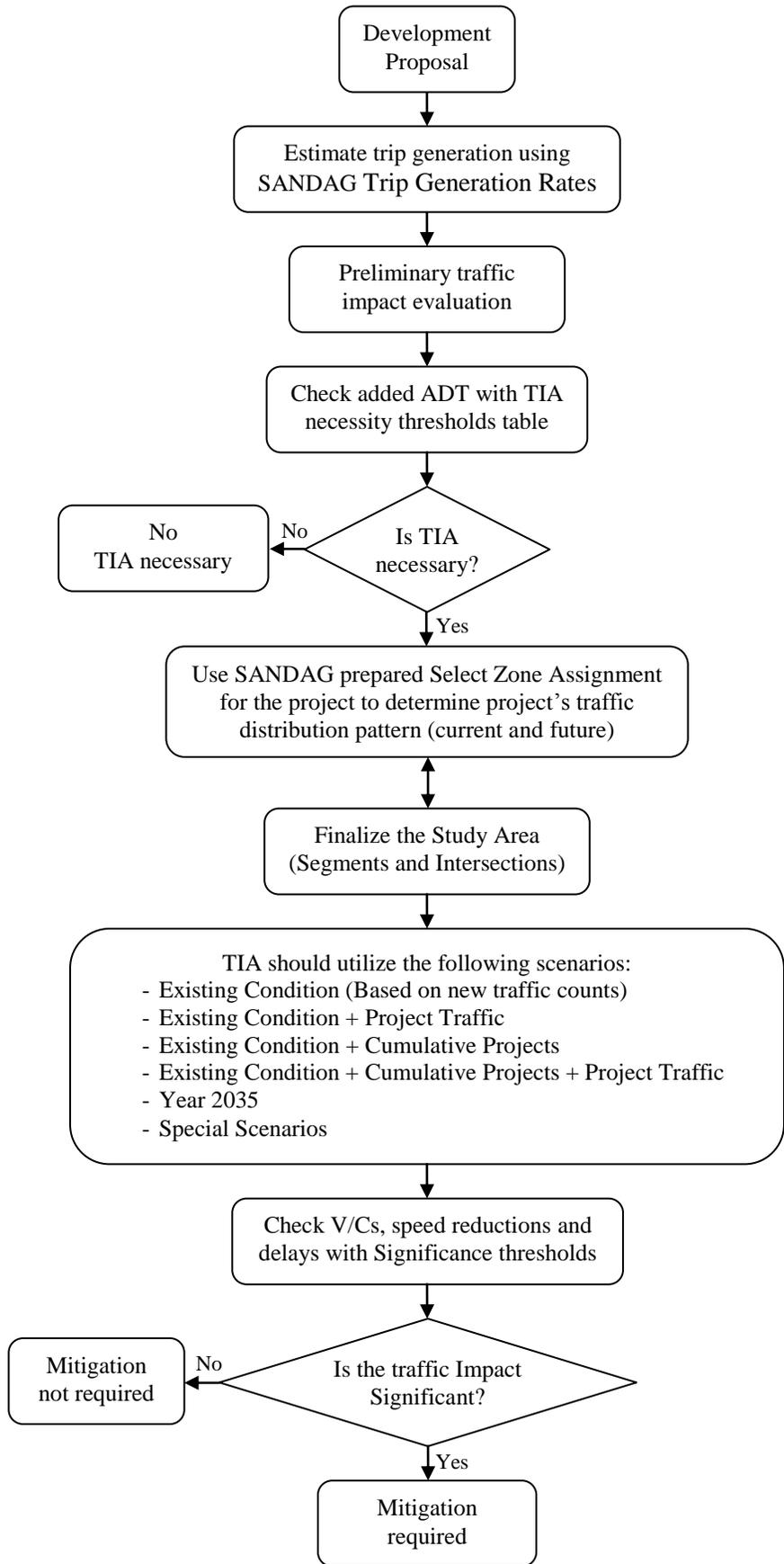
Certain types of developments that their traffic impact is found to be significant need to identify measures to mitigate the traffic impact. In accordance with “SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region”, the following thresholds shall be used to identify if a project is of significance 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 the table below to be exceeded in a roadway segment or an intersection that is operating at a LOS D or worse, it is determined to be a significant project and it shall identify mitigation measures. Below are the proposed thresholds for determining significant traffic impacts to a roadway segment or an intersection.

CITY OF ESCONDIDO PROPOSED THRESHOLDS TO IDENTIFY PROJECTS SIGNIFICANT TRAFFIC IMPACT

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

* No Significant Impact occurs at areas in GP Downtown Specific Area that operates on LOS “D” or better
 * Mitigation measures should also be considered for any segment or intersection operating on LOS “F” subject to less than significant impact.
 * V: Volume C: Capacity (use LOS “E”)

CITY OF ESCONDIDO PROPOSED GUIDELINE FOR PREPARATION OF TRAFFIC IMPACT ANALYSIS



Appendix B

Count Data



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: S Escondido Connector

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			S Escondido Connector Eastbound			S Escondido Connector Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	113	18	9	343	0	0	0	0	64	0	9	556
7:15 AM	0	154	8	7	265	0	0	0	0	61	0	10	505
7:30 AM	0	147	19	12	252	0	0	0	0	58	0	13	501
7:45 AM	0	181	15	11	247	0	0	0	0	58	0	10	522
8:00 AM	0	154	20	8	268	0	0	0	0	83	0	13	546
8:15 AM	0	154	20	6	251	0	0	0	0	65	0	7	503
8:30 AM	0	152	22	8	211	0	0	0	0	43	0	8	444
8:45 AM	0	175	26	9	238	0	0	0	0	42	0	6	496
TOTAL VOLUMES:	0	1230	148	70	2075	0	0	0	0	474	0	76	4073

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	595	60	39	1107	0	0	0	0	241	0	42	2084

PEAK HR FACTOR:	0.835	0.814	0.000	0.969	0.937
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Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			S Escondido Connector Eastbound			S Escondido Connector Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	1	1	0	0	0	0	0	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	2	0	1	1	0	0	0	0	0	0	0	4

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	S Escondido Connector East Leg	S Escondido Connector West Leg	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	0	0	0	0



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: S Escondido Connector

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			S Escondido Connector Eastbound			S Escondido Connector Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	284	62	9	138	0	0	0	0	30	0	12	535
4:15 PM	0	269	36	6	149	0	0	0	0	23	0	9	492
4:30 PM	0	314	31	20	146	0	0	0	0	16	0	6	533
4:45 PM	0	344	46	13	174	0	0	0	0	23	0	6	606
5:00 PM	0	313	48	10	169	0	0	0	0	33	0	11	585
5:15 PM	0	294	44	14	180	0	0	0	0	35	0	8	575
5:30 PM	0	295	47	15	144	0	0	0	0	31	1	11	544
5:45 PM	0	254	50	15	174	0	0	0	0	34	0	7	534
TOTAL VOLUMES:	0	2367	364	102	1274	0	0	0	0	225	1	70	4404

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1246	185	52	667	0	0	0	0	122	1	36	2310

PEAK HR FACTOR:	0.918			0.927			0.000			0.903			0.953
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Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			S Escondido Connector Eastbound			S Escondido Connector Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	0	0	0	0	0	0	0	1

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	0	0	0	0	0	0	0	0	0	1

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	S Escondido Connector East Leg	S Escondido Connector West Leg	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	1	0	1
4:45 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	2	0	2

PEAK VOLUMES:	North Leg	South Leg	East Leg	West Leg	TOTAL
	0	0	1	0	1



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Pkwy
E/W: Brotherton Road

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM

Vehicle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	1	128	4	3	392	15	0	0	8	0	0	5	556
7:15 AM	3	163	7	8	304	15	0	0	6	0	0	4	510
7:30 AM	3	162	7	9	292	15	0	0	4	0	0	3	495
7:45 AM	3	194	14	11	281	13	0	0	4	0	0	7	527
8:00 AM	2	156	7	6	342	10	0	0	8	0	0	9	540
8:15 AM	5	172	12	4	315	6	0	0	4	0	0	5	523
8:30 AM	6	176	10	8	245	4	0	0	4	0	0	5	458
8:45 AM	3	199	11	7	267	10	0	0	2	0	0	8	507
TOTAL VOLUMES:	26	1350	72	56	2438	88	0	0	40	0	0	46	4116

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	10	647	32	31	1269	58	0	0	22	0	0	19	2088

PEAK HR FACTOR:	0.816			0.828			0.688			0.679			0.939
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Bicycle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	1	0	0	0	0	0	0	2

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	0	0	1	0	0	0	0	0	0	2

Pedestrian Counts

	Centre City Pkwy North Leg	Centre City Pkwy South Leg	Brotherton Road East Leg	Brotherton Road West Leg	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	1	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1

PEAK VOLUMES:	North Leg	South Leg	East Leg	West Leg	TOTAL
	0	0	0	0	0



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Pkwy
E/W: Brotherton Road

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Vehicle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	6	349	37	12	150	9	0	0	3	0	0	4	570
4:15 PM	10	299	48	11	153	17	0	0	2	0	0	10	550
4:30 PM	7	343	63	5	139	12	0	0	5	0	0	7	581
4:45 PM	12	383	51	12	179	12	0	0	1	0	0	8	658
5:00 PM	9	355	42	11	189	10	0	0	12	0	0	10	638
5:15 PM	12	327	54	14	195	6	0	0	5	0	0	12	625
5:30 PM	6	330	54	7	166	11	0	0	6	0	0	12	592
5:45 PM	6	301	37	11	200	5	0	0	4	0	0	6	570
TOTAL VOLUMES:	68	2687	386	83	1371	82	0	0	38	0	0	69	4784

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	39	1395	201	44	729	39	0	0	24	0	0	42	2513

PEAK HR FACTOR:	0.916			0.944			0.500			0.875			0.955
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Bicycle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	0	0	0	0	0	0	0	1	2

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	1	0	0	0	0	0	0	0	1	2

Pedestrian Counts

	Centre City Pkwy North Leg	Centre City Pkwy South Leg	Brotherton Road East Leg	Brotherton Road West Leg	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	2	0	0	0	2
4:30 PM	1	0	0	0	1
4:45 PM	1	0	0	0	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	4	0	0	0	4

PEAK VOLUMES:	North Leg	South Leg	East Leg	West Leg	TOTAL
	1	0	0	0	1



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: S. Escondido Blvd
E/W: Brotherton Road

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM

Vehicle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	2	10	0	6	38	0	3	4	0	3	3	5	74
7:15 AM	3	22	1	8	39	0	6	7	2	4	1	4	97
7:30 AM	2	21	0	18	39	0	7	8	1	7	1	14	118
7:45 AM	2	19	3	11	43	0	10	14	1	3	5	17	128
8:00 AM	3	12	3	18	49	1	7	6	0	3	5	4	111
8:15 AM	2	9	1	6	26	1	9	6	1	1	2	6	70
8:30 AM	3	14	3	4	24	0	7	7	4	2	2	2	72
8:45 AM	4	11	4	3	27	1	7	11	0	2	3	5	78
TOTAL VOLUMES:	21	118	15	74	285	3	56	63	9	25	22	57	748

AM Peak Hr Begins at: 7:15 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	10	74	7	55	170	1	30	35	4	17	12	39	454

PEAK HR FACTOR:	0.875	0.831	0.690	0.680	0.887
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Bicycle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	1	0	0	0	0	0	0	0	1

Pedestrian Counts

	S. Escondido Blvd North Leg	S. Escondido Blvd South Leg	Brotherton Road East Leg	Brotherton Road West Leg	TOTAL
7:00 AM	0	0	1	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	1	0	1
TOTAL VOLUMES:	0	0	3	0	3

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	0	0	0	0



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: S. Escondido Blvd
E/W: Brotherton Road

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Vehicle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	1	37	2	6	27	0	33	12	5	5	3	7	138
4:15 PM	4	32	2	4	33	1	46	8	5	4	5	12	156
4:30 PM	1	38	5	9	35	0	57	8	4	1	7	7	172
4:45 PM	5	34	3	7	38	1	48	11	4	1	3	9	164
5:00 PM	8	26	2	10	32	1	36	14	4	1	4	6	144
5:15 PM	5	33	2	13	26	1	46	15	6	2	3	5	157
5:30 PM	5	27	4	5	29	1	47	14	3	6	5	7	153
5:45 PM	4	31	2	7	37	0	39	8	3	1	2	8	142
TOTAL VOLUMES:	33	258	22	61	257	5	352	90	34	21	32	61	1226

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	19	131	12	39	131	3	187	48	18	5	17	27	637

PEAK HR FACTOR:	0.920			0.940			0.917			0.817			0.926
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Bicycle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Brotherton Road Eastbound			Brotherton Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:00 PM	1	0	0	0	0	0	0	0	1	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	3	0	0	0	0	0	0	0	3
TOTAL VOLUMES:	1	0	0	0	4	0	0	0	1	0	0	1	7

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	0	0	0	0	0	0	0	1	0	0	1	3

Pedestrian Counts

	S. Escondido Blvd North Leg	S. Escondido Blvd South Leg	Brotherton Road East Leg	Brotherton Road West Leg	TOTAL
4:00 PM	0	0	4	0	4
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	1	1	2
5:00 PM	0	0	0	0	0
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	1	6	1	8

PEAK VOLUMES:	North Leg	South Leg	East Leg	West Leg	TOTAL
	0	1	2	1	4



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Pkwy
E/W: Citracado Parkway

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM

Vehicle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	3	121	5	0	387	21	14	2	8	61	38	1	661
7:15 AM	4	149	6	0	275	32	13	8	9	43	26	2	567
7:30 AM	9	145	2	2	271	22	17	8	8	52	31	4	571
7:45 AM	2	186	10	1	280	21	18	9	9	53	22	4	615
8:00 AM	4	134	6	7	319	17	16	7	9	51	20	4	594
8:15 AM	4	173	7	1	298	19	12	7	4	37	16	0	578
8:30 AM	1	165	12	2	250	15	17	8	2	31	14	6	523
8:45 AM	4	193	8	0	262	16	9	9	6	36	8	6	557
TOTAL VOLUMES:	31	1266	56	13	2342	163	116	58	55	364	175	27	4666

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	18	601	23	3	1213	96	62	27	34	209	117	11	2414

PEAK HR FACTOR:	0.811			0.804			0.854			0.843			0.913
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Bicycle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	0	0	1	0	0	0	0	2

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	0	0	0	0	1	0	0	0	0	2

Pedestrian Counts

	Centre City Pkwy North Leg		Centre City Pkwy South Leg		Citracado Parkway East Leg		Citracado Parkway West Leg		TOTAL
	NL	NT	SL	ST	EL	ET	WL	WT	
7:00 AM	1	0	0	0	0	0	1	0	2
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	2	0	0	0	0	0	1	0	3

PEAK VOLUMES:	North Leg		South Leg		East Leg		West Leg		TOTAL
	2	0	0	0	0	0	1	0	3



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Pkwy
E/W: Citracado Parkway

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Vehicle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	3	346	23	4	137	14	26	30	4	27	14	3	631
4:15 PM	6	326	23	2	144	11	35	22	5	24	12	2	612
4:30 PM	5	373	19	2	146	8	32	23	2	30	12	5	657
4:45 PM	8	391	22	1	170	14	41	26	3	23	14	3	716
5:00 PM	8	365	23	6	180	14	27	17	5	26	11	5	687
5:15 PM	3	355	14	4	196	16	31	24	3	32	9	6	693
5:30 PM	3	358	22	6	156	11	22	15	5	25	9	5	637
5:45 PM	6	327	31	10	181	20	31	17	0	29	17	5	674
TOTAL VOLUMES:	42	2841	177	35	1310	108	245	174	27	216	98	34	5307

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	24	1484	78	13	692	52	131	90	13	111	46	19	2753

PEAK HR FACTOR:	0.942			0.876			0.836			0.936			0.961
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Bicycle Counts

	Centre City Pkwy Northbound			Centre City Pkwy Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	Centre City Pkwy North Leg		Centre City Pkwy South Leg		Citracado Parkway East Leg		Citracado Parkway West Leg		TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0

PEAK VOLUMES:	North Leg		South Leg		East Leg		West Leg		TOTAL
	0	0	0	0	0	0	0	0	0



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: S. Escondido Blvd
E/W: Citracado Parkway

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM

Vehicle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	20	6	0	0	4	52	4	2	0	0	28	6	122
7:15 AM	8	3	0	0	2	44	14	0	1	0	19	4	95
7:30 AM	16	9	2	2	3	51	6	3	3	0	16	5	116
7:45 AM	13	4	0	1	2	55	15	4	1	0	15	6	116
8:00 AM	18	1	0	2	1	46	10	5	5	0	12	4	104
8:15 AM	14	2	1	1	0	32	10	3	2	0	11	2	78
8:30 AM	8	1	0	1	1	29	18	1	3	0	9	3	74
8:45 AM	6	8	0	1	2	25	12	4	1	1	19	0	79
TOTAL VOLUMES:	103	34	3	8	15	334	89	22	16	1	129	30	784

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	57	22	2	3	11	202	39	9	5	0	78	21	449

PEAK HR FACTOR:	0.750	0.931	0.663	0.728	0.920
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Bicycle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1	0	0	0	0	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1	0	0	1	0	0	0	0	0	0	0	2

Pedestrian Counts

	S. Escondido Blvd North Leg	S. Escondido Blvd South Leg	Citracado Parkway East Leg	Citracado Parkway West Leg	TOTAL
7:00 AM	1	0	2	0	3
7:15 AM	0	0	0	0	0
7:30 AM	0	0	1	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	1	0	4	0	5

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	1	0	3	0	4



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: S. Escondido Blvd
E/W: Citracado Parkway

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Vehicle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	5	3	1	2	3	30	39	11	3	0	8	3	108
4:15 PM	7	9	1	5	4	23	28	10	4	0	8	2	101
4:30 PM	4	12	4	2	9	21	28	9	4	0	8	7	108
4:45 PM	4	5	4	0	7	33	27	11	3	3	4	0	101
5:00 PM	2	4	1	5	3	34	24	14	6	1	12	5	111
5:15 PM	5	11	2	4	5	28	18	14	2	0	6	5	100
5:30 PM	6	9	3	3	3	21	15	16	0	1	8	3	88
5:45 PM	5	8	0	6	7	30	26	22	8	0	10	1	123
TOTAL VOLUMES:	38	61	16	27	41	220	205	107	30	5	64	26	840

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	18	32	6	18	18	113	83	66	16	2	36	14	422

PEAK HR FACTOR:	0.778			0.866			0.737			0.722			0.858
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Bicycle Counts

	S. Escondido Blvd Northbound			S. Escondido Blvd Southbound			Citracado Parkway Eastbound			Citracado Parkway Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	2	0	0	0	0	1	0	0	4

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	0	1	0	0	0	0	0	0	0	2

Pedestrian Counts

	S. Escondido Blvd North Leg			S. Escondido Blvd South Leg			Citracado Parkway East Leg			Citracado Parkway West Leg			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	1			0			2			0			3
4:15 PM	0			0			2			0			2
4:30 PM	0			0			0			0			0
4:45 PM	0			0			2			0			2
5:00 PM	0			0			0			0			0
5:15 PM	0			0			4			0			4
5:30 PM	0			0			1			0			1
5:45 PM	0			0			1			0			1
TOTAL VOLUMES:	1			0			12			0			13

PEAK VOLUMES:	North Leg	South Leg	East Leg	West Leg	TOTAL
	0	0	6	0	6



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: Cranston Drive

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Cranston Drive Eastbound			Cranston Drive Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	2	127	4	2	440	0	0	0	12	0	0	1	589
7:15 AM	4	151	4	0	338	2	0	0	12	0	0	2	513
7:30 AM	4	148	6	0	316	6	0	0	10	0	0	7	497
7:45 AM	1	189	2	3	321	2	0	0	3	0	0	3	524
8:00 AM	3	147	2	1	389	3	0	0	6	0	0	5	556
8:15 AM	3	176	5	1	330	0	0	0	7	0	0	1	524
8:30 AM	3	184	6	2	270	0	0	0	1	0	0	5	472
8:45 AM	4	179	4	2	295	1	0	0	0	0	0	6	492
TOTAL VOLUMES:	24	1301	33	11	2699	14	0	0	51	0	0	30	4167

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	11	615	16	5	1415	10	0	0	37	0	0	13	2123

PEAK HR FACTOR:	0.836			0.809			0.771			0.500			0.901
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Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Cranston Drive Eastbound			Cranston Drive Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	Centre City Parkway North Leg		Centre City Parkway South Leg		Cranston Drive East Leg		Cranston Drive West Leg		TOTAL
7:00 AM	0		0		0		0		0
7:15 AM	0		0		0		0		0
7:30 AM	0		0		0		0		0
7:45 AM	0		0		0		0		0
8:00 AM	0		1		0		0		1
8:15 AM	0		0		0		0		0
8:30 AM	0		0		0		0		0
8:45 AM	0		0		0		0		0
TOTAL VOLUMES:	0		1		0		0		1

PEAK VOLUMES:	North Leg		South Leg		East Leg		West Leg		TOTAL
	0		1		0		0		1



PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: Cranston Drive

Date: 9/10/2019
Day: TUESDAY
Project # 143-19548

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Cranston Drive Eastbound			Cranston Drive Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	9	361	9	2	162	2	0	0	4	0	0	0	549
4:15 PM	4	352	16	7	155	4	0	0	3	0	0	2	545
4:30 PM	8	386	19	0	174	0	0	0	5	0	0	5	597
4:45 PM	4	406	5	1	198	5	0	0	5	0	0	3	627
5:00 PM	8	399	11	5	202	4	0	0	2	0	0	2	633
5:15 PM	5	383	14	1	233	3	0	0	1	0	0	1	641
5:30 PM	8	374	21	5	171	0	0	0	3	0	0	2	584
5:45 PM	4	355	18	1	196	2	0	0	3	0	0	0	579
TOTAL VOLUMES:	50	3016	113	22	1491	20	0	0	26	0	0	15	4755

PM Peak Hr Begins at: 4:30 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	25	1574	49	7	807	12	0	0	13	0	0	11	2498

PEAK HR FACTOR:	0.986	0.871	0.650	0.550	0.974
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Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Cranston Drive Eastbound			Cranston Drive Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	Cranston Drive East Leg	Cranston Drive West Leg	TOTAL
4:00 PM	0	1	0	0	1
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	1	1	0	0	2

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	1	0	0	0	1



City of Escondido
 South Escondido Boulevard
 B/ South Escondido Connector - Brotherton Road

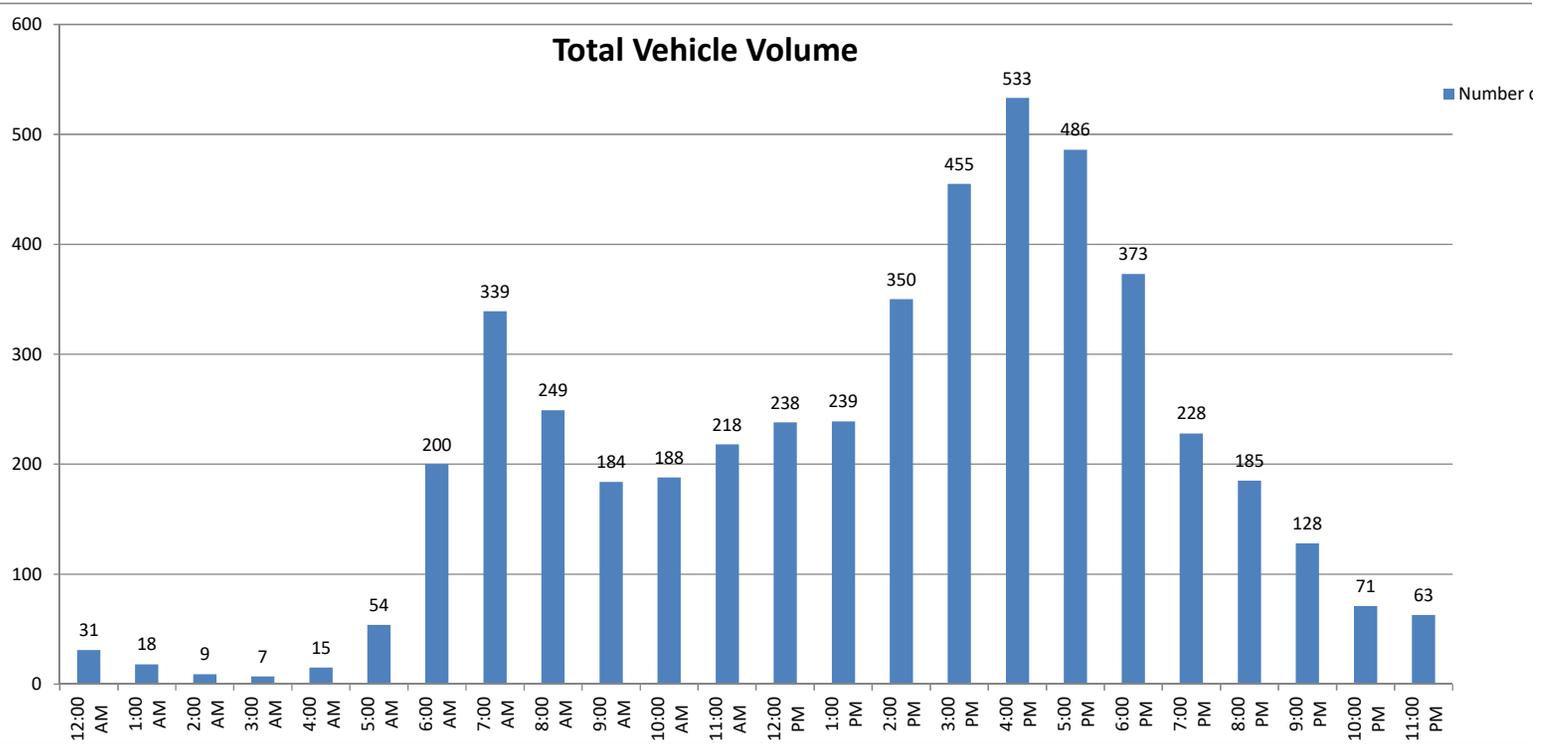
File Name 001
 Site Code: 143-19548
 24 Hour Directional Volume Count

Date: 9/10/2019	Northbound				Southbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Morning	Afternoon
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	28			6	31				
12:15	4	20			4	22				
12:30	4	38			0	25				
12:45	4	39	18	125	3	35	13	113	31	238
1:00	2	27			5	29				
1:15	4	31			4	23				
1:30	1	35			1	31				
1:45	1	35	8	128	0	28	10	111	18	239
2:00	0	38			0	36				
2:15	3	53			1	25				
2:30	2	65			0	25				
2:45	1	69	6	225	2	39	3	125	9	350
3:00	1	79			2	56				
3:15	1	75			0	32				
3:30	2	71			1	35				
3:45	0	78	4	303	0	29	3	152	7	455
4:00	2	79			2	41				
4:15	1	88			1	28				
4:30	3	110			2	44				
4:45	2	98	8	375	2	45	7	158	15	533
5:00	2	70			3	42				
5:15	3	84			12	37				
5:30	4	84			8	40				
5:45	6	87	15	325	16	42	39	161	54	486
6:00	6	78			16	40				
6:15	13	53			35	30				
6:30	17	55			40	32				
6:45	14	45	50	231	59	40	150	142	200	373
7:00	18	35			44	24				
7:15	31	49			47	31				
7:30	44	38			57	15				
7:45	44	19	137	141	54	17	202	87	339	228
8:00	23	28			65	24				
8:15	22	22			32	17				
8:30	23	33			28	22				
8:45	26	21	94	104	30	18	155	81	249	185
9:00	11	24			20	12				
9:15	23	26			33	15				
9:30	19	20			30	12				
9:45	27	14	80	84	21	5	104	44	184	128
10:00	29	14			28	12				
10:15	19	8			19	7				
10:30	12	12			27	9				
10:45	31	6	91	40	23	3	97	31	188	71
11:00	34	12			24	10				
11:15	18	12			31	7				
11:30	31	5			28	5				
11:45	27	9	110	38	25	3	108	25	218	63
Totals	621	2119			891	1230				
Combined Totals		2740				2121				
ADT										4861
AM Peak Hour	715	AM			715	AM				
Volume	142				223					
P.H.F.	0.807				0.858					
PM Peak Hour		400	PM			430	PM			
Volume		375				168				
P.H.F.		0.852				0.933				
Percentage	22.7%	77.3%			42.0%	58.0%				



24 Hour Volume Plot
South Escondido Boulevard
B/ South Escondido Connector - Brotherton Road
 9/10/2019

Start Time	9/10/2019
12:00 AM	31
1:00 AM	18
2:00 AM	9
3:00 AM	7
4:00 AM	15
5:00 AM	54
6:00 AM	200
7:00 AM	339
8:00 AM	249
9:00 AM	184
10:00 AM	188
11:00 AM	218
12:00 PM	238
1:00 PM	239
2:00 PM	350
3:00 PM	455
4:00 PM	533
5:00 PM	486
6:00 PM	373
7:00 PM	228
8:00 PM	185
9:00 PM	128
10:00 PM	71
11:00 PM	63
Total	4861



Volumes represent the combined totals for both directions



City of Escondido
 South Escondido Boulevard
 B/ Brotherton Road - Citricado Parkway

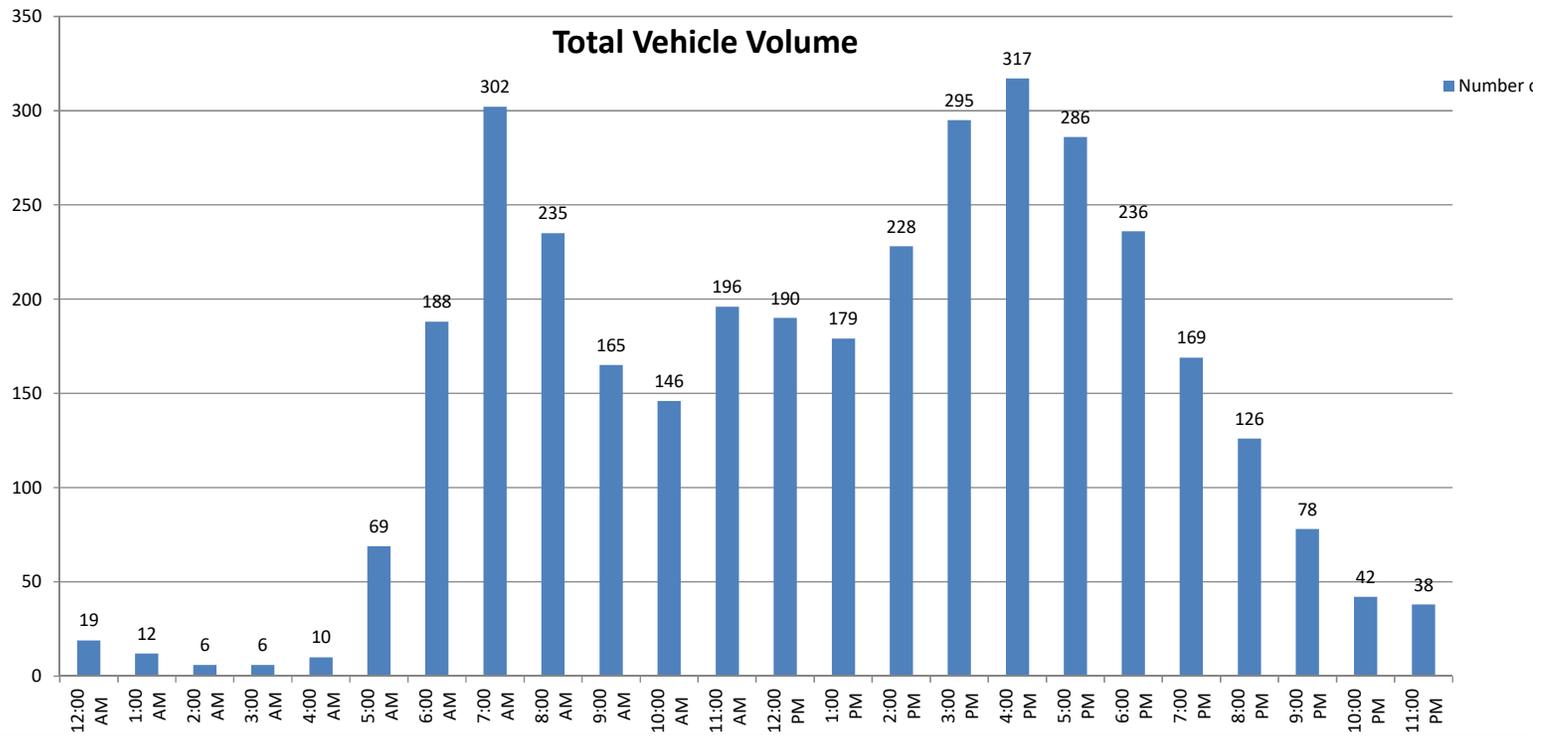
File Name 002
 Site Code: 143-19548
 24 Hour Directional Volume Count

Date: 9/10/2019	Northbound				Southbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Morning	Afternoon
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	2	19			5	27				
12:15	1	15			3	20				
12:30	4	24			0	39				
12:45	2	18	9	76	2	28	10	114	19	190
1:00	1	13			4	31				
1:15	0	14			5	23				
1:30	1	17			0	29				
1:45	1	21	3	65	0	31	9	114	12	179
2:00	0	22			0	25				
2:15	3	26			1	23				
2:30	0	34			0	27				
2:45	1	36	4	118	1	35	2	110	6	228
3:00	0	43			2	52				
3:15	0	39			3	31				
3:30	0	35			0	37				
3:45	0	31	0	148	1	27	6	147	6	295
4:00	0	42			1	38				
4:15	2	45			2	34				
4:30	2	46			3	39				
4:45	0	33	4	166	0	40	6	151	10	317
5:00	4	27			5	40				
5:15	1	34			20	33				
5:30	1	38			16	38				
5:45	2	33	8	132	20	43	61	154	69	286
6:00	4	19			21	31				
6:15	6	31			35	39				
6:30	10	30			47	31				
6:45	10	19	30	99	55	36	158	137	188	236
7:00	13	20			59	31				
7:15	19	25			59	29				
7:30	19	15			53	14				
7:45	22	17	73	77	58	18	229	92	302	169
8:00	16	7			63	18				
8:15	14	15			37	14				
8:30	22	14			32	28				
8:45	20	12	72	48	31	18	163	78	235	126
9:00	12	7			19	13				
9:15	17	11			29	17				
9:30	12	7			28	14				
9:45	16	7	57	32	32	2	108	46	165	78
10:00	17	5			25	9				
10:15	9	3			21	7				
10:30	14	4			24	3				
10:45	13	5	53	17	23	6	93	25	146	42
11:00	19	2			31	8				
11:15	10	6			36	3				
11:30	18	5			25	7				
11:45	21	4	68	17	36	3	128	21	196	38
Totals	381	995			973	1189				
Combined Totals		1376				2162				
ADT										3538
AM Peak Hour	715	AM			715	AM				
Volume	76				233					
P.H.F.	0.864				0.925					
PM Peak Hour		400	PM			245	PM			
Volume		166				155				
P.H.F.		0.902				0.745				
Percentage	27.7%	72.3%			45.0%	55.0%				



24 Hour Volume Plot
South Escondido Boulevard
B/ Brotherton Road - Citricado Parkway
 9/10/2019

Start Time	9/10/2019
12:00 AM	19
1:00 AM	12
2:00 AM	6
3:00 AM	6
4:00 AM	10
5:00 AM	69
6:00 AM	188
7:00 AM	302
8:00 AM	235
9:00 AM	165
10:00 AM	146
11:00 AM	196
12:00 PM	190
1:00 PM	179
2:00 PM	228
3:00 PM	295
4:00 PM	317
5:00 PM	286
6:00 PM	236
7:00 PM	169
8:00 PM	126
9:00 PM	78
10:00 PM	42
11:00 PM	38
Total	3538



Volumes represent the combined totals for both directions



City of Escondido
 South Escondido Boulevard
 B/ Citricado Parkway - Cranston Drive

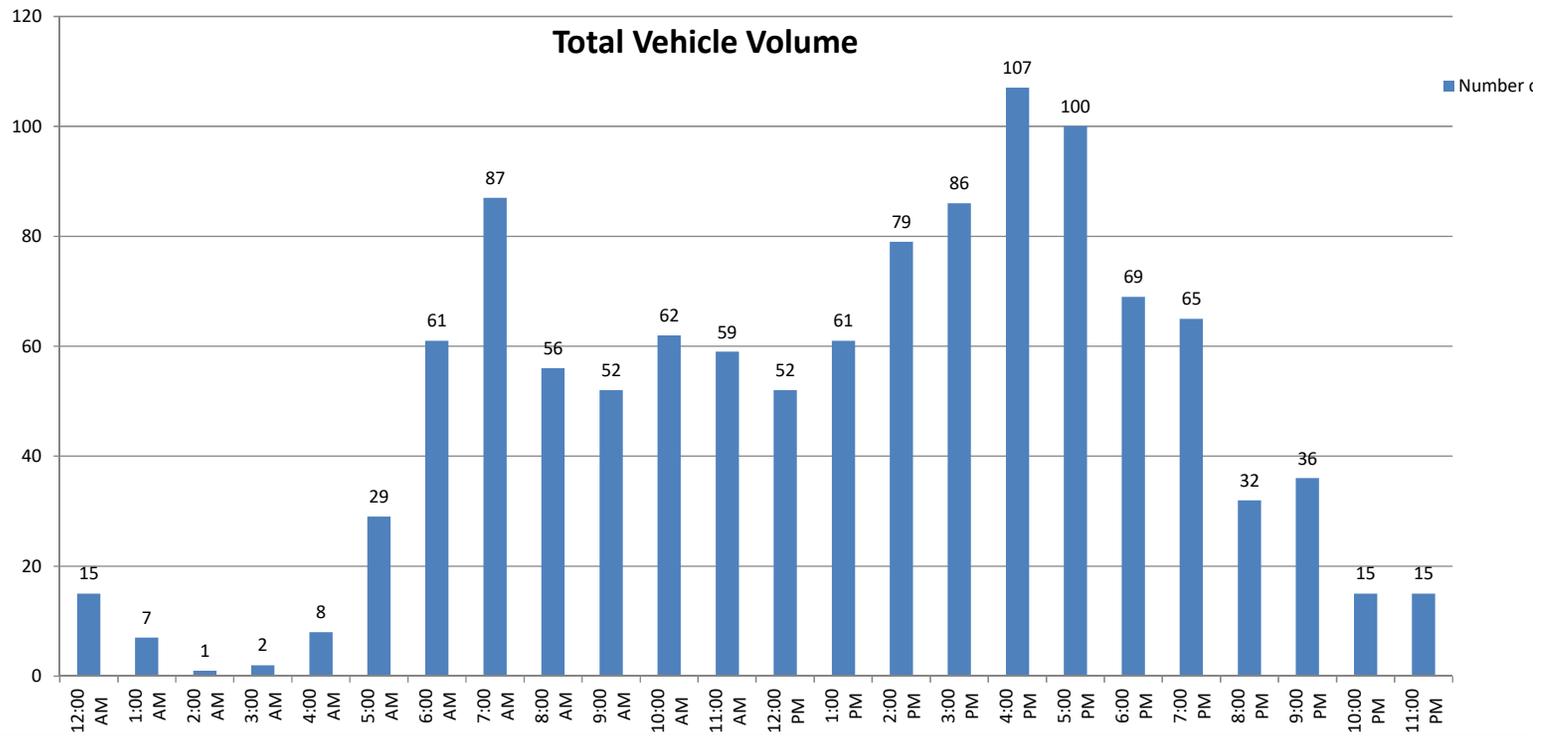
File Name 003
 Site Code: 143-19548
 24 Hour Directional Volume Count

Date: 9/10/2019	Northbound				Southbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Morning	Afternoon
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	2	10			3	3				
12:15	1	6			2	4				
12:30	3	5			2	9				
12:45	0	11	6	32	2	4	9	20	15	52
1:00	1	9			0	6				
1:15	1	12			1	1				
1:30	0	11			0	6				
1:45	2	12	4	44	2	4	3	17	7	61
2:00	0	16			0	11				
2:15	0	16			0	4				
2:30	0	9			0	7				
2:45	1	11	1	52	0	5	0	27	1	79
3:00	0	12			0	5				
3:15	1	22			0	8				
3:30	0	15			0	6				
3:45	1	12	2	61	0	6	0	25	2	86
4:00	2	10			0	6				
4:15	2	18			0	9				
4:30	2	26			0	14				
4:45	2	11	8	65	0	13	0	42	8	107
5:00	3	6			1	8				
5:15	7	21			3	8				
5:30	5	21			0	5				
5:45	7	16	22	64	3	15	7	36	29	100
6:00	3	10			1	5				
6:15	19	11			0	8				
6:30	16	9			4	9				
6:45	17	6	55	36	1	11	6	33	61	69
7:00	25	9			3	6				
7:15	11	7			4	7				
7:30	18	15			4	6				
7:45	17	9	71	40	5	6	16	25	87	65
8:00	12	4			5	5				
8:15	5	3			2	4				
8:30	8	5			2	4				
8:45	17	3	42	15	5	4	14	17	56	32
9:00	6	6			1	5				
9:15	11	4			4	6				
9:30	12	4			1	3				
9:45	13	5	42	19	4	3	10	17	52	36
10:00	12	1			6	3				
10:15	10	3			8	0				
10:30	4	1			5	3				
10:45	12	2	38	7	5	2	24	8	62	15
11:00	16	4			2	1				
11:15	6	2			5	2				
11:30	12	2			2	1				
11:45	9	1	43	9	7	2	16	6	59	15
Totals	334	444			105	273				
Combined Totals		778				378				
ADT										1156
AM Peak Hour	615	AM			1000	AM				
Volume	77				24					
P.H.F.	0.770				0.750					
PM Peak Hour		515	PM			415	PM			
Volume		68				44				
P.H.F.		0.810				0.786				
Percentage	42.9%	57.1%			27.8%	72.2%				



24 Hour Volume Plot
South Escondido Boulevard
B/ Citricado Parkway - Cranston Drive
 9/10/2019

Start Time	9/10/2019
12:00 AM	15
1:00 AM	7
2:00 AM	1
3:00 AM	2
4:00 AM	8
5:00 AM	29
6:00 AM	61
7:00 AM	87
8:00 AM	56
9:00 AM	52
10:00 AM	62
11:00 AM	59
12:00 PM	52
1:00 PM	61
2:00 PM	79
3:00 PM	86
4:00 PM	107
5:00 PM	100
6:00 PM	69
7:00 PM	65
8:00 PM	32
9:00 PM	36
10:00 PM	15
11:00 PM	15
Total	1156



Volumes represent the combined totals for both directions

Appendix C

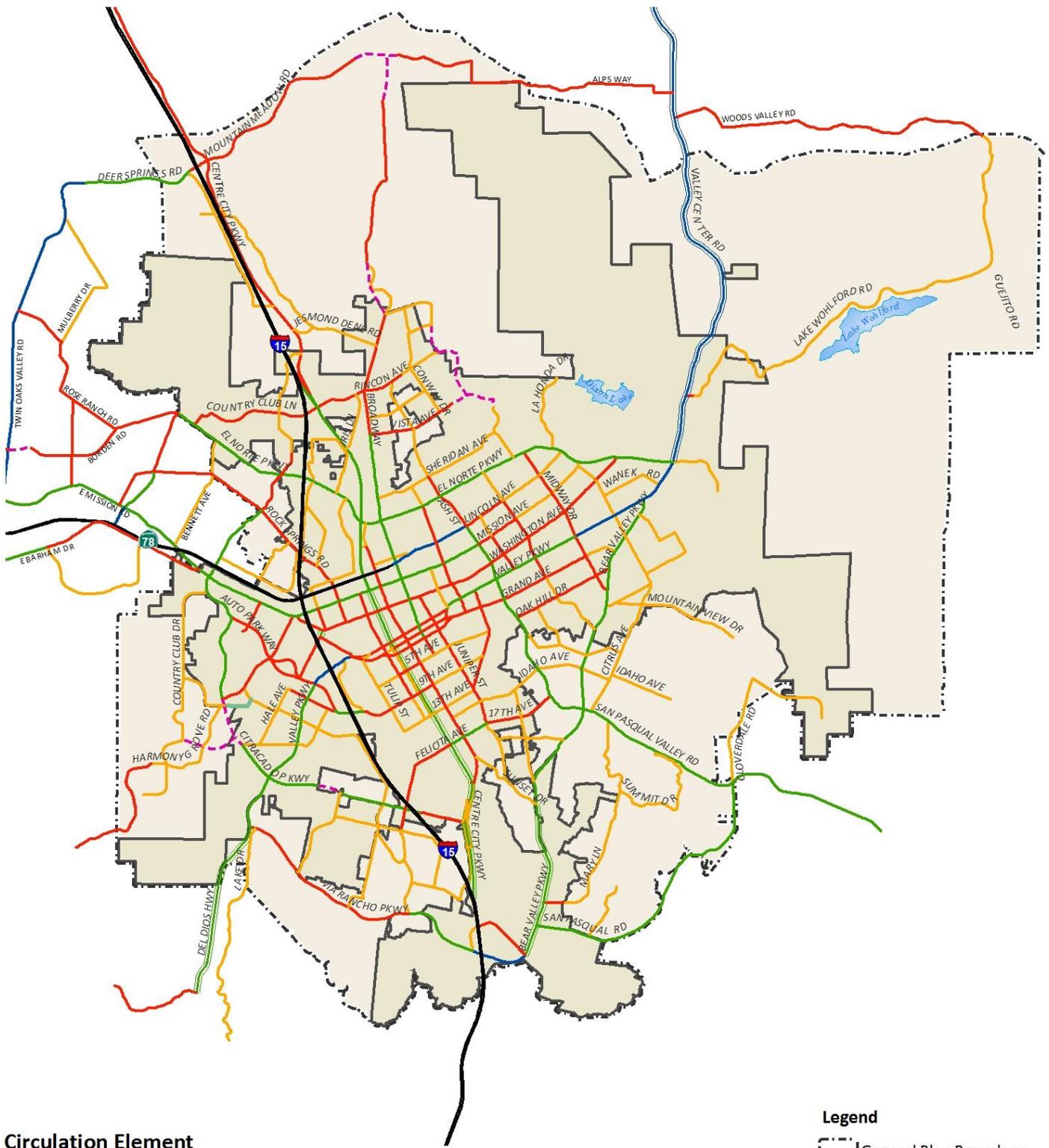
City of Escondido General Plan Excerpts

City of Escondido GENERAL PLAN

MAY 2012

Resolution 2012-52





Circulation Element

- Freeway
- Super Prime Arterial
- Prime Arterial
- Super Major Road
- Major Road
- Collector
- Local Collector
- Future Alignment

Legend

- General Plan Boundary
- City Limits
- Lakes
- 0 0.5 1 Miles



Escondido General Plan

Circulation Diagram
Figure III-6

Appendix D

Transit Map and Schedule

Center

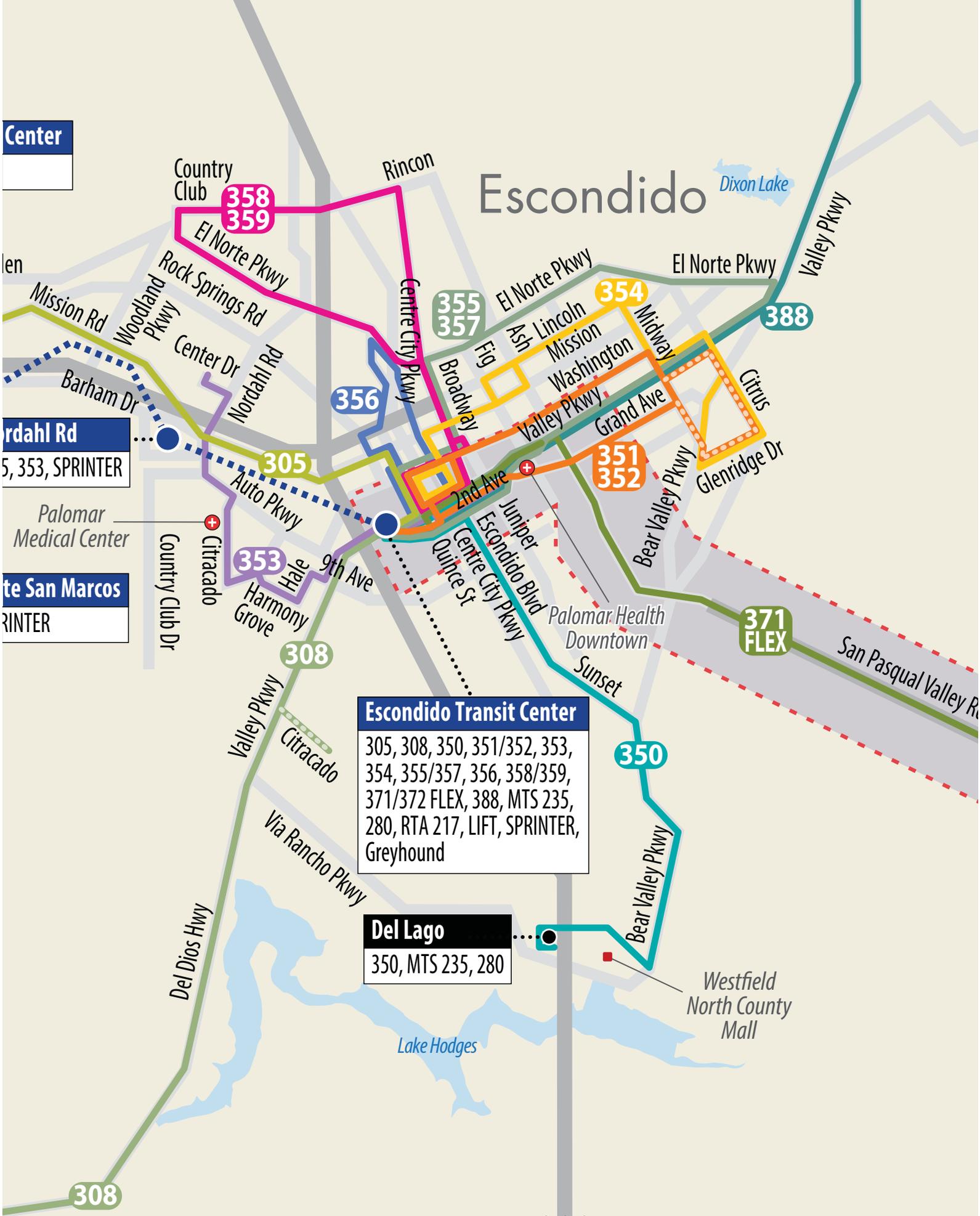
rdahl Rd
5, 353, SPRINTER

te San Marcos
RINTER

Escondido Transit Center
305, 308, 350, 351/352, 353,
354, 355/357, 356, 358/359,
371/372 FLEX, 388, MTS 235,
280, RTA 217, LIFT, SPRINTER,
Greyhound

Del Lago
350, MTS 235, 280

Escondido



Appendix E

City of Escondido *Bicycle Master Plan* Excerpts

Bicycle Master Plan



City of Escondido

Case File No. PHG 12-0018

City Council
Sam Abed, Mayor
Marie Waldron, Deputy Mayor
Olga Diaz, Council Member
Ed Gallo, Council Member
Michael Morasco, Council Member

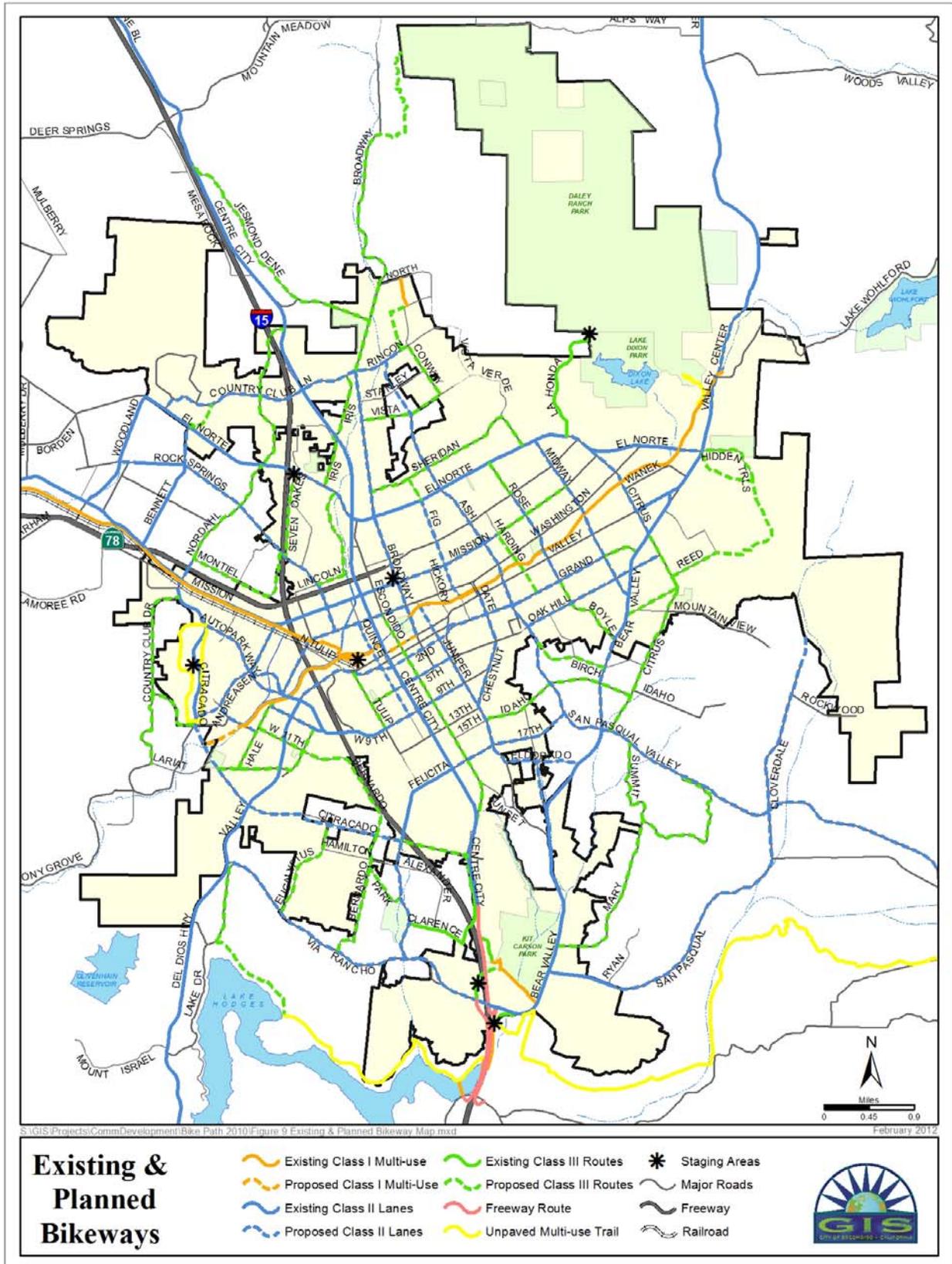
Staff Recognition
Jay Paul, Associate Planner-Project Manager
Jay Petrek-Principal Planner
Peggy Chapin – Contract Planner
Homi Namdari-Assistant City Engineer
Ali Shahzad-Associate Engineer, Traffic
Samuel Cottrell-Associate Engineer, Design
Daniel Hildebrand-GIS Manager
Jennifer Kay-GIS Technician

(Draft CC – October 2012)

Adopted by City Council Resolution No. 2012-162 on October _____ 2012



Figure ES 1 Existing and Proposed Bicycle Facilities



Appendix F

Existing LOS Calculations

Please note for intersections #3 (S. Escondido Blvd at Brotherton Rd) and #5 (S. Escondido Blvd at Citracado Pkwy), the HCM analysis software does not allow for the analysis of the actual stop sign configuration as implemented in the field (i.e. 3 legs with stop signs and the EB approach without a stop sign). The HCM software output states “HCM does not support more than two Stop controlled approaches at the intersection”. Therefore, there were two choices in how to report the delay: all-way stop or two-way stop control. An all-way stop reports one delay, which is better LOS than showing the minor leg approach delays, thus a configuration of stop signs for the NB and SB approaches was used and reported.

Intersection						
Int Delay, s/veh	5.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	241	42	595	60	39	1107
Future Vol, veh/h	241	42	595	60	39	1107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	262	46	647	65	42	1203

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1333	324	0	0	712	0
Stage 1	647	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 145	672	-	-	884	-
Stage 1	483	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 138	672	-	-	884	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	439	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.5	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	334	672	884	-
HCM Lane V/C Ratio	-	-	0.784	0.068	0.048	-
HCM Control Delay (s)	-	-	45.7	10.7	9.3	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	6.4	0.2	0.2	-

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

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	22	0	0	19	10	647	32	31	1269	58
Future Vol, veh/h	0	0	22	0	0	19	10	647	32	31	1269	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	24	0	0	21	11	703	35	34	1379	63

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	-	-	721	-	-	369	1442	0	0	738	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	370	0	0	628	466	-	-	864	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	370	-	-	628	466	-	-	864	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB			
HCM Control Delay, s	15.4		10.9			0.2		0.2			
HCM LOS	C		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	466	-	-	370	628	864	-	-
HCM Lane V/C Ratio	0.023	-	-	0.065	0.033	0.039	-	-
HCM Control Delay (s)	12.9	-	-	15.4	10.9	9.3	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0.1	-	-

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	35	4	17	12	39	10	74	7	55	170	1
Future Vol, veh/h	30	35	4	17	12	39	10	74	7	55	170	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	38	4	18	13	42	11	80	8	60	185	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	42	0	0	269	197	40	220	178	34
Stage 1	-	-	-	-	-	-	106	106	-	70	70	-
Stage 2	-	-	-	-	-	-	163	91	-	150	108	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1550	-	-	1567	-	-	684	699	1031	736	716	1039
Stage 1	-	-	-	-	-	-	900	807	-	940	837	-
Stage 2	-	-	-	-	-	-	839	820	-	853	806	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1567	-	-	529	675	1031	647	692	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	529	675	-	647	692	-
Stage 1	-	-	-	-	-	-	880	789	-	919	827	-
Stage 2	-	-	-	-	-	-	643	810	-	744	788	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.2			1.8			11.3			13.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	1550	-	-	1567	-	-	681
HCM Lane V/C Ratio	0.147	0.021	-	-	0.012	-	-	0.361
HCM Control Delay (s)	11.3	7.4	0	-	7.3	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	1.6

AM Existing
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	27	34	209	117	11	18	601	23	3	1213	96
Future Volume (veh/h)	62	27	34	209	117	11	18	601	23	3	1213	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	29	37	227	127	12	20	653	25	3	1318	104
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	355	183	233	412	416	39	34	1933	844	6	1877	837
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.02	0.54	0.54	0.00	0.53	0.53
Sat Flow, veh/h	1248	740	944	1333	1682	159	1781	3554	1552	1781	3554	1585
Grp Volume(v), veh/h	67	0	66	227	0	139	20	653	25	3	1318	104
Grp Sat Flow(s),veh/h/ln	1248	0	1683	1333	0	1841	1781	1777	1552	1781	1777	1585
Q Serve(g_s), s	2.7	0.0	1.8	9.4	0.0	3.6	0.7	6.0	0.4	0.1	16.3	1.9
Cycle Q Clear(g_c), s	6.3	0.0	1.8	11.2	0.0	3.6	0.7	6.0	0.4	0.1	16.3	1.9
Prop In Lane	1.00		0.56	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	416	412	0	456	34	1933	844	6	1877	837
V/C Ratio(X)	0.19	0.00	0.16	0.55	0.00	0.31	0.59	0.34	0.03	0.52	0.70	0.12
Avail Cap(c_a), veh/h	602	0	749	675	0	819	152	2919	1275	122	2858	1275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	17.2	21.6	0.0	17.9	28.4	7.4	6.2	29.1	10.3	7.0
Incr Delay (d2), s/veh	0.3	0.0	0.2	1.2	0.0	0.4	15.4	0.1	0.0	57.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.7	2.8	0.0	1.4	0.4	1.8	0.1	0.1	5.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.7	0.0	17.4	22.8	0.0	18.3	43.8	7.5	6.2	86.1	10.8	7.0
LnGrp LOS	C	A	B	C	A	B	D	A	A	F	B	A
Approach Vol, veh/h		133			366			698			1425	
Approach Delay, s/veh		19.1			21.1			8.5			10.7	
Approach LOS		B			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	35.8		18.5	5.1	34.9		18.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	48.0		26.0	5.0	47.0		26.0				
Max Q Clear Time (g_c+I1), s	2.1	8.0		8.3	2.7	18.3		13.2				
Green Ext Time (p_c), s	0.0	5.3		0.5	0.0	12.6		1.2				
Intersection Summary												
HCM 6th Ctrl Delay	12.0											
HCM 6th LOS	B											

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	39	9	5	0	78	21	57	22	2	3	11	202
Future Vol, veh/h	39	9	5	0	78	21	57	22	2	3	11	202
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	10	5	0	85	23	62	24	2	3	12	220
Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	109	0	0	15	0	0	310	206	16	211	197	98
Stage 1	-	-	-	-	-	-	97	97	-	98	98	-
Stage 2	-	-	-	-	-	-	213	109	-	113	99	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1481	-	-	1603	-	-	642	691	1063	746	699	958
Stage 1	-	-	-	-	-	-	910	815	-	908	814	-
Stage 2	-	-	-	-	-	-	789	805	-	892	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1480	-	-	1603	-	-	477	670	1060	706	678	957
Mov Cap-2 Maneuver	-	-	-	-	-	-	477	670	-	706	678	-
Stage 1	-	-	-	-	-	-	884	791	-	881	813	-
Stage 2	-	-	-	-	-	-	599	804	-	836	789	-
Approach	EB	WB			NB			SB				
HCM Control Delay, s	5.5	0			12.7			10.2				
HCM LOS					B			B				
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	477	691	1480	-	-	1603	-	-	933			
HCM Lane V/C Ratio	0.13	0.038	0.029	-	-	-	-	-	0.252			
HCM Control Delay (s)	13.7	10.4	7.5	0	-	0	-	-	10.2			
HCM Lane LOS	B	B	A	A	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0	-	-	1			

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	37	0	0	13	11	615	16	5	1415	10
Future Vol, veh/h	0	0	37	0	0	13	11	615	16	5	1415	10
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	40	0	0	14	12	668	17	5	1538	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	777	-	-	344	1550	0	0	686	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	340	0	0	652	424	-	-	904	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	339	-	-	651	424	-	-	903	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	17		10.7		0.2		0			
HCM LOS	C		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	424	-	-	339	651	903	-	-
HCM Lane V/C Ratio	0.028	-	-	0.119	0.022	0.006	-	-
HCM Control Delay (s)	13.7	-	-	17	10.7	9	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	122	36	1246	185	52	667
Future Vol, veh/h	122	36	1246	185	52	667
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	39	1354	201	57	725

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1832	678	0	0	1556
Stage 1	1355	-	-	-	-
Stage 2	477	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	~ 68	395	-	-	421
Stage 1	205	-	-	-	-
Stage 2	590	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 59	395	-	-	421
Mov Cap-2 Maneuver	184	-	-	-	-
Stage 1	205	-	-	-	-
Stage 2	510	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	52.2	0	1.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	184	395	421	-
HCM Lane V/C Ratio	-	-	0.721	0.099	0.134	-
HCM Control Delay (s)	-	-	63.2	15.1	14.9	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	4.5	0.3	0.5	-

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

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	24	0	0	42	39	1395	201	44	729	39
Future Vol, veh/h	0	0	24	0	0	42	39	1395	201	44	729	39
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	26	0	0	46	42	1516	218	48	792	42

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	418	-	-	869	835	0	0	1735	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	584	0	0	295	794	-	-	359	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	584	-	-	295	793	-	-	359	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.5		19.4		0.2		0.9	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	793	-	-	584	295	359	-	-
HCM Lane V/C Ratio	0.053	-	-	0.045	0.155	0.133	-	-
HCM Control Delay (s)	9.8	-	-	11.5	19.4	16.6	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.5	0.5	-	-

PM Existing
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	14.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	187	48	18	5	17	27	19	131	12	39	131	3
Future Vol, veh/h	187	48	18	5	17	27	19	131	12	39	131	3
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	203	52	20	5	18	29	21	142	13	42	142	3
Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	47	0	0	73	0	0	585	526	65	591	522	34
Stage 1	-	-	-	-	-	-	469	469	-	43	43	-
Stage 2	-	-	-	-	-	-	116	57	-	548	479	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1527	-	-	422	457	999	419	459	1039
Stage 1	-	-	-	-	-	-	575	561	-	971	859	-
Stage 2	-	-	-	-	-	-	889	847	-	521	555	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1560	-	-	1526	-	-	272	393	997	267	395	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	393	-	267	395	-
Stage 1	-	-	-	-	-	-	496	484	-	839	856	-
Stage 2	-	-	-	-	-	-	736	844	-	313	479	-
Approach	EB	WB			NB			SB				
HCM Control Delay, s	5.7	0.8			21.6			25.4				
HCM LOS					C			D				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	390	1560	-	-	1526	-	-	360				
HCM Lane V/C Ratio	0.452	0.13	-	-	0.004	-	-	0.522				
HCM Control Delay (s)	21.6	7.7	0	-	7.4	0	-	25.4				
HCM Lane LOS	C	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	2.3	0.4	-	-	0	-	-	2.9				

PM Existing
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	90	13	111	46	19	24	1484	78	13	692	52
Future Volume (veh/h)	131	90	13	111	46	19	24	1484	78	13	692	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	98	14	121	50	21	26	1613	85	14	752	57
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	306	290	41	275	226	95	41	2203	983	24	2170	968
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.02	0.62	0.62	0.01	0.61	0.61
Sat Flow, veh/h	1329	1601	229	1281	1251	525	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	142	0	112	121	0	71	26	1613	85	14	752	57
Grp Sat Flow(s),veh/h/ln	1329	0	1829	1281	0	1776	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.6	0.0	3.5	5.9	0.0	2.2	0.9	20.5	1.4	0.5	6.8	0.9
Cycle Q Clear(g_c), s	8.8	0.0	3.5	9.4	0.0	2.2	0.9	20.5	1.4	0.5	6.8	0.9
Prop In Lane	1.00		0.13	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	0	331	275	0	321	41	2203	983	24	2170	968
V/C Ratio(X)	0.46	0.00	0.34	0.44	0.00	0.22	0.63	0.73	0.09	0.57	0.35	0.06
Avail Cap(c_a), veh/h	435	0	508	399	0	494	138	3073	1370	110	3018	1346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	23.1	27.2	0.0	22.6	31.4	8.6	4.9	31.7	6.2	5.1
Incr Delay (d2), s/veh	1.1	0.0	0.6	1.1	0.0	0.3	14.9	0.6	0.0	19.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.5	1.8	0.0	0.9	0.6	6.0	0.4	0.3	2.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	0.0	23.7	28.3	0.0	23.0	46.3	9.1	5.0	51.0	6.3	5.1
LnGrp LOS	C	A	C	C	A	C	D	A	A	D	A	A
Approach Vol, veh/h		254			192			1724			823	
Approach Delay, s/veh		25.8			26.3			9.5			7.0	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	44.2		15.7	5.5	43.6		15.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	56.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+I1), s	2.5	22.5		10.8	2.9	8.8		11.4				
Green Ext Time (p_c), s	0.0	17.7		0.6	0.0	6.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	83	66	16	2	36	14	18	32	6	18	18	113
Future Vol, veh/h	83	66	16	2	36	14	18	32	6	18	18	113
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	72	17	2	39	15	20	35	7	20	20	123

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	89	0	0	383	319	87	339	320	47
Stage 1	-	-	-	-	-	-	261	261	-	51	51	-
Stage 2	-	-	-	-	-	-	122	58	-	288	269	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1506	-	-	575	598	971	615	597	1022
Stage 1	-	-	-	-	-	-	744	692	-	962	852	-
Stage 2	-	-	-	-	-	-	882	847	-	720	687	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1551	-	-	1506	-	-	469	561	966	552	560	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	469	561	-	552	560	-
Stage 1	-	-	-	-	-	-	699	650	-	903	851	-
Stage 2	-	-	-	-	-	-	757	846	-	632	645	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.8			0.3			11.9			10.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	469	601	1551	-	-	1506	-	-	850
HCM Lane V/C Ratio	0.042	0.069	0.058	-	-	0.001	-	-	0.191
HCM Control Delay (s)	13	11.4	7.5	0	-	7.4	0	-	10.2
HCM Lane LOS	B	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.2	0.2	-	-	0	-	-	0.7

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕		↗	↕	
Traffic Vol, veh/h	0	0	13	0	0	11	25	1574	49	7	807	12
Future Vol, veh/h	0	0	13	0	0	11	25	1574	49	7	807	12
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	14	0	0	12	27	1711	53	8	877	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	445	-	-	883	890	0	0	1764	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	561	0	0	289	757	-	-	350	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	561	-	-	289	757	-	-	350	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

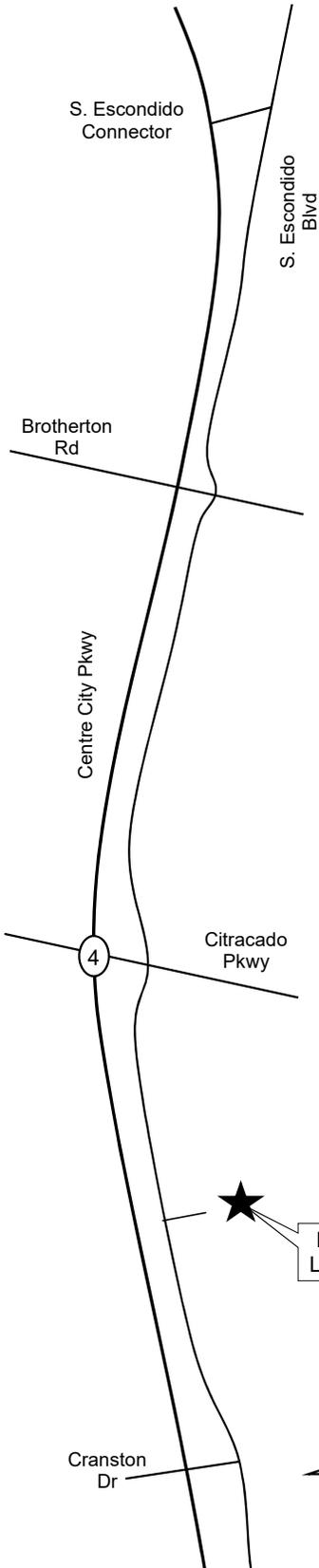
Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.6		18		0.2		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	757	-	-	561	289	350	-	-
HCM Lane V/C Ratio	0.036	-	-	0.025	0.041	0.022	-	-
HCM Control Delay (s)	9.9	-	-	11.6	18	15.5	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-

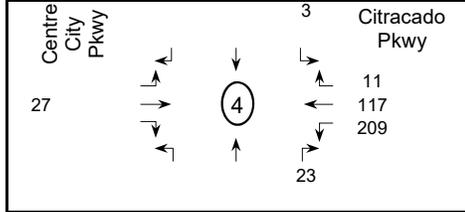
Appendix G

Trip Distribution Calculations

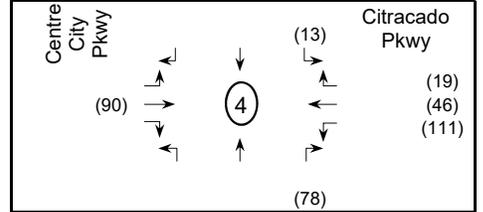
Distribution Calculation (based on background traffic patterns)



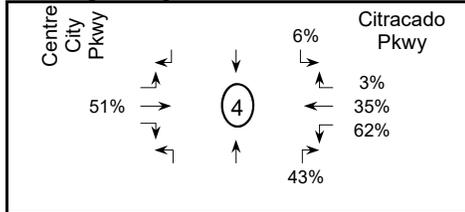
Existing Background Volumes AM



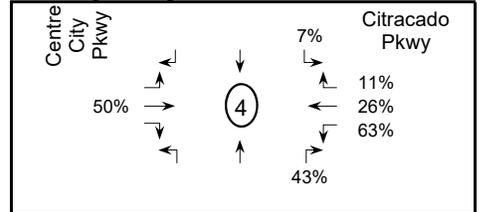
Existing Background Volumes PM



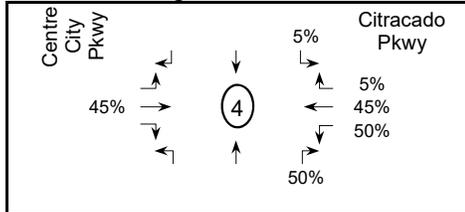
Existing Background Distribution AM



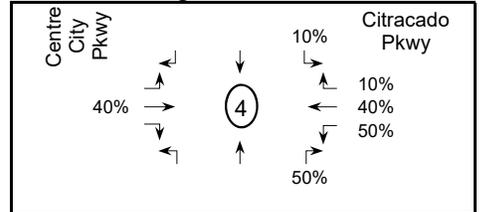
Existing Background Distribution PM



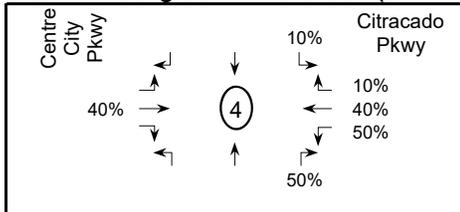
Balanced Background Distribution AM



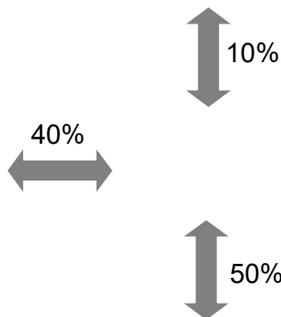
Balanced Background Distribution PM



Blended Background Distribution (AM & PM)



Overall Applied Project Distribution



Appendix H

Existing plus Project LOS Calculations

Please note for intersections #3 (S. Escondido Blvd at Brotherton Rd) and #5 (S. Escondido Blvd at Citracado Pkwy), the HCM analysis software does not allow for the analysis of the actual stop sign configuration as implemented in the field (i.e. 3 legs with stop signs and the EB approach without a stop sign). The HCM software output states “HCM does not support more than two Stop controlled approaches at the intersection”. Therefore, there were two choices in how to report the delay: all-way stop or two-way stop control. An all-way stop reports one delay, which is better LOS than showing the minor leg approach delays, thus a configuration of stop signs for the NB and SB approaches was used and reported.

Intersection						
Int Delay, s/veh	5.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	241	42	596	60	39	1107
Future Vol, veh/h	241	42	596	60	39	1107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	262	46	648	65	42	1203
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1334	324	0	0	713	0
Stage 1	648	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 145	672	-	-	883	-
Stage 1	483	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 138	672	-	-	883	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	40.5	0	0.3			
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	334	672	883	-
HCM Lane V/C Ratio	-	-	0.784	0.068	0.048	-
HCM Control Delay (s)	-	-	45.7	10.7	9.3	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	6.4	0.2	0.2	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	22	0	0	19	10	648	32	31	1269	58
Future Vol, veh/h	0	0	22	0	0	19	10	648	32	31	1269	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	24	0	0	21	11	704	35	34	1379	63

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	721	-	-	370	1442	0	0	739	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	370	0	0	627	466	-	-	863	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	-	370	-	-	627	466	-	-	863	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.4		10.9		0.2		0.2	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	466	-	-	370	627	863	-	-
HCM Lane V/C Ratio	0.023	-	-	0.065	0.033	0.039	-	-
HCM Control Delay (s)	12.9	-	-	15.4	10.9	9.3	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0.1	-	-

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	35	4	17	12	39	10	75	7	55	170	1
Future Vol, veh/h	30	35	4	17	12	39	10	75	7	55	170	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	38	4	18	13	42	11	82	8	60	185	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	42	0	0	269	197	40	221	178	34
Stage 1	-	-	-	-	-	-	106	106	-	70	70	-
Stage 2	-	-	-	-	-	-	163	91	-	151	108	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1550	-	-	1567	-	-	684	699	1031	735	716	1039
Stage 1	-	-	-	-	-	-	900	807	-	940	837	-
Stage 2	-	-	-	-	-	-	839	820	-	851	806	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1567	-	-	529	675	1031	645	692	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	529	675	-	645	692	-
Stage 1	-	-	-	-	-	-	880	789	-	919	827	-
Stage 2	-	-	-	-	-	-	643	810	-	741	788	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.2			1.8			11.3			13.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	1550	-	-	1567	-	-	681
HCM Lane V/C Ratio	0.149	0.021	-	-	0.012	-	-	0.361
HCM Control Delay (s)	11.3	7.4	0	-	7.3	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	1.6

AM Existing + Project
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	29	34	220	126	12	18	601	23	3	1213	96
Future Volume (veh/h)	62	29	34	220	126	12	18	601	23	3	1213	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	32	37	239	137	13	20	653	25	3	1318	104
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	356	201	233	420	432	41	34	1917	837	6	1861	830
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.02	0.54	0.54	0.00	0.52	0.52
Sat Flow, veh/h	1235	784	907	1329	1682	160	1781	3554	1552	1781	3554	1585
Grp Volume(v), veh/h	67	0	69	239	0	150	20	653	25	3	1318	104
Grp Sat Flow(s),veh/h/ln	1235	0	1691	1329	0	1841	1781	1777	1552	1781	1777	1585
Q Serve(g_s), s	2.8	0.0	1.9	10.2	0.0	3.9	0.7	6.2	0.5	0.1	16.8	2.0
Cycle Q Clear(g_c), s	6.7	0.0	1.9	12.0	0.0	3.9	0.7	6.2	0.5	0.1	16.8	2.0
Prop In Lane	1.00		0.54	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	434	420	0	473	34	1917	837	6	1861	830
V/C Ratio(X)	0.19	0.00	0.16	0.57	0.00	0.32	0.59	0.34	0.03	0.52	0.71	0.13
Avail Cap(c_a), veh/h	576	0	735	657	0	801	149	2854	1247	119	2794	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	17.2	21.9	0.0	18.0	29.1	7.8	6.4	29.7	10.8	7.3
Incr Delay (d2), s/veh	0.3	0.0	0.2	1.2	0.0	0.4	15.6	0.1	0.0	57.1	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.7	3.0	0.0	1.6	0.4	1.9	0.1	0.1	5.4	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	0.0	17.4	23.1	0.0	18.4	44.6	7.9	6.5	86.8	11.3	7.3
LnGrp LOS	C	A	B	C	A	B	D	A	A	F	B	A
Approach Vol, veh/h		136			389			698			1425	
Approach Delay, s/veh		19.1			21.3			8.9			11.2	
Approach LOS		B			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	36.2		19.3	5.1	35.3		19.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	48.0		26.0	5.0	47.0		26.0				
Max Q Clear Time (g_c+I1), s	2.1	8.2		8.7	2.7	18.8		14.0				
Green Ext Time (p_c), s	0.0	5.3		0.5	0.0	12.5		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	8.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	39	9	7	0	78	21	78	23	2	3	11	202
Future Vol, veh/h	39	9	7	0	78	21	78	23	2	3	11	202
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	10	8	0	85	23	85	25	2	3	12	220

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	18	0	0	311	207	17	213	200	98
Stage 1	-	-	-	-	-	-	98	98	-	98	98	-
Stage 2	-	-	-	-	-	-	213	109	-	115	102	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1481	-	-	1599	-	-	642	690	1062	744	696	958
Stage 1	-	-	-	-	-	-	908	814	-	908	814	-
Stage 2	-	-	-	-	-	-	789	805	-	890	811	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1480	-	-	1599	-	-	477	669	1059	703	675	957
Mov Cap-2 Maneuver	-	-	-	-	-	-	477	669	-	703	675	-
Stage 1	-	-	-	-	-	-	882	790	-	881	813	-
Stage 2	-	-	-	-	-	-	599	804	-	833	787	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.3			0			13.3			10.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	477	689	1480	-	-	1599	-	-	932
HCM Lane V/C Ratio	0.178	0.039	0.029	-	-	-	-	-	0.252
HCM Control Delay (s)	14.2	10.4	7.5	0	-	0	-	-	10.2
HCM Lane LOS	B	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0	-	-	1

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	22	71	3	2	16
Future Vol, veh/h	0	22	71	3	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	77	3	2	17
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	100	79	0	0	80	0
Stage 1	79	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	899	981	-	-	1518	-
Stage 1	944	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	898	981	-	-	1518	-
Mov Cap-2 Maneuver	898	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.8	0		0.8		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	981	1518	-	
HCM Lane V/C Ratio	-	-	0.024	0.001	-	
HCM Control Delay (s)	-	-	8.8	7.4	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	37	0	0	13	11	615	19	5	1426	10
Future Vol, veh/h	0	0	37	0	0	13	11	615	19	5	1426	10
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	40	0	0	14	12	668	21	5	1550	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	783	-	-	346	1562	0	0	690	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	337	0	0	650	419	-	-	900	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	336	-	-	649	419	-	-	899	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.2		10.7		0.2		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	419	-	-	336	649	899	-	-
HCM Lane V/C Ratio	0.029	-	-	0.12	0.022	0.006	-	-
HCM Control Delay (s)	13.8	-	-	17.2	10.7	9	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	122	36	1247	185	52	668
Future Vol, veh/h	122	36	1247	185	52	668
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	39	1355	201	57	726

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1833	679	0	0	1557	0
Stage 1	1356	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 68	394	-	-	421	-
Stage 1	205	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 59	394	-	-	421	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	205	-	-	-	-	-
Stage 2	510	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	52.2	0	1.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	184	394	421	-
HCM Lane V/C Ratio	-	-	0.721	0.099	0.134	-
HCM Control Delay (s)	-	-	63.2	15.1	14.9	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	4.5	0.3	0.5	-

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

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	24	0	0	42	39	1396	201	44	730	39
Future Vol, veh/h	0	0	24	0	0	42	39	1396	201	44	730	39
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	26	0	0	46	42	1517	218	48	793	42

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	419	-	-	870	836	0	0	1736	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	583	0	0	295	794	-	-	359	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	583	-	-	295	793	-	-	359	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.5		19.4		0.2		0.9	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	793	-	-	583	295	359	-	-
HCM Lane V/C Ratio	0.053	-	-	0.045	0.155	0.133	-	-
HCM Control Delay (s)	9.8	-	-	11.5	19.4	16.6	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.5	0.5	-	-

PM Existing + Project
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	14.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	187	48	18	5	17	27	19	132	12	39	132	3
Future Vol, veh/h	187	48	18	5	17	27	19	132	12	39	132	3
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	203	52	20	5	18	29	21	143	13	42	143	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	73	0	0	586	526	65	591	522	34
Stage 1	-	-	-	-	-	-	469	469	-	43	43	-
Stage 2	-	-	-	-	-	-	117	57	-	548	479	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1527	-	-	422	457	999	419	459	1039
Stage 1	-	-	-	-	-	-	575	561	-	971	859	-
Stage 2	-	-	-	-	-	-	888	847	-	521	555	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1560	-	-	1526	-	-	271	393	997	266	395	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	393	-	266	395	-
Stage 1	-	-	-	-	-	-	496	484	-	839	856	-
Stage 2	-	-	-	-	-	-	734	844	-	312	479	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.7			0.8			21.7			25.5		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	390	1560	-	-	1526	-	-	360
HCM Lane V/C Ratio	0.454	0.13	-	-	0.004	-	-	0.525
HCM Control Delay (s)	21.7	7.7	0	-	7.4	0	-	25.5
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	2.3	0.4	-	-	0	-	-	2.9

PM Existing + Project
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	99	13	116	49	20	24	1484	78	14	692	52
Future Volume (veh/h)	131	99	13	116	49	20	24	1484	78	14	692	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	108	14	126	53	22	26	1613	85	15	752	57
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	312	307	40	276	238	99	41	2185	974	26	2155	961
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.02	0.61	0.61	0.01	0.61	0.61
Sat Flow, veh/h	1325	1622	210	1269	1255	521	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	142	0	122	126	0	75	26	1613	85	15	752	57
Grp Sat Flow(s),veh/h/ln	1325	0	1833	1269	0	1777	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.7	0.0	3.8	6.3	0.0	2.4	1.0	21.2	1.4	0.6	7.0	1.0
Cycle Q Clear(g_c), s	9.1	0.0	3.8	10.2	0.0	2.4	1.0	21.2	1.4	0.6	7.0	1.0
Prop In Lane	1.00		0.11	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	0	347	276	0	336	41	2185	974	26	2155	961
V/C Ratio(X)	0.45	0.00	0.35	0.46	0.00	0.22	0.64	0.74	0.09	0.58	0.35	0.06
Avail Cap(c_a), veh/h	422	0	499	381	0	483	135	3008	1342	108	2954	1318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	23.3	27.7	0.0	22.7	32.0	9.0	5.2	32.4	6.5	5.3
Incr Delay (d2), s/veh	1.0	0.0	0.6	1.2	0.0	0.3	15.2	0.6	0.0	18.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.6	1.9	0.0	1.0	0.6	6.4	0.4	0.4	2.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	0.0	23.9	28.9	0.0	23.0	47.2	9.6	5.2	51.1	6.6	5.3
LnGrp LOS	C	A	C	C	A	C	D	A	A	D	A	A
Approach Vol, veh/h		264			201			1724			824	
Approach Delay, s/veh		25.9			26.7			10.0			7.3	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	44.7		16.5	5.5	44.1		16.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	56.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+I1), s	2.6	23.2		11.1	3.0	9.0		12.2				
Green Ext Time (p_c), s	0.0	17.5		0.6	0.0	6.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	83	66	27	2	36	14	27	33	6	18	19	113
Future Vol, veh/h	83	66	27	2	36	14	27	33	6	18	19	113
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	72	29	2	39	15	29	36	7	20	21	123

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	101	0	0	390	325	93	345	332	47
Stage 1	-	-	-	-	-	-	267	267	-	51	51	-
Stage 2	-	-	-	-	-	-	123	58	-	294	281	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1491	-	-	569	593	964	609	588	1022
Stage 1	-	-	-	-	-	-	738	688	-	962	852	-
Stage 2	-	-	-	-	-	-	881	847	-	714	678	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1551	-	-	1491	-	-	463	556	959	545	551	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	463	556	-	545	551	-
Stage 1	-	-	-	-	-	-	692	645	-	902	851	-
Stage 2	-	-	-	-	-	-	756	846	-	625	636	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.5			0.3			12.2			10.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	463	594	1551	-	-	1491	-	-	842
HCM Lane V/C Ratio	0.063	0.071	0.058	-	-	0.001	-	-	0.194
HCM Control Delay (s)	13.3	11.5	7.5	0	-	7.4	0	-	10.3
HCM Lane LOS	B	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.2	0.2	-	-	0	-	-	0.7

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	10	65	12	12	42
Future Vol, veh/h	0	10	65	12	12	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	71	13	13	46
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	150	78	0	0	84	0
Stage 1	78	-	-	-	-	-
Stage 2	72	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	842	983	-	-	1513	-
Stage 1	945	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	834	983	-	-	1513	-
Mov Cap-2 Maneuver	834	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		1.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	983	1513	-	
HCM Lane V/C Ratio	-	-	0.011	0.009	-	
HCM Control Delay (s)	-	-	8.7	7.4	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	13	0	0	11	25	1574	61	7	812	12
Future Vol, veh/h	0	0	13	0	0	11	25	1574	61	7	812	12
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	14	0	0	12	27	1711	66	8	883	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	448	-	-	890	896	0	0	1777	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	558	0	0	286	753	-	-	346	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	558	-	-	286	753	-	-	346	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.6		18.1		0.2		0.1	
HCM LOS	B		C					

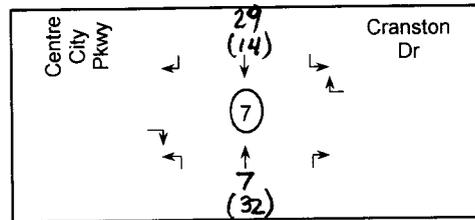
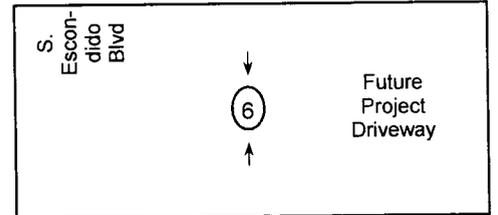
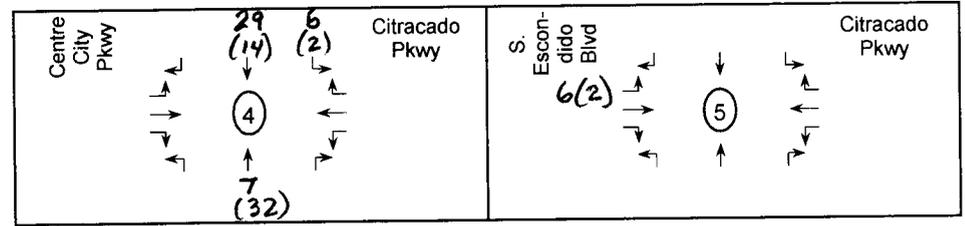
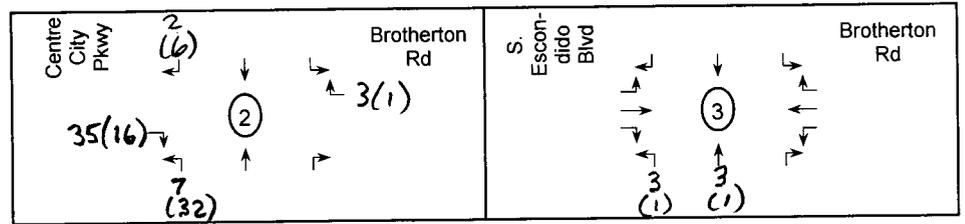
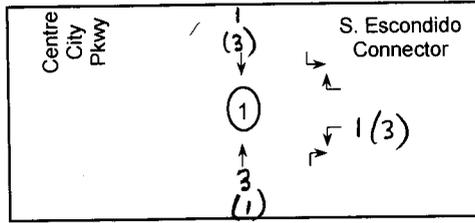
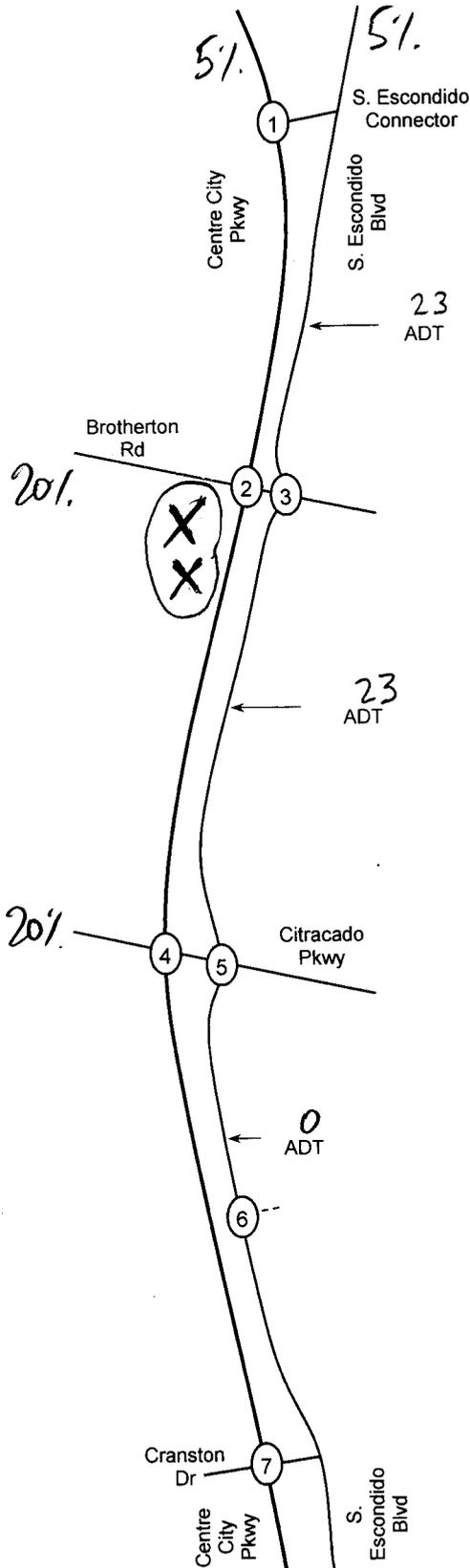
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	753	-	-	558	286	346	-	-
HCM Lane V/C Ratio	0.036	-	-	0.025	0.042	0.022	-	-
HCM Control Delay (s)	10	-	-	11.6	18.1	15.6	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-

Appendix I

Cumulative Project Information

CUMULATIVE: DEL PRADO I & II (113 MF)

TG = 904 ADT, AM (14 IN, 58 OUT), PM (63 IN, 27 OUT)



LEGEND

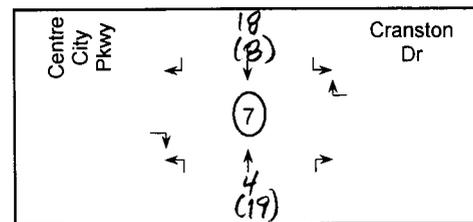
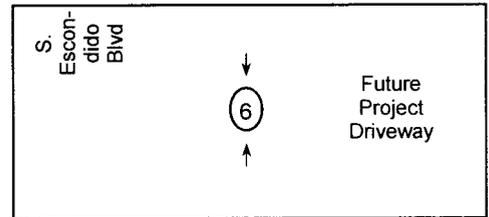
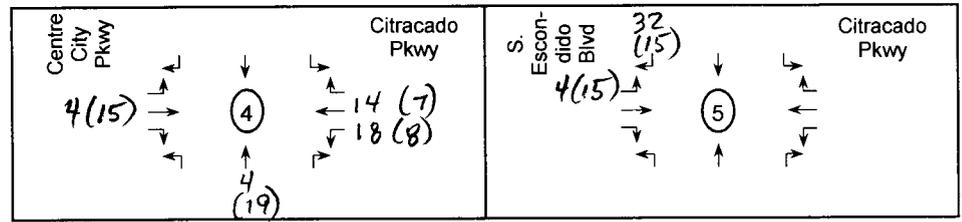
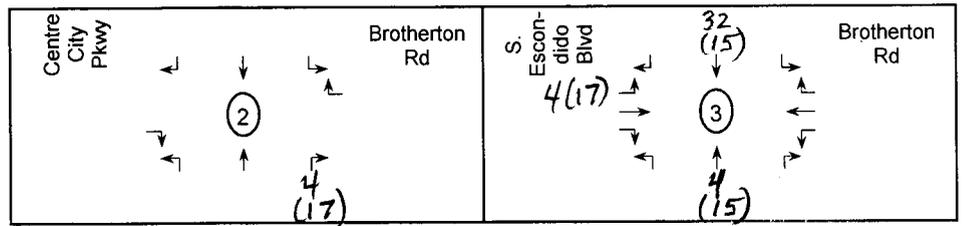
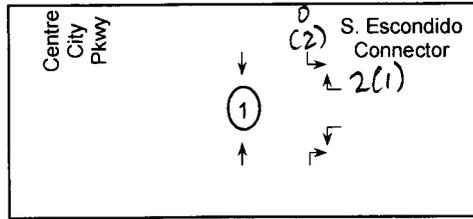
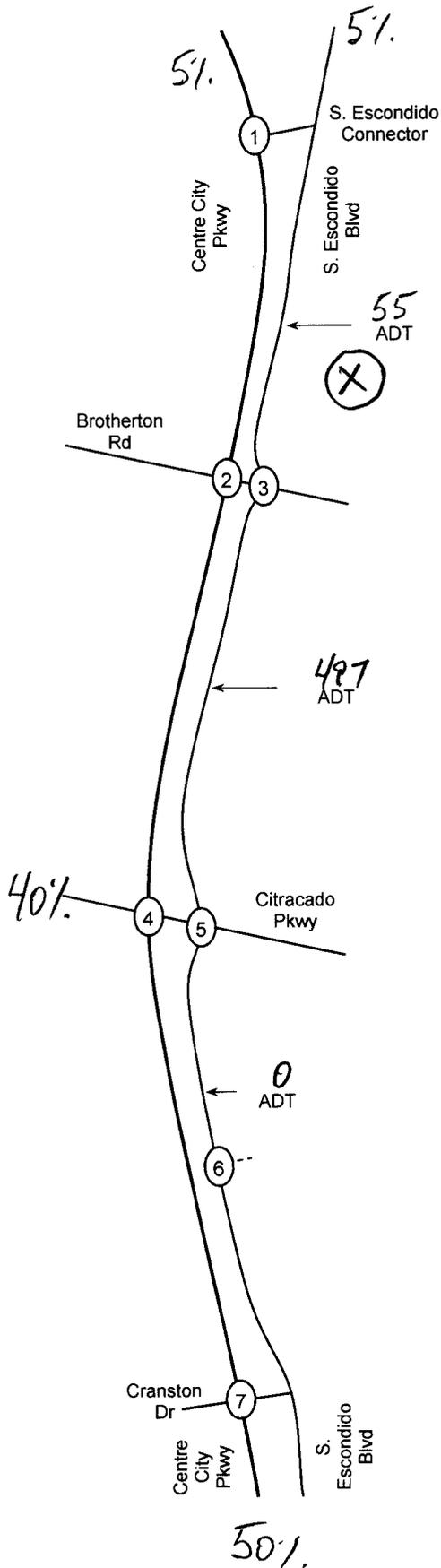
- XX AM peak hour volumes at intersections
- (YY) PM peak hour volumes at intersections
- Z,ZZZ ADT volumes shown along segments
- Ⓝ Intersection Reference Number to LOS Tables
- Existing Roadways
- - - Future Project Driveway



No Scale

CUMULATIVE PROJECT: WARMINGTON 69 MF UNITS

TG = 55Z ADT, AM (9IN, 3500), PM (39IN, 1700)



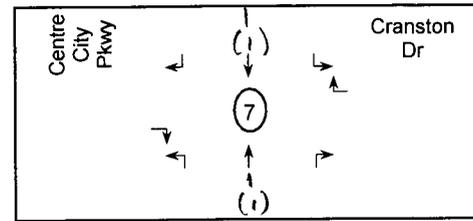
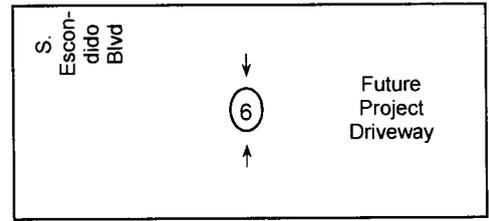
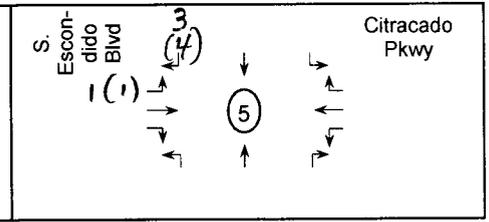
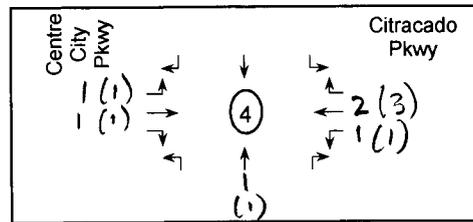
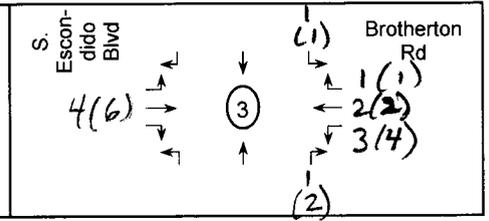
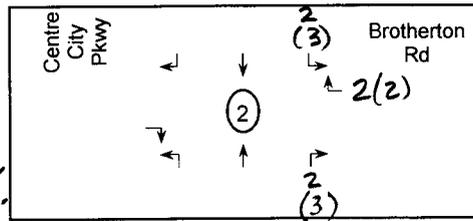
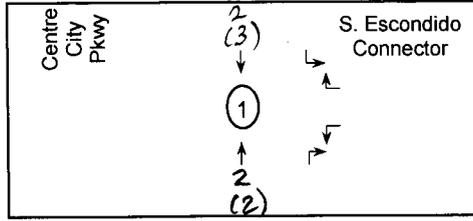
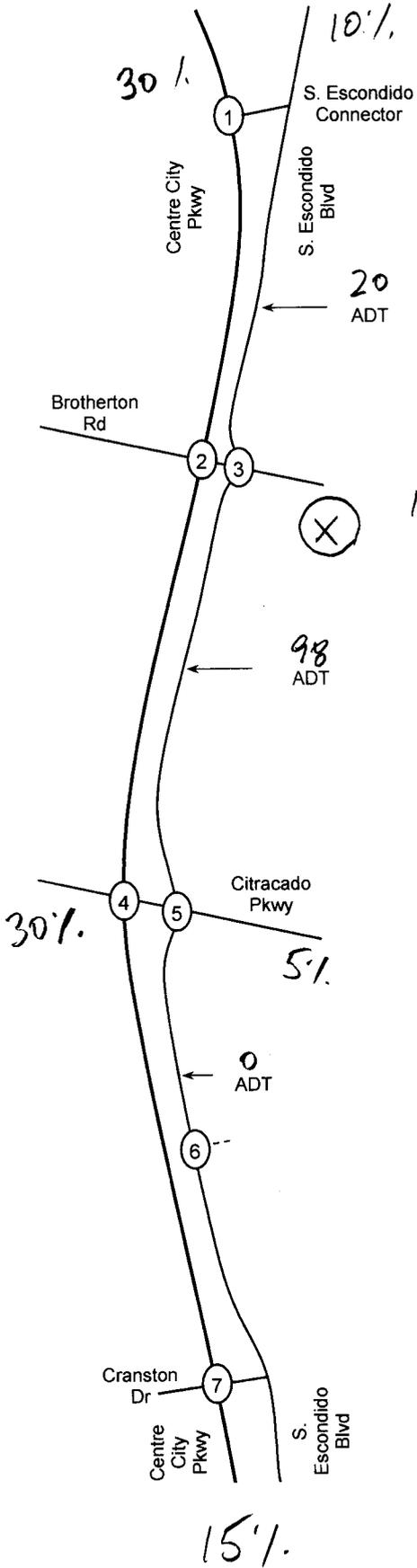
LEGEND

- XX AM peak hour volumes at intersections
- (YY) PM peak hour volumes at intersections
- Z,ZZZ ADT volumes shown along segments
- # Intersection Reference Number to LOS Tables
- Existing Roadways
- - - Future Project Driveway



CUMULATIVE PROJECT: BRANDYWINE STORAGE FACILITY (78,067 SF) + 4 SINGLE FAMILY HOMES

TG = 104 ADT, AM (6 IN, 7 OUT), PM (10 IN, 8 OUT)



LEGEND

- XX AM peak hour volumes at intersections
- (YY) PM peak hour volumes at intersections
- Z,ZZZ ADT volumes shown along segments
- Ⓝ Intersection Reference Number to LOS Tables
- Existing Roadways
- - - - Future Project Driveway



No Scale

Appendix J

Existing plus Cumulative LOS Calculations

Please note for intersections #3 (S. Escondido Blvd at Brotherton Rd) and #5 (S. Escondido Blvd at Citracado Pkwy), the HCM analysis software does not allow for the analysis of the actual stop sign configuration as implemented in the field (i.e. 3 legs with stop signs and the EB approach without a stop sign). The HCM software output states “HCM does not support more than two Stop controlled approaches at the intersection”. Therefore, there were two choices in how to report the delay: all-way stop or two-way stop control. An all-way stop reports one delay, which is better LOS than showing the minor leg approach delays, thus a configuration of stop signs for the NB and SB approaches was used and reported.

AM Existing + Cumulative
1: Centre City Pkwy & S. Escondido Connector

HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	242	44	600	60	39	1110
Future Vol, veh/h	242	44	600	60	39	1110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	48	652	65	42	1207

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1340	326	0	0	717	0
Stage 1	652	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 144	670	-	-	880	-
Stage 1	480	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 137	670	-	-	880	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	333	670	880	-
HCM Lane V/C Ratio	-	-	0.79	0.071	0.048	-
HCM Control Delay (s)	-	-	46.5	10.8	9.3	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	6.5	0.2	0.2	-

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

AM Existing + Cumulative
2: Centre City Pkwy & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	57	0	0	24	17	647	38	33	1269	60
Future Vol, veh/h	0	0	57	0	0	24	17	647	38	33	1269	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	62	0	0	26	18	703	41	36	1379	65

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	722	-	-	372	1444	0	0	744	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	369	0	0	625	465	-	-	859	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	369	-	-	625	465	-	-	859	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.7		11		0.3		0.2	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	465	-	-	369	625	859	-	-
HCM Lane V/C Ratio	0.04	-	-	0.168	0.042	0.042	-	-
HCM Control Delay (s)	13.1	-	-	16.7	11	9.4	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0.1	-	-

AM Existing + Cumulative
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	10.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	39	4	20	14	40	13	81	8	56	202	1
Future Vol, veh/h	34	39	4	20	14	40	13	81	8	56	202	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	42	4	22	15	43	14	88	9	61	220	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	46	0	0	309	220	44	248	201	37
Stage 1	-	-	-	-	-	-	118	118	-	81	81	-
Stage 2	-	-	-	-	-	-	191	102	-	167	120	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1546	-	-	1562	-	-	643	678	1026	706	695	1035
Stage 1	-	-	-	-	-	-	887	798	-	927	828	-
Stage 2	-	-	-	-	-	-	811	811	-	835	796	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1562	-	-	465	651	1026	609	667	1035
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	651	-	609	667	-
Stage 1	-	-	-	-	-	-	865	778	-	904	816	-
Stage 2	-	-	-	-	-	-	583	799	-	716	776	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.3			2			11.8			14.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	637	1546	-	-	1562	-	-	654
HCM Lane V/C Ratio	0.174	0.024	-	-	0.014	-	-	0.43
HCM Control Delay (s)	11.8	7.4	0	-	7.3	0	-	14.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	2.2

AM Existing + Cumulative
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	32	34	228	133	11	18	613	23	9	1242	96
Future Volume (veh/h)	63	32	34	228	133	11	18	613	23	9	1242	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	35	37	248	145	12	20	666	25	10	1350	104
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	354	217	229	421	447	37	33	1898	829	18	1868	833
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.02	0.53	0.53	0.01	0.53	0.53
Sat Flow, veh/h	1228	825	872	1326	1704	141	1781	3554	1552	1781	3554	1585
Grp Volume(v), veh/h	68	0	72	248	0	157	20	666	25	10	1350	104
Grp Sat Flow(s),veh/h/ln	1228	0	1698	1326	0	1845	1781	1777	1552	1781	1777	1585
Q Serve(g_s), s	2.9	0.0	2.0	11.0	0.0	4.3	0.7	6.7	0.5	0.3	18.1	2.1
Cycle Q Clear(g_c), s	7.2	0.0	2.0	13.1	0.0	4.3	0.7	6.7	0.5	0.3	18.1	2.1
Prop In Lane	1.00		0.51	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	0	446	421	0	485	33	1898	829	18	1868	833
V/C Ratio(X)	0.19	0.00	0.16	0.59	0.00	0.32	0.60	0.35	0.03	0.55	0.72	0.12
Avail Cap(c_a), veh/h	545	0	710	627	0	771	143	2742	1198	115	2685	1198
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	17.7	22.7	0.0	18.5	30.3	8.3	6.9	30.6	11.3	7.5
Incr Delay (d2), s/veh	0.3	0.0	0.2	1.3	0.0	0.4	15.9	0.1	0.0	23.5	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8	3.3	0.0	1.7	0.4	2.1	0.1	0.3	5.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	17.8	24.0	0.0	18.9	46.1	8.4	6.9	54.1	11.8	7.6
LnGrp LOS	C	A	B	C	A	B	D	A	A	D	B	A
Approach Vol, veh/h		140			405			711			1464	
Approach Delay, s/veh		19.7			22.0			9.4			11.8	
Approach LOS		B			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	37.2		20.3	5.2	36.7		20.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	48.0		26.0	5.0	47.0		26.0				
Max Q Clear Time (g_c+I1), s	2.3	8.7		9.2	2.7	20.1		15.1				
Green Ext Time (p_c), s	0.0	5.4		0.5	0.0	12.6		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			13.1									
HCM 6th LOS			B									

AM Existing + Cumulative
5: S. Escondido Pkwy & Citracado Pkwy

HCM 6th TWSC

Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	50	9	5	0	78	21	57	22	2	3	11	237
Future Vol, veh/h	50	9	5	0	78	21	57	22	2	3	11	237
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	10	5	0	85	23	62	24	2	3	12	258

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	15	0	0	353	230	16	235	221	98
Stage 1	-	-	-	-	-	-	121	121	-	98	98	-
Stage 2	-	-	-	-	-	-	232	109	-	137	123	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1481	-	-	1603	-	-	602	670	1063	720	678	958
Stage 1	-	-	-	-	-	-	883	796	-	908	814	-
Stage 2	-	-	-	-	-	-	771	805	-	866	794	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1480	-	-	1603	-	-	421	645	1060	676	652	957
Mov Cap-2 Maneuver	-	-	-	-	-	-	421	645	-	676	652	-
Stage 1	-	-	-	-	-	-	850	767	-	873	813	-
Stage 2	-	-	-	-	-	-	555	804	-	804	765	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.9			0			13.7			10.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	667	1480	-	-	1603	-	-	933
HCM Lane V/C Ratio	0.147	0.039	0.037	-	-	-	-	-	0.292
HCM Control Delay (s)	15	10.6	7.5	0	-	0	-	-	10.4
HCM Lane LOS	C	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.1	0.1	-	-	0	-	-	1.2

LOS Engineering, Inc.

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	37	0	0	13	11	627	16	5	1463	10
Future Vol, veh/h	0	0	37	0	0	13	11	627	16	5	1463	10
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	40	0	0	14	12	682	17	5	1590	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	803	-	-	351	1602	0	0	700	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	326	0	0	645	404	-	-	893	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	325	-	-	644	404	-	-	892	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.6		10.7		0.2		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	404	-	-	325	644	892	-	-
HCM Lane V/C Ratio	0.03	-	-	0.124	0.022	0.006	-	-
HCM Control Delay (s)	14.2	-	-	17.6	10.7	9.1	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

PM Existing + Cumulative
1: Centre City Pkwy & S. Escondido Connector

HCM 6th TWSC

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑	↗	↘	↑↑
Traffic Vol, veh/h	125	37	1249	185	54	673
Future Vol, veh/h	125	37	1249	185	54	673
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	40	1358	201	59	732

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1843	680	0	0	1560
Stage 1	1359	-	-	-	-
Stage 2	484	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	~ 67	393	-	-	420
Stage 1	204	-	-	-	-
Stage 2	585	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 58	393	-	-	420
Mov Cap-2 Maneuver	183	-	-	-	-
Stage 1	204	-	-	-	-
Stage 2	503	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	54.7	0	1.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	183	393	420	-
HCM Lane V/C Ratio	-	-	0.742	0.102	0.14	-
HCM Control Delay (s)	-	-	66.4	15.2	15	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	4.8	0.3	0.5	-

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

PM Existing + Cumulative
2: Centre City Pkwy & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	40	0	0	45	71	1395	221	47	729	45
Future Vol, veh/h	0	0	40	0	0	45	71	1395	221	47	729	45
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	49	77	1516	240	51	792	49

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	422	-	-	880	842	0	0	1757	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	580	0	0	290	789	-	-	352	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	580	-	-	290	788	-	-	352	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	11.7		19.9		0.4		1			
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	788	-	-	580	290	352	-	-
HCM Lane V/C Ratio	0.098	-	-	0.075	0.169	0.145	-	-
HCM Control Delay (s)	10.1	-	-	11.7	19.9	17	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	0.6	0.5	-	-

PM Existing + Cumulative
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	18.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	204	54	18	9	19	28	20	147	14	40	146	3
Future Vol, veh/h	204	54	18	9	19	28	20	147	14	40	146	3
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	222	59	20	10	21	30	22	160	15	43	159	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	51	0	0	80	0	0	652	585	72	659	580	37
Stage 1	-	-	-	-	-	-	514	514	-	56	56	-
Stage 2	-	-	-	-	-	-	138	71	-	603	524	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1555	-	-	1518	-	-	381	423	990	377	426	1035
Stage 1	-	-	-	-	-	-	543	535	-	956	848	-
Stage 2	-	-	-	-	-	-	865	836	-	486	530	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1555	-	-	1517	-	-	221	357	988	214	359	1034
Mov Cap-2 Maneuver	-	-	-	-	-	-	221	357	-	214	359	-
Stage 1	-	-	-	-	-	-	461	454	-	813	842	-
Stage 2	-	-	-	-	-	-	694	830	-	263	450	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.7			1.2			27.7			35.1		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	350	1555	-	-	1517	-	-	317
HCM Lane V/C Ratio	0.562	0.143	-	-	0.006	-	-	0.648
HCM Control Delay (s)	27.7	7.7	0	-	7.4	0	-	35.1
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	3.3	0.5	-	-	0	-	-	4.2

PM Existing + Cumulative
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	106	13	120	56	19	24	1536	78	15	706	52
Future Volume (veh/h)	132	106	13	120	56	19	24	1536	78	15	706	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	143	115	14	130	61	21	26	1670	85	16	767	57
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	308	317	39	271	258	89	40	2198	980	27	2172	969
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.02	0.62	0.62	0.02	0.61	0.61
Sat Flow, veh/h	1316	1635	199	1261	1330	458	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	143	0	129	130	0	82	26	1670	85	16	767	57
Grp Sat Flow(s),veh/h/ln	1316	0	1835	1261	0	1788	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.2	0.0	4.2	6.9	0.0	2.7	1.0	23.6	1.5	0.6	7.5	1.0
Cycle Q Clear(g_c), s	9.9	0.0	4.2	11.2	0.0	2.7	1.0	23.6	1.5	0.6	7.5	1.0
Prop In Lane	1.00		0.11	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	0	356	271	0	347	40	2198	980	27	2172	969
V/C Ratio(X)	0.46	0.00	0.36	0.48	0.00	0.24	0.64	0.76	0.09	0.59	0.35	0.06
Avail Cap(c_a), veh/h	392	0	474	352	0	462	128	2854	1273	102	2803	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	24.4	29.2	0.0	23.7	33.8	9.6	5.4	34.1	6.7	5.5
Incr Delay (d2), s/veh	1.1	0.0	0.6	1.3	0.0	0.3	15.8	0.9	0.0	18.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	1.8	2.1	0.0	1.1	0.6	7.3	0.4	0.4	2.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	25.0	30.5	0.0	24.1	49.6	10.5	5.4	52.6	6.8	5.5
LnGrp LOS	C	A	C	C	A	C	D	B	A	D	A	A
Approach Vol, veh/h		272			212			1781			840	
Approach Delay, s/veh		27.1			28.0			10.8			7.6	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	47.1		17.5	5.6	46.6		17.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	56.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+I1), s	2.6	25.6		11.9	3.0	9.5		13.2				
Green Ext Time (p_c), s	0.0	17.5		0.6	0.0	6.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

PM Existing + Cumulative
5: S. Escondido Pkwy & Citracado Pkwy

HCM 6th TWSC

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	101	66	16	2	36	14	18	32	6	18	18	132
Future Vol, veh/h	101	66	16	2	36	14	18	32	6	18	18	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	72	17	2	39	15	20	35	7	20	20	143
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	89	0	0	433	359	87	379	360	47
Stage 1	-	-	-	-	-	-	301	301	-	51	51	-
Stage 2	-	-	-	-	-	-	132	58	-	328	309	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1506	-	-	533	568	971	579	567	1022
Stage 1	-	-	-	-	-	-	708	665	-	962	852	-
Stage 2	-	-	-	-	-	-	871	847	-	685	660	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1551	-	-	1506	-	-	419	525	966	512	524	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	419	525	-	512	524	-
Stage 1	-	-	-	-	-	-	655	615	-	890	851	-
Stage 2	-	-	-	-	-	-	731	846	-	591	611	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.1			0.3			12.6			10.4		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	419	566	1551	-	-	1506	-	-	846			
HCM Lane V/C Ratio	0.047	0.073	0.071	-	-	0.001	-	-	0.216			
HCM Control Delay (s)	14	11.9	7.5	0	-	7.4	0	-	10.4			
HCM Lane LOS	B	B	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	0.1	0.2	0.2	-	-	0	-	-	0.8			

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	13	0	0	11	25	1626	49	7	830	12
Future Vol, veh/h	0	0	13	0	0	11	25	1626	49	7	830	12
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	14	0	0	12	27	1767	53	8	902	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	458	-	-	911	915	0	0	1820	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	550	0	0	277	741	-	-	333	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	550	-	-	277	741	-	-	333	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.7		18.6		0.1		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	741	-	-	550	277	333	-	-
HCM Lane V/C Ratio	0.037	-	-	0.026	0.043	0.023	-	-
HCM Control Delay (s)	10	-	-	11.7	18.6	16.1	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-

Appendix K

Existing plus Cumulative plus Project LOS Calculations

Please note for intersections #3 (S. Escondido Blvd at Brotherton Rd) and #5 (S. Escondido Blvd at Citracado Pkwy), the HCM analysis software does not allow for the analysis of the actual stop sign configuration as implemented in the field (i.e. 3 legs with stop signs and the EB approach without a stop sign). The HCM software output states “HCM does not support more than two Stop controlled approaches at the intersection”. Therefore, there were two choices in how to report the delay: all-way stop or two-way stop control. An all-way stop reports one delay, which is better LOS than showing the minor leg approach delays, thus a configuration of stop signs for the NB and SB approaches was used and reported.

AM Existing + Cumulative + Project
1: Centre City Pkwy & S. Escondido Connector

HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	242	44	601	60	39	1110
Future Vol, veh/h	242	44	601	60	39	1110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	48	653	65	42	1207
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1341	327	0	0	718	0
Stage 1	653	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 144	669	-	-	879	-
Stage 1	480	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 137	669	-	-	879	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	41	0	0.3			
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	333	669	879	-
HCM Lane V/C Ratio	-	-	0.79	0.071	0.048	-
HCM Control Delay (s)	-	-	46.5	10.8	9.3	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	6.5	0.2	0.2	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	57	0	0	24	17	648	38	33	1269	60
Future Vol, veh/h	0	0	57	0	0	24	17	648	38	33	1269	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	62	0	0	26	18	704	41	36	1379	65
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	-	-	722	-	-	373	1444	0	0	745	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	369	0	0	624	465	-	-	859	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	369	-	-	624	465	-	-	859	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	16.7		11			0.3			0.2			
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	465	-	-	369	624	859	-	-				
HCM Lane V/C Ratio	0.04	-	-	0.168	0.042	0.042	-	-				
HCM Control Delay (s)	13.1	-	-	16.7	11	9.4	-	-				
HCM Lane LOS	B	-	-	C	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0.1	-	-				

AM Existing + Cumulative + Project
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	10.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	39	4	20	14	40	13	82	8	56	202	1
Future Vol, veh/h	34	39	4	20	14	40	13	82	8	56	202	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	42	4	22	15	43	14	89	9	61	220	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	46	0	0	309	220	44	248	201	37
Stage 1	-	-	-	-	-	-	118	118	-	81	81	-
Stage 2	-	-	-	-	-	-	191	102	-	167	120	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1546	-	-	1562	-	-	643	678	1026	706	695	1035
Stage 1	-	-	-	-	-	-	887	798	-	927	828	-
Stage 2	-	-	-	-	-	-	811	811	-	835	796	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1562	-	-	465	651	1026	608	667	1035
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	651	-	608	667	-
Stage 1	-	-	-	-	-	-	865	778	-	904	816	-
Stage 2	-	-	-	-	-	-	583	799	-	715	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	2	11.9	14.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	637	1546	-	-	1562	-	-	654
HCM Lane V/C Ratio	0.176	0.024	-	-	0.014	-	-	0.43
HCM Control Delay (s)	11.9	7.4	0	-	7.3	0	-	14.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	2.2

AM Existing + Cumulative + Project
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	34	34	239	142	12	18	613	23	9	1242	96
Future Volume (veh/h)	63	34	34	239	142	12	18	613	23	9	1242	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	37	37	260	154	13	20	666	25	10	1350	104
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	355	231	231	429	462	39	33	1882	822	18	1852	826
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.02	0.53	0.53	0.01	0.52	0.52
Sat Flow, veh/h	1217	851	851	1323	1701	144	1781	3554	1552	1781	3554	1585
Grp Volume(v), veh/h	68	0	74	260	0	167	20	666	25	10	1350	104
Grp Sat Flow(s),veh/h/ln	1217	0	1702	1323	0	1844	1781	1777	1552	1781	1777	1585
Q Serve(g_s), s	3.0	0.0	2.1	11.8	0.0	4.6	0.7	6.9	0.5	0.4	18.7	2.1
Cycle Q Clear(g_c), s	7.6	0.0	2.1	14.0	0.0	4.6	0.7	6.9	0.5	0.4	18.7	2.1
Prop In Lane	1.00		0.50	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	462	429	0	501	33	1882	822	18	1852	826
V/C Ratio(X)	0.19	0.00	0.16	0.61	0.00	0.33	0.60	0.35	0.03	0.55	0.73	0.13
Avail Cap(c_a), veh/h	522	0	696	610	0	754	140	2682	1172	112	2626	1171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	17.6	23.0	0.0	18.6	31.0	8.7	7.1	31.3	11.8	7.8
Incr Delay (d2), s/veh	0.3	0.0	0.2	1.4	0.0	0.4	16.0	0.1	0.0	23.6	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8	3.6	0.0	1.9	0.4	2.3	0.1	0.3	6.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	0.0	17.8	24.3	0.0	18.9	47.0	8.8	7.2	54.9	12.4	7.9
LnGrp LOS	C	A	B	C	A	B	D	A	A	D	B	A
Approach Vol, veh/h		142			427			711			1464	
Approach Delay, s/veh		19.8			22.2			9.8			12.3	
Approach LOS		B			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	37.7		21.3	5.2	37.1		21.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	48.0		26.0	5.0	47.0		26.0				
Max Q Clear Time (g_c+I1), s	2.4	8.9		9.6	2.7	20.7		16.0				
Green Ext Time (p_c), s	0.0	5.4		0.5	0.0	12.5		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			13.6									
HCM 6th LOS			B									

AM Existing + Cumulative + Project
5: S. Escondido Pkwy & Citracado Pkwy

HCM 6th TWSC

Intersection												
Int Delay, s/veh	8.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	50	9	7	0	78	21	78	23	2	3	11	237
Future Vol, veh/h	50	9	7	0	78	21	78	23	2	3	11	237
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	10	8	0	85	23	85	25	2	3	12	258

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	18	0	0	354	231	17	237	224	98
Stage 1	-	-	-	-	-	-	122	122	-	98	98	-
Stage 2	-	-	-	-	-	-	232	109	-	139	126	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1481	-	-	1599	-	-	601	669	1062	717	675	958
Stage 1	-	-	-	-	-	-	882	795	-	908	814	-
Stage 2	-	-	-	-	-	-	771	805	-	864	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1480	-	-	1599	-	-	421	644	1059	673	649	957
Mov Cap-2 Maneuver	-	-	-	-	-	-	421	644	-	673	649	-
Stage 1	-	-	-	-	-	-	849	766	-	873	813	-
Stage 2	-	-	-	-	-	-	555	804	-	801	763	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.7			0			14.5			10.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	665	1480	-	-	1599	-	-	933
HCM Lane V/C Ratio	0.201	0.041	0.037	-	-	-	-	-	0.292
HCM Control Delay (s)	15.7	10.6	7.5	0	-	0	-	-	10.4
HCM Lane LOS	C	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0.1	0.1	-	-	0	-	-	1.2

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	22	71	3	2	16
Future Vol, veh/h	0	22	71	3	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	77	3	2	17
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	100	79	0	0	80	0
Stage 1	79	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	899	981	-	-	1518	-
Stage 1	944	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	898	981	-	-	1518	-
Mov Cap-2 Maneuver	898	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.8	0	0.8			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	981	1518	-	
HCM Lane V/C Ratio	-	-	0.024	0.001	-	
HCM Control Delay (s)	-	-	8.8	7.4	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	37	0	0	13	11	627	19	5	1474	10
Future Vol, veh/h	0	0	37	0	0	13	11	627	19	5	1474	10
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	40	0	0	14	12	682	21	5	1602	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	809	-	-	353	1614	0	0	704	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	323	0	0	643	400	-	-	890	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	322	-	-	642	400	-	-	889	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.8		10.7		0.2		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	400	-	-	322	642	889	-	-
HCM Lane V/C Ratio	0.03	-	-	0.125	0.022	0.006	-	-
HCM Control Delay (s)	14.3	-	-	17.8	10.7	9.1	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

PM Existing + Cumulative + Project
1: Centre City Pkwy & S. Escondido Connector

HCM 6th TWSC

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	125	37	1250	185	54	674
Future Vol, veh/h	125	37	1250	185	54	674
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	40	1359	201	59	733
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1845	681	0	0	1561	0
Stage 1	1360	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 66	393	-	-	419	-
Stage 1	204	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 57	393	-	-	419	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	204	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	54.7	0	1.1			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	183	393	419	-
HCM Lane V/C Ratio	-	-	0.742	0.102	0.14	-
HCM Control Delay (s)	-	-	66.4	15.2	15	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	4.8	0.3	0.5	-
Notes						
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon			

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	40	0	0	45	71	1396	221	47	730	45
Future Vol, veh/h	0	0	40	0	0	45	71	1396	221	47	730	45
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	49	77	1517	240	51	793	49
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	-	-	422	-	-	881	843	0	0	1758	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	580	0	0	290	789	-	-	352	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	580	-	-	290	788	-	-	352	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	11.7		19.9			0.4			1			
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	788	-	-	580	290	352	-	-				
HCM Lane V/C Ratio	0.098	-	-	0.075	0.169	0.145	-	-				
HCM Control Delay (s)	10.1	-	-	11.7	19.9	17	-	-				
HCM Lane LOS	B	-	-	B	C	C	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	0.2	0.6	0.5	-	-				

PM Existing + Cumulative + Project
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	19.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	204	54	18	9	19	28	20	148	14	40	147	3
Future Vol, veh/h	204	54	18	9	19	28	20	148	14	40	147	3
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	222	59	20	10	21	30	22	161	15	43	160	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	51	0	0	80	0	0	653	585	72	659	580	37
Stage 1	-	-	-	-	-	-	514	514	-	56	56	-
Stage 2	-	-	-	-	-	-	139	71	-	603	524	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1555	-	-	1518	-	-	380	423	990	377	426	1035
Stage 1	-	-	-	-	-	-	543	535	-	956	848	-
Stage 2	-	-	-	-	-	-	864	836	-	486	530	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1555	-	-	1517	-	-	219	357	988	213	359	1034
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	357	-	213	359	-
Stage 1	-	-	-	-	-	-	461	454	-	813	842	-
Stage 2	-	-	-	-	-	-	692	830	-	262	450	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.7			1.2			27.9			35.3		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	350	1555	-	-	1517	-	-	317
HCM Lane V/C Ratio	0.565	0.143	-	-	0.006	-	-	0.651
HCM Control Delay (s)	27.9	7.7	0	-	7.4	0	-	35.3
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	3.3	0.5	-	-	0	-	-	4.3

PM Existing + Cumulative + Project
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	115	13	125	59	20	24	1536	78	16	706	52
Future Volume (veh/h)	132	115	13	125	59	20	24	1536	78	16	706	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	143	125	14	136	64	22	26	1670	85	17	767	57
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	314	335	38	273	270	93	40	2178	971	29	2155	961
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.02	0.61	0.61	0.02	0.61	0.61
Sat Flow, veh/h	1311	1652	185	1250	1331	457	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	143	0	139	136	0	86	26	1670	85	17	767	57
Grp Sat Flow(s),veh/h/ln	1311	0	1837	1250	0	1788	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.3	0.0	4.7	7.5	0.0	2.9	1.0	24.5	1.6	0.7	7.7	1.0
Cycle Q Clear(g_c), s	10.2	0.0	4.7	12.2	0.0	2.9	1.0	24.5	1.6	0.7	7.7	1.0
Prop In Lane	1.00		0.10	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	0	373	273	0	363	40	2178	971	29	2155	961
V/C Ratio(X)	0.46	0.00	0.37	0.50	0.00	0.24	0.65	0.77	0.09	0.60	0.36	0.06
Avail Cap(c_a), veh/h	379	0	464	335	0	451	125	2790	1245	100	2740	1222
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	24.5	29.8	0.0	23.8	34.6	10.1	5.6	34.9	7.0	5.7
Incr Delay (d2), s/veh	1.0	0.0	0.6	1.4	0.0	0.3	16.1	1.0	0.0	18.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	2.0	2.3	0.0	1.2	0.6	7.9	0.4	0.4	2.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	25.1	31.2	0.0	24.1	50.6	11.1	5.7	53.1	7.1	5.8
LnGrp LOS	C	A	C	C	A	C	D	B	A	D	A	A
Approach Vol, veh/h		282			222			1781			841	
Approach Delay, s/veh		27.1			28.4			11.4			8.0	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	47.7		18.5	5.6	47.2		18.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	56.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+I1), s	2.7	26.5		12.2	3.0	9.7		14.2				
Green Ext Time (p_c), s	0.0	17.2		0.6	0.0	6.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			13.1									
HCM 6th LOS			B									

PM Existing + Cumulative + Project
5: S. Escondido Pkwy & Citracado Pkwy

HCM 6th TWSC

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	101	66	27	2	36	14	27	33	6	18	19	132
Future Vol, veh/h	101	66	27	2	36	14	27	33	6	18	19	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	72	29	2	39	15	29	36	7	20	21	143
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	101	0	0	440	365	93	385	372	47
Stage 1	-	-	-	-	-	-	307	307	-	51	51	-
Stage 2	-	-	-	-	-	-	133	58	-	334	321	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1491	-	-	527	563	964	573	558	1022
Stage 1	-	-	-	-	-	-	703	661	-	962	852	-
Stage 2	-	-	-	-	-	-	870	847	-	680	652	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1551	-	-	1491	-	-	414	520	959	505	516	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	414	520	-	505	516	-
Stage 1	-	-	-	-	-	-	650	611	-	890	851	-
Stage 2	-	-	-	-	-	-	729	846	-	585	603	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.9			0.3			13			10.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	414	559	1551	-	-	1491	-	-	838			
HCM Lane V/C Ratio	0.071	0.076	0.071	-	-	0.001	-	-	0.219			
HCM Control Delay (s)	14.4	12	7.5	0	-	7.4	0	-	10.5			
HCM Lane LOS	B	B	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	0.2	0.2	0.2	-	-	0	-	-	0.8			

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	10	65	12	12	42
Future Vol, veh/h	0	10	65	12	12	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	71	13	13	46
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	150	78	0	0	84	0
Stage 1	78	-	-	-	-	-
Stage 2	72	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	842	983	-	-	1513	-
Stage 1	945	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	834	983	-	-	1513	-
Mov Cap-2 Maneuver	834	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		1.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	983	1513	-	
HCM Lane V/C Ratio	-	-	0.011	0.009	-	
HCM Control Delay (s)	-	-	8.7	7.4	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	13	0	0	11	25	1626	61	7	835	12
Future Vol, veh/h	0	0	13	0	0	11	25	1626	61	7	835	12
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	14	0	0	12	27	1767	66	8	908	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	461	-	-	918	921	0	0	1833	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	547	0	0	274	737	-	-	329	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	547	-	-	274	737	-	-	329	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	11.8		18.7		0.1		0.1			
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	737	-	-	547	274	329	-	-
HCM Lane V/C Ratio	0.037	-	-	0.026	0.044	0.023	-	-
HCM Control Delay (s)	10.1	-	-	11.8	18.7	16.2	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-

Appendix L

City of Escondido General Plan Growth % and Horizon Year Segment Volumes

LINSCOTT
LAW &
GREENSPAN

engineers



Escondido General Plan Update Traffic Impact Analysis

December 5, 2011

Prepared by

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LLG Ref. 3-10-2000



5.0 FUTURE VOLUMES TRAFFIC MODEL

The future regional traffic volumes were developed using the SANDAG Series 11 Regional Traffic Model. This model was used since it has been fully approved by the SANDAG Board of Directors and most importantly has been utilized to produce the North County Sub-Area Model which contains the most up-to-date land use and network assumptions in the North County area of San Diego.

It should be noted that the following regional transportation improvements were assumed in the future forecast modeling:

- Sprinter Light Rail extension to North County Fair
- Interstate 15 north of State Route 78 as an 8-lane freeway with 4 toll lanes to the Riverside County border

5.1 Traffic Model Calibration

The Series 11 Traffic Model includes the land uses and network assumptions associated with the City of Escondido's adopted *General Plan*. To evaluate the proposed land-use and network changes associated with the *General Plan Update*, the current North County Sub-Area model traffic was calibrated to ensure accuracy. The purpose of "calibrating" the model was to determine the accuracy of the model's ability to predict future volumes. The process involves taking the model, which is generally used for predicting future volumes based on future land use/network assumptions, and using it to predict existing volumes (which are known) based on existing land uses. The model is run using existing land uses and network, and the output (daily traffic volumes) is compared to existing volumes that have actually been collected in the field. At locations where the model over- or under-estimates volumes, parameters within the model (centroid connectors, speed limits, trip generation rates) are adjusted and subsequent iterations are run until the "existing" output closely matches the known existing volumes. Once predicted volumes are sufficiently similar to existing volumes, the model is considered calibrated. This exercise was completed before future forecasting was conducted.

5.2 Traffic Model Development

The following is a discussion of the development process for each of the three future alternatives assessed in this traffic study:

5.2.1 Year 2035 Alternative 1 (Adopted General Plan)

The SANDAG North County Model was the basis for the development of the *Alternative 1 (Adopted General Plan)* traffic volumes. This model contains the land uses and network assumptions associated with the City of Escondido's adopted *General Plan*, and as such did not require extensive revision. LLG reviewed the model's network assumptions (roadway classifications, number of lanes, intersection controls, speed limits), and compared this information to the City of Escondido's current *General Plan Circulation Element* (January 2009) and made minor adjustments to ensure congruency with that document. The existing land uses in the model were also checked versus the on-the-ground land uses. The output of this traffic model was increased by 2.5% to represent

City of Escondido GENERAL PLAN

MAY 2012

Resolution 2012-52



Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity ⁽¹⁾ (LOS E)	Existing Conditions (Year 2011)			Adopted City General Plan Classification (County Classification) ⁽⁵⁾	Adopted CEMIE Capacity (LOS E)	Proposed Classification	Proposed CEMIE Capacity (LOS E)	Proposed Project (Year 2035)		
			ADT ⁽²⁾	LOS ⁽³⁾	V/C ⁽⁴⁾					ADT ⁽²⁾	LOS ⁽³⁾	V/C ⁽⁴⁾
12. South Escondido Boulevard / Centre City Parkway Target Area												
Escondido Boulevard												
5 th Avenue to 9 th Avenue	North/South	19,000	14,100	C	0.74	4-Ln Collector	34,200	4-Ln Collector	34,200	26,500	D	0.77
9 th Avenue to 13 th Avenue	North/South	19,000	13,600	C	0.72	4-Ln Collector	34,200	4-Ln Collector	34,200	29,600	D	0.87
13 th Avenue to 15 th Avenue	North/South	19,000	19,700	F	1.04	4-Ln Collector	34,200	4-Ln Collector	34,200	31,100	E	0.91
13th Avenue												
Centre City Parkway to Escondido Boulevard	East/West	10,000	5,900	C	0.59	4-Ln Collector	34,200	2-Ln Local Collector	15,000	9,000	C	0.60
9th Avenue												
Centre City Parkway to Escondido Boulevard	East/West	10,000	14,200	F	1.42	4-Ln Collector	34,200	4-Ln Collector	34,200	24,400	C	0.71
13. South Escondido Boulevard / Felicita Avenue Target Area												
Centre City Parkway												
13 th Avenue to Felicita Avenue	North/South	37,000	31,800	D	0.86	4-Ln Major	37,000	6-Ln Super Major	50,000	49,000	E	0.98
Felicita Avenue to Escondido Boulevard	North/South	37,000	26,500	C	0.72	4-Ln Major	37,000	6-Ln Super Major	50,000	44,400	D	0.89
Escondido Boulevard												
15 th Avenue to Felicita Avenue	North/South	20,000	20,800	F	1.04	4-Ln Collector	34,200	4-Ln Collector	34,200	31,700	E	0.93
Felicita Avenue to Sunset Drive	North/South	20,000	16,700	D	0.84	4-Ln Collector	34,200	4-Ln Collector	34,200	33,600	E	0.98
Sunset Drive to Centre City Parkway	North/South	20,000	12,700	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	26,000	D	0.76
Felicita Avenue												
Tulip Street to Centre City Parkway	East/West	10,000	15,000	F	1.50	4-Ln Collector	34,200	4-Ln Collector	34,200	26,900	D	0.79
Centre City Parkway to Escondido Boulevard	East/West	34,200	26,300	D	0.77	6-Ln Super Major	50,000	6-Ln Super Major	50,000	39,100	D	0.78
Escondido Boulevard to Juniper Street	East/West	15,000	18,200	F	1.21	6-Ln Super Major	50,000	4-Ln Major	37,000	31,800	D	0.86
14. Centre City Parkway / Brotherton Road Target Area												
Centre City Parkway												
Escondido Boulevard to Citracado Parkway	East/West	37,000	29,600	D	0.80	4-Ln Major	37,000	6-Ln Super Major	50,000	57,800	F ^{(6)(G)}	1.16
Citracado Parkway to I-15 SB On-Ramp	East/West	37,000	30,000	D	0.81	4-Ln Major	37,000	6-Ln Super Major	50,000	49,800	E ^{(6)(G)}	1.00
Centre City Parkway Frontage Road												
Brotherton Road to Citracado Parkway	East/West	15,000	2,100	A	0.14	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,700	C	0.71
Citracado Parkway to Clarence Lane	East/West	15,000	600	A	0.04	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	1,900	A	0.13
Escondido Boulevard												
Centre City Parkway to Citracado Parkway	East/West	10,000	4,700	B	0.47	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,400	B	0.49
Citracado Parkway to Centre City Parkway (intersection)	East/West	10,000	800	A	0.08	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,300	A	0.22



Appendix M

Horizon Year LOS Calculations

Please note for intersections #3 (S. Escondido Blvd at Brotherton Rd) and #5 (S. Escondido Blvd at Citracado Pkwy), the HCM analysis software does not allow for the analysis of the actual stop sign configuration as implemented in the field (i.e. 3 legs with stop signs and the EB approach without a stop sign). The HCM software output states “HCM does not support more than two Stop controlled approaches at the intersection”. Therefore, there were two choices in how to report the delay: all-way stop or two-way stop control. An all-way stop reports one delay, which is better LOS than showing the minor leg approach delays, thus a configuration of stop signs for the NB and SB approaches was used and reported.

AM Horizon
1: Centre City Pkwy & S. Escondido Connector

HCM 6th TWSC

Intersection						
Int Delay, s/veh	8.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑	↗	↘	↑↑
Traffic Vol, veh/h	260	50	650	60	40	1200
Future Vol, veh/h	260	50	650	60	40	1200
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	283	54	707	65	43	1304

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1445	354	0	0	772
Stage 1	707	-	-	-	-
Stage 2	738	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	~ 123	642	-	-	839
Stage 1	450	-	-	-	-
Stage 2	434	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 117	642	-	-	839
Mov Cap-2 Maneuver	309	-	-	-	-
Stage 1	450	-	-	-	-
Stage 2	412	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	59.9	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	309	642	839	-
HCM Lane V/C Ratio	-	-	0.915	0.085	0.052	-
HCM Control Delay (s)	-	-	69.3	11.1	9.5	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	8.8	0.3	0.2	-

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

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	60	0	0	30	20	700	40	40	1370	60
Future Vol, veh/h	0	0	60	0	0	30	20	700	40	40	1370	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	65	0	0	33	22	761	43	43	1489	65

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	777	-	-	402	1554	0	0	804	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	340	0	0	598	422	-	-	816	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	340	-	-	598	422	-	-	816	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.1		11.4		0.4		0.3	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	422	-	-	340	598	816	-	-
HCM Lane V/C Ratio	0.052	-	-	0.192	0.055	0.053	-	-
HCM Control Delay (s)	14	-	-	18.1	11.4	9.7	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.2	0.2	-	-

AM Horizon
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	11.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	40	0	20	20	40	10	90	10	60	220	0
Future Vol, veh/h	40	40	0	20	20	40	10	90	10	60	220	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	43	0	22	22	43	11	98	11	65	239	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	43	0	0	336	238	43	272	217	44
Stage 1	-	-	-	-	-	-	129	129	-	88	88	-
Stage 2	-	-	-	-	-	-	207	109	-	184	129	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1566	-	-	618	663	1027	680	681	1026
Stage 1	-	-	-	-	-	-	875	789	-	920	822	-
Stage 2	-	-	-	-	-	-	795	805	-	818	789	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1537	-	-	1566	-	-	428	634	1027	574	651	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	428	634	-	574	651	-
Stage 1	-	-	-	-	-	-	850	766	-	893	810	-
Stage 2	-	-	-	-	-	-	552	793	-	686	766	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.7			1.8			12.1			15.8		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	628	1537	-	-	1566	-	-	633
HCM Lane V/C Ratio	0.19	0.028	-	-	0.014	-	-	0.481
HCM Control Delay (s)	12.1	7.4	0	-	7.3	0	-	15.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	2.6

AM Horizon
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	30	40	250	140	10	20	660	20	10	1340	100
Future Volume (veh/h)	70	30	40	250	140	10	20	660	20	10	1340	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	33	43	272	152	11	22	717	22	11	1457	109
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	356	202	264	423	477	35	35	1922	839	20	1890	843
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.02	0.54	0.54	0.01	0.53	0.53
Sat Flow, veh/h	1221	730	952	1321	1723	125	1781	3554	1552	1781	3554	1585
Grp Volume(v), veh/h	76	0	76	272	0	163	22	717	22	11	1457	109
Grp Sat Flow(s),veh/h/ln	1221	0	1682	1321	0	1848	1781	1777	1552	1781	1777	1585
Q Serve(g_s), s	3.7	0.0	2.4	13.7	0.0	4.9	0.9	8.1	0.5	0.4	22.8	2.4
Cycle Q Clear(g_c), s	8.6	0.0	2.4	16.1	0.0	4.9	0.9	8.1	0.5	0.4	22.8	2.4
Prop In Lane	1.00		0.57	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	466	423	0	512	35	1922	839	20	1890	843
V/C Ratio(X)	0.21	0.00	0.16	0.64	0.00	0.32	0.62	0.37	0.03	0.56	0.77	0.13
Avail Cap(c_a), veh/h	488	0	649	567	0	712	102	2385	1042	102	2385	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	19.2	25.3	0.0	20.1	34.1	9.3	7.5	34.5	13.0	8.2
Incr Delay (d2), s/veh	0.3	0.0	0.2	1.6	0.0	0.4	16.4	0.1	0.0	22.8	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.9	4.2	0.0	2.0	0.5	2.8	0.1	0.3	8.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	19.3	26.9	0.0	20.4	50.5	9.4	7.5	57.2	14.2	8.3
LnGrp LOS	C	A	B	C	A	C	D	A	A	E	B	A
Approach Vol, veh/h		152			435			761			1577	
Approach Delay, s/veh		21.6			24.5			10.5			14.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	41.9		23.4	5.4	41.2		23.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	47.0		27.0	4.0	47.0		27.0				
Max Q Clear Time (g_c+I1), s	2.4	10.1		10.6	2.9	24.8		18.1				
Green Ext Time (p_c), s	0.0	5.9		0.5	0.0	12.5		1.2				
Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	8.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	50	10	10	0	80	20	60	20	0	0	10	260
Future Vol, veh/h	50	10	10	0	80	20	60	20	0	0	10	260
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	11	11	0	87	22	65	22	0	0	11	283

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	22	0	0	370	235	20	238	229	99
Stage 1	-	-	-	-	-	-	125	125	-	99	99	-
Stage 2	-	-	-	-	-	-	245	110	-	139	130	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1480	-	-	1593	-	-	587	666	1058	716	671	957
Stage 1	-	-	-	-	-	-	879	792	-	907	813	-
Stage 2	-	-	-	-	-	-	759	804	-	864	789	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1479	-	-	1593	-	-	397	641	1055	676	646	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	397	641	-	676	646	-
Stage 1	-	-	-	-	-	-	846	763	-	873	812	-
Stage 2	-	-	-	-	-	-	527	803	-	806	760	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.4			0			14.6			10.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	397	641	1479	-	-	1593	-	-	939
HCM Lane V/C Ratio	0.164	0.034	0.037	-	-	-	-	-	0.313
HCM Control Delay (s)	15.8	10.8	7.5	0	-	0	-	-	10.6
HCM Lane LOS	C	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0	-	-	1.3

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	40	0	0	10	10	680	20	10	1580	10
Future Vol, veh/h	0	0	40	0	0	10	10	680	20	10	1580	10
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	11	11	739	22	11	1717	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	866	-	-	382	1729	0	0	762	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	297	0	0	616	361	-	-	846	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	297	-	-	615	361	-	-	845	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.2		11		0.2		0.1	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	361	-	-	297	615	845	-	-
HCM Lane V/C Ratio	0.03	-	-	0.146	0.018	0.013	-	-
HCM Control Delay (s)	15.3	-	-	19.2	11	9.3	-	-
HCM Lane LOS	C	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0	-	-

Intersection						
Int Delay, s/veh	7.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑	↗	↘	↑↑
Traffic Vol, veh/h	140	40	1350	200	60	730
Future Vol, veh/h	140	40	1350	200	60	730
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	43	1467	217	65	793

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1995	735	0	0	1685
Stage 1	1468	-	-	-	-
Stage 2	527	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	~ 53	362	-	-	376
Stage 1	178	-	-	-	-
Stage 2	557	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 44	362	-	-	376
Mov Cap-2 Maneuver	160	-	-	-	-
Stage 1	178	-	-	-	-
Stage 2	461	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	93.2	0	1.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	160	362	376	-
HCM Lane V/C Ratio	-	-	0.951	0.12	0.173	-
HCM Control Delay (s)	-	-	115.2	16.3	16.6	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	7.1	0.4	0.6	-

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

PM Horizon
2: Centre City Pkwy & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	40	0	0	50	80	1510	240	50	790	50
Future Vol, veh/h	0	0	40	0	0	50	80	1510	240	50	790	50
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	54	87	1641	261	54	859	54

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	458	-	-	953	914	0	0	1903	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	550	0	0	260	742	-	-	309	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	550	-	-	260	741	-	-	309	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.1		22.5		0.5		1.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	741	-	-	550	260	309	-	-
HCM Lane V/C Ratio	0.117	-	-	0.079	0.209	0.176	-	-
HCM Control Delay (s)	10.5	-	-	12.1	22.5	19.1	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.3	0.8	0.6	-	-

PM Horizon
3: S. Escondido Blvd & Brotherton Rd

HCM 6th TWSC

Intersection												
Int Delay, s/veh	25.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	220	60	20	10	20	30	20	160	20	40	160	0
Future Vol, veh/h	220	60	20	10	20	30	20	160	20	40	160	0
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	239	65	22	11	22	33	22	174	22	43	174	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	88	0	0	704	632	79	715	627	40
Stage 1	-	-	-	-	-	-	555	555	-	61	61	-
Stage 2	-	-	-	-	-	-	149	77	-	654	566	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1550	-	-	1508	-	-	352	398	981	346	400	1031
Stage 1	-	-	-	-	-	-	516	513	-	950	844	-
Stage 2	-	-	-	-	-	-	854	831	-	456	507	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1507	-	-	182	330	979	174	332	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	330	-	174	332	-
Stage 1	-	-	-	-	-	-	432	429	-	796	837	-
Stage 2	-	-	-	-	-	-	671	824	-	222	424	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.7			1.2			35.8			50.9		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	1550	-	-	1507	-	-	281
HCM Lane V/C Ratio	0.669	0.154	-	-	0.007	-	-	0.774
HCM Control Delay (s)	35.8	7.7	0	-	7.4	0	-	50.9
HCM Lane LOS	E	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	4.5	0.5	-	-	0	-	-	5.9

PM Horizon
4: Centre City Pkwy & Citracado Pkwy

HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	110	10	130	60	20	30	1660	80	20	760	60
Future Volume (veh/h)	140	110	10	130	60	20	30	1660	80	20	760	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	120	11	141	65	22	33	1804	87	22	826	65
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	301	336	31	267	266	90	47	2224	992	35	2200	981
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.03	0.63	0.63	0.02	0.62	0.62
Sat Flow, veh/h	1310	1688	155	1259	1337	452	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	152	0	131	141	0	87	33	1804	87	22	826	65
Grp Sat Flow(s),veh/h/ln	1310	0	1843	1259	0	1789	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.5	0.0	4.7	8.4	0.0	3.2	1.4	29.8	1.7	0.9	8.9	1.3
Cycle Q Clear(g_c), s	11.7	0.0	4.7	13.1	0.0	3.2	1.4	29.8	1.7	0.9	8.9	1.3
Prop In Lane	1.00		0.08	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	0	367	267	0	356	47	2224	992	35	2200	981
V/C Ratio(X)	0.51	0.00	0.36	0.53	0.00	0.24	0.70	0.81	0.09	0.63	0.38	0.07
Avail Cap(c_a), veh/h	345	0	430	310	0	417	115	2578	1150	92	2532	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	0.0	26.6	32.3	0.0	26.0	37.3	11.0	5.7	37.6	7.3	5.8
Incr Delay (d2), s/veh	1.3	0.0	0.6	1.6	0.0	0.4	17.5	1.8	0.0	17.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	2.1	2.6	0.0	1.3	0.8	10.0	0.5	0.6	2.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	27.2	33.9	0.0	26.4	54.8	12.8	5.8	55.1	7.4	5.9
LnGrp LOS	C	A	C	C	A	C	D	B	A	E	A	A
Approach Vol, veh/h		283			228			1924			913	
Approach Delay, s/veh		29.9			31.0			13.2			8.4	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	52.3		19.4	6.0	51.8		19.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	56.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c + I1), s	2.9	31.8		13.7	3.4	10.9		15.1				
Green Ext Time (p_c), s	0.0	16.5		0.5	0.0	7.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									

PM Horizon
5: S. Escondido Pkwy & Citracado Pkwy

HCM 6th TWSC

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	110	70	20	0	40	20	20	30	10	20	20	140
Future Vol, veh/h	110	70	20	0	40	20	20	30	10	20	20	140
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	76	22	0	43	22	22	33	11	22	22	152

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	98	0	0	468	392	93	409	392	54
Stage 1	-	-	-	-	-	-	327	327	-	54	54	-
Stage 2	-	-	-	-	-	-	141	65	-	355	338	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1495	-	-	505	544	964	553	544	1013
Stage 1	-	-	-	-	-	-	686	648	-	958	850	-
Stage 2	-	-	-	-	-	-	862	841	-	662	641	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1537	-	-	1495	-	-	389	499	959	484	499	1013
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	499	-	484	499	-
Stage 1	-	-	-	-	-	-	629	594	-	878	850	-
Stage 2	-	-	-	-	-	-	714	841	-	564	588	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.1			0			12.9			10.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	389	567	1537	-	-	1495	-	-	820
HCM Lane V/C Ratio	0.056	0.077	0.078	-	-	-	-	-	0.239
HCM Control Delay (s)	14.8	11.9	7.5	0	-	0	-	-	10.8
HCM Lane LOS	B	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.2	0.3	-	-	0	-	-	0.9

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	10	0	0	10	30	1760	50	10	900	10
Future Vol, veh/h	0	0	10	0	0	10	30	1760	50	10	900	10
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	11	33	1913	54	11	978	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	495	-	-	985	989	0	0	1967	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	520	0	0	247	695	-	-	292	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	520	-	-	247	695	-	-	292	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.1		20.2		0.2		0.2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	695	-	-	520	247	292	-	-
HCM Lane V/C Ratio	0.047	-	-	0.021	0.044	0.037	-	-
HCM Control Delay (s)	10.4	-	-	12.1	20.2	17.8	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-

Appendix N

Horizon Year plus Project LOS Calculations

Please note for intersections #3 (S. Escondido Blvd at Brotherton Rd) and #5 (S. Escondido Blvd at Citracado Pkwy), the HCM analysis software does not allow for the analysis of the actual stop sign configuration as implemented in the field (i.e. 3 legs with stop signs and the EB approach without a stop sign). The HCM software output states “HCM does not support more than two Stop controlled approaches at the intersection”. Therefore, there were two choices in how to report the delay: all-way stop or two-way stop control. An all-way stop reports one delay, which is better LOS than showing the minor leg approach delays, thus a configuration of stop signs for the NB and SB approaches was used and reported.

Intersection						
Int Delay, s/veh	8.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	260	50	651	60	40	1200
Future Vol, veh/h	260	50	651	60	40	1200
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	283	54	708	65	43	1304

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1446	354	0	0	773	0
Stage 1	708	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 122	642	-	-	838	-
Stage 1	449	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 116	642	-	-	838	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	412	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	60.5	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	308	642	838	-
HCM Lane V/C Ratio	-	-	0.918	0.085	0.052	-
HCM Control Delay (s)	-	-	70	11.1	9.5	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	8.8	0.3	0.2	-

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

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	60	0	0	30	20	701	40	40	1370	60
Future Vol, veh/h	0	0	60	0	0	30	20	701	40	40	1370	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	65	0	0	33	22	762	43	43	1489	65

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	777	-	-	403	1554	0	0	805	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	340	0	0	597	422	-	-	815	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	340	-	-	597	422	-	-	815	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.1		11.4		0.4		0.3	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	422	-	-	340	597	815	-	-
HCM Lane V/C Ratio	0.052	-	-	0.192	0.055	0.053	-	-
HCM Control Delay (s)	14	-	-	18.1	11.4	9.7	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.2	0.2	-	-

Intersection												
Int Delay, s/veh	11.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	40	0	20	20	40	10	91	10	60	220	0
Future Vol, veh/h	40	40	0	20	20	40	10	91	10	60	220	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	43	0	22	22	43	11	99	11	65	239	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	43	0	0	336	238	43	272	217	44
Stage 1	-	-	-	-	-	-	129	129	-	88	88	-
Stage 2	-	-	-	-	-	-	207	109	-	184	129	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1566	-	-	618	663	1027	680	681	1026
Stage 1	-	-	-	-	-	-	875	789	-	920	822	-
Stage 2	-	-	-	-	-	-	795	805	-	818	789	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1537	-	-	1566	-	-	428	634	1027	573	651	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	428	634	-	573	651	-
Stage 1	-	-	-	-	-	-	850	766	-	893	810	-
Stage 2	-	-	-	-	-	-	552	793	-	684	766	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.7			1.8			12.1			15.8		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	628	1537	-	-	1566	-	-	633
HCM Lane V/C Ratio	0.192	0.028	-	-	0.014	-	-	0.481
HCM Control Delay (s)	12.1	7.4	0	-	7.3	0	-	15.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	2.6

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HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	32	40	261	149	11	20	660	20	10	1340	100
Future Volume (veh/h)	70	32	40	261	149	11	20	660	20	10	1340	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	35	43	284	162	12	22	717	22	11	1457	109
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	356	216	265	431	491	36	35	1904	832	20	1873	835
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.02	0.54	0.54	0.01	0.53	0.53
Sat Flow, veh/h	1209	757	930	1319	1720	127	1781	3554	1552	1781	3554	1585
Grp Volume(v), veh/h	76	0	78	284	0	174	22	717	22	11	1457	109
Grp Sat Flow(s),veh/h/ln	1209	0	1686	1319	0	1847	1781	1777	1552	1781	1777	1585
Q Serve(g_s), s	3.8	0.0	2.5	14.7	0.0	5.3	0.9	8.4	0.5	0.4	23.5	2.5
Cycle Q Clear(g_c), s	9.1	0.0	2.5	17.2	0.0	5.3	0.9	8.4	0.5	0.4	23.5	2.5
Prop In Lane	1.00		0.55	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	481	431	0	527	35	1904	832	20	1873	835
V/C Ratio(X)	0.21	0.00	0.16	0.66	0.00	0.33	0.62	0.38	0.03	0.56	0.78	0.13
Avail Cap(c_a), veh/h	467	0	636	552	0	697	100	2333	1019	100	2333	1041
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	0.0	19.2	25.6	0.0	20.2	34.8	9.7	7.8	35.2	13.6	8.6
Incr Delay (d2), s/veh	0.3	0.0	0.2	1.9	0.0	0.4	16.6	0.1	0.0	22.9	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.9	4.6	0.0	2.2	0.5	2.9	0.1	0.3	8.4	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	19.3	27.5	0.0	20.5	51.5	9.8	7.8	58.1	14.9	8.7
LnGrp LOS	C	A	B	C	A	C	D	A	A	E	B	A
Approach Vol, veh/h		154			458			761			1577	
Approach Delay, s/veh		21.7			24.9			10.9			14.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	42.4		24.4	5.4	41.7		24.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	47.0		27.0	4.0	47.0		27.0				
Max Q Clear Time (g_c+I1), s	2.4	10.4		11.1	2.9	25.5		19.2				
Green Ext Time (p_c), s	0.0	5.9		0.6	0.0	12.2		1.2				
Intersection Summary												
HCM 6th Ctrl Delay			15.7									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	8.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	50	10	12	0	80	20	81	21	0	0	10	260
Future Vol, veh/h	50	10	12	0	80	20	81	21	0	0	10	260
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	11	13	0	87	22	88	23	0	0	11	283

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	24	0	0	371	236	21	239	231	99
Stage 1	-	-	-	-	-	-	126	126	-	99	99	-
Stage 2	-	-	-	-	-	-	245	110	-	140	132	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1480	-	-	1591	-	-	586	665	1056	715	669	957
Stage 1	-	-	-	-	-	-	878	792	-	907	813	-
Stage 2	-	-	-	-	-	-	759	804	-	863	787	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1479	-	-	1591	-	-	396	640	1053	674	644	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	396	640	-	674	644	-
Stage 1	-	-	-	-	-	-	846	763	-	873	812	-
Stage 2	-	-	-	-	-	-	527	803	-	804	758	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.2			0			15.5			10.6		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	396	640	1479	-	-	1591	-	-	939
HCM Lane V/C Ratio	0.222	0.036	0.037	-	-	-	-	-	0.313
HCM Control Delay (s)	16.7	10.8	7.5	0	-	0	-	-	10.6
HCM Lane LOS	C	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	0.1	-	-	0	-	-	1.3

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	22	80	3	2	20
Future Vol, veh/h	0	22	80	3	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	87	3	2	22
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	115	89	0	0	90	0
Stage 1	89	-	-	-	-	-
Stage 2	26	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	881	969	-	-	1505	-
Stage 1	934	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	880	969	-	-	1505	-
Mov Cap-2 Maneuver	880	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.8	0	0.7			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	969	1505	-	
HCM Lane V/C Ratio	-	-	0.025	0.001	-	
HCM Control Delay (s)	-	-	8.8	7.4	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	40	0	0	10	10	680	23	10	1591	10
Future Vol, veh/h	0	0	40	0	0	10	10	680	23	10	1591	10
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	11	11	739	25	11	1729	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	872	-	-	383	1741	0	0	765	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	294	0	0	615	357	-	-	844	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	294	-	-	614	357	-	-	843	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.4		11		0.2		0.1	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	357	-	-	294	614	843	-	-
HCM Lane V/C Ratio	0.03	-	-	0.148	0.018	0.013	-	-
HCM Control Delay (s)	15.4	-	-	19.4	11	9.3	-	-
HCM Lane LOS	C	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0	-	-

Intersection						
Int Delay, s/veh	7.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑	↗	↘	↑↑
Traffic Vol, veh/h	140	40	1351	200	60	731
Future Vol, veh/h	140	40	1351	200	60	731
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	75	-	140	120	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	43	1468	217	65	795
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1997	735	0	0	1686	0
Stage 1	1469	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 52	362	-	-	375	-
Stage 1	178	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 43	362	-	-	375	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	178	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	93.2	0	1.3			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	160	362	375	-
HCM Lane V/C Ratio	-	-	0.951	0.12	0.174	-
HCM Control Delay (s)	-	-	115.2	16.3	16.6	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	7.1	0.4	0.6	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	40	0	0	50	80	1511	240	50	791	50
Future Vol, veh/h	0	0	40	0	0	50	80	1511	240	50	791	50
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	54	87	1642	261	54	860	54

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	458	-	-	954	915	0	0	1904	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	550	0	0	259	741	-	-	309	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	550	-	-	259	740	-	-	309	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.1		22.6		0.5		1.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	740	-	-	550	259	309	-	-
HCM Lane V/C Ratio	0.118	-	-	0.079	0.21	0.176	-	-
HCM Control Delay (s)	10.5	-	-	12.1	22.6	19.1	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.3	0.8	0.6	-	-

Intersection												
Int Delay, s/veh	25.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	220	60	20	10	20	30	20	161	20	40	161	0
Future Vol, veh/h	220	60	20	10	20	30	20	161	20	40	161	0
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	239	65	22	11	22	33	22	175	22	43	175	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	88	0	0	704	632	79	716	627	40
Stage 1	-	-	-	-	-	-	555	555	-	61	61	-
Stage 2	-	-	-	-	-	-	149	77	-	655	566	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1550	-	-	1508	-	-	352	398	981	345	400	1031
Stage 1	-	-	-	-	-	-	516	513	-	950	844	-
Stage 2	-	-	-	-	-	-	854	831	-	455	507	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1507	-	-	181	330	979	173	332	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	330	-	173	332	-
Stage 1	-	-	-	-	-	-	432	429	-	796	837	-
Stage 2	-	-	-	-	-	-	669	824	-	220	424	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.7			1.2			36.1			51.3		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	1550	-	-	1507	-	-	281
HCM Lane V/C Ratio	0.672	0.154	-	-	0.007	-	-	0.778
HCM Control Delay (s)	36.1	7.7	0	-	7.4	0	-	51.3
HCM Lane LOS	E	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	4.6	0.5	-	-	0	-	-	6

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HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	119	10	135	63	21	30	1660	80	21	760	60
Future Volume (veh/h)	140	119	10	135	63	21	30	1660	80	21	760	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	129	11	147	68	23	33	1804	87	23	826	65
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	307	352	30	269	277	94	47	2204	983	36	2183	974
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.03	0.62	0.62	0.02	0.61	0.61
Sat Flow, veh/h	1306	1699	145	1249	1337	452	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	152	0	140	147	0	91	33	1804	87	23	826	65
Grp Sat Flow(s),veh/h/ln	1306	0	1844	1249	0	1789	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.7	0.0	5.1	9.0	0.0	3.3	1.4	30.8	1.7	1.0	9.2	1.3
Cycle Q Clear(g_c), s	12.0	0.0	5.1	14.1	0.0	3.3	1.4	30.8	1.7	1.0	9.2	1.3
Prop In Lane	1.00		0.08	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	382	269	0	371	47	2204	983	36	2183	974
V/C Ratio(X)	0.50	0.00	0.37	0.55	0.00	0.25	0.71	0.82	0.09	0.64	0.38	0.07
Avail Cap(c_a), veh/h	334	0	422	296	0	409	113	2527	1127	90	2482	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	26.8	32.8	0.0	26.1	38.0	11.5	6.0	38.3	7.6	6.1
Incr Delay (d2), s/veh	1.2	0.0	0.6	1.7	0.0	0.3	17.9	2.0	0.0	17.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.3	2.8	0.0	1.4	0.9	10.5	0.5	0.6	3.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	27.4	34.6	0.0	26.4	56.0	13.5	6.0	55.9	7.7	6.1
LnGrp LOS	C	A	C	C	A	C	E	B	A	E	A	A
Approach Vol, veh/h		292			238			1924			914	
Approach Delay, s/veh		29.9			31.5			13.9			8.8	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	52.8		20.3	6.1	52.4		20.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	56.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c + I1), s	3.0	32.8		14.0	3.4	11.2		16.1				
Green Ext Time (p_c), s	0.0	16.0		0.5	0.0	7.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			15.2									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	110	70	31	0	40	20	29	31	10	20	21	140
Future Vol, veh/h	110	70	31	0	40	20	29	31	10	20	21	140
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	76	34	0	43	22	32	34	11	22	23	152
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	110	0	0	475	398	99	416	404	54
Stage 1	-	-	-	-	-	-	333	333	-	54	54	-
Stage 2	-	-	-	-	-	-	142	65	-	362	350	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1480	-	-	500	540	957	547	536	1013
Stage 1	-	-	-	-	-	-	681	644	-	958	850	-
Stage 2	-	-	-	-	-	-	861	841	-	657	633	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1537	-	-	1480	-	-	384	495	952	478	492	1013
Mov Cap-2 Maneuver	-	-	-	-	-	-	384	495	-	478	492	-
Stage 1	-	-	-	-	-	-	624	591	-	878	850	-
Stage 2	-	-	-	-	-	-	712	841	-	559	580	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.9			0			13.3			10.8		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	384	561	1537	-	-	1480	-	-	813			
HCM Lane V/C Ratio	0.082	0.079	0.078	-	-	-	-	-	0.242			
HCM Control Delay (s)	15.2	12	7.5	0	-	0	-	-	10.8			
HCM Lane LOS	C	B	A	A	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.3	0.3	0.3	-	-	0	-	-	0.9			

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	10	70	12	12	50
Future Vol, veh/h	0	10	70	12	12	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	76	13	13	54
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	163	83	0	0	89	0
Stage 1	83	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	828	976	-	-	1506	-
Stage 1	940	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	821	976	-	-	1506	-
Mov Cap-2 Maneuver	821	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		1.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	976	1506	-	
HCM Lane V/C Ratio	-	-	0.011	0.009	-	
HCM Control Delay (s)	-	-	8.7	7.4	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↔		↗	↕↔	
Traffic Vol, veh/h	0	0	10	0	0	10	30	1760	62	10	905	10
Future Vol, veh/h	0	0	10	0	0	10	30	1760	62	10	905	10
Conflicting Peds, #/hr	0	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	80	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	11	33	1913	67	11	984	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	498	-	-	991	995	0	0	1980	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	518	0	0	245	691	-	-	288	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	518	-	-	245	691	-	-	288	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	12.1		20.4		0.2		0.2			
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	691	-	-	518	245	288	-	-
HCM Lane V/C Ratio	0.047	-	-	0.021	0.044	0.038	-	-
HCM Control Delay (s)	10.5	-	-	12.1	20.4	18	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-