TRAFFIC INVESTIGATION

POINSETTIA LANE GAP CLOSURE

CARLSBAD, CALIFORNIA

LSA

November 2019

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LIST OF ABBREVIATIONS AND ACRONYMS

CEQA	California Environmental Quality Act
City	City of Carlsbad
HCM	Highway Capacity Manual
HMP	(City of Carlsbad) Habitat Management Plan for Natural Communities
ICU	Intersection Capacity Utilization
ITE	Institute of Transportation Engineers
LOS	level(s) of service
MMLOS	Multimodal Level of Service
mph	miles per hour
MUTCD	California Manual on Uniform Traffic Control Devices
N/A	not applicable
NDS	National Data and Surveying Services
SANDAG	San Diego Association of Governments
SANTEC	San Diego Traffic Engineers' Council
V/C	volume-to-capacity

INTRODUCTION

Poinsettia Lane from Carlsbad Boulevard to Melrose Drive has been a part of the Carlsbad planned roadway network since at least 1994. Poinsettia Lane is completed except for an approximately 1,800-foot segment between Aviara Parkway and Black Rail Road (where three of the planned four lanes are constructed) and an approximately 1,500-foot gap between Cassia Road and Oriole Court-Skimmer Court. Completion of Poinsettia Lane (including closure of the gap between Cassia Road and Oriole Court-Skimmer Court) was included in the Carlsbad General Plan Update adopted by the City Council on September 22, 2015, and had been included in previous General Plans. The General Plan Mobility Element section titled "Future Operations and Street Improvements" states the following:

> Most of the envisioned Carlsbad street system is built out. The remaining planned street improvements are summarized in Table 3-2; these facilities serve the needs of land uses identified in the Land Use and Community Design Element. The planned streets are identified on the Street Network map, Figure 3-1.

One of the projects included in the referenced table and figure is Poinsettia Lane, which is described as "Complete improvements between Cassia Road and El Camino Real to connector street typology standards."

Completion of the Poinsettia Lane gap closure is funded in part from the Bridge and Thoroughfare District Fee Program. The proposed Poinsettia 61 residential development within and adjacent to the roadway gap provided additional funding. At this time, the City of Carlsbad (City) is preparing to close the gap in Poinsettia Lane.

Although the completion of Poinsettia Lane has been planned for some time, the existing conditions have prevailed for so long so as to seem permanent. Residents of the Viadana and Pavoreal neighborhoods have also raised concerns regarding future cut-through traffic through the residential neighborhoods. This traffic investigation considers the potential effects of the gap closure on the surrounding roadway system and adjacent intersections and provides potential strategies for limiting the intrusion of cut-through traffic into the Viadana and Pavoreal neighborhoods. Importantly, this traffic investigation also establishes baseline conditions for the surrounding roadway network that can be used to determine the extent of intrusion if requests for additional intervention are pursued through the Carlsbad Residential Traffic Management Program.

METHODOLOGY

Study Area

Approximately 1,000 feet west of the gap closure, Poinsettia Lane intersects Ambrosia Lane. Ambrosia Lane provides a connection to Aviara Parkway and a travel path around the current gap in Poinsettia Lane. About 0.25 mile east of the gap closure, Poinsettia Lane intersects El Camino Real, just north (0.50 mile) of the El Camino Real/Aviara Parkway intersection. These connections to Aviara Parkway and a path around the current gap were chosen as the bookends of the study area. Within this study area are the following intersections and roadway segments:

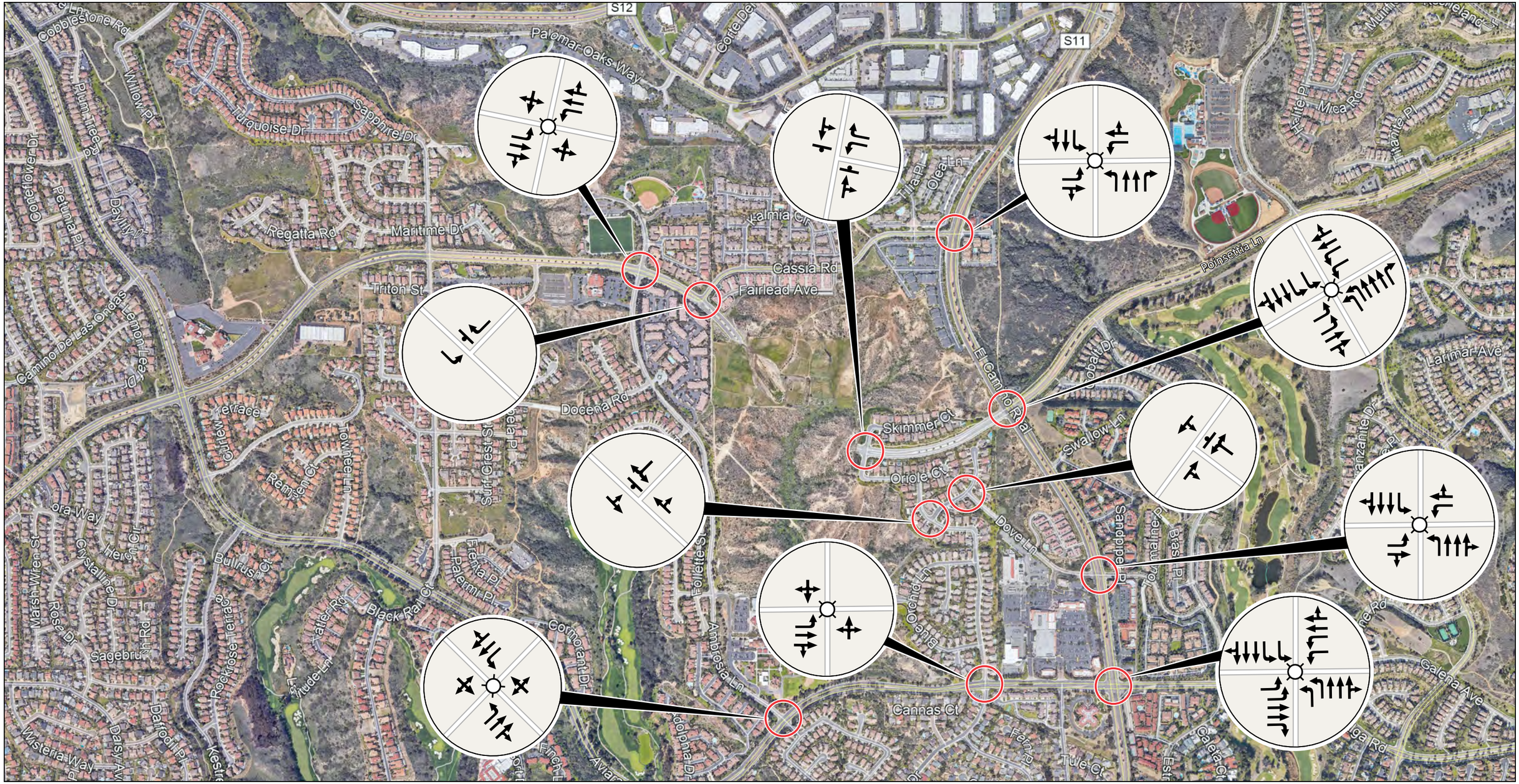
Study Area Intersections

1. Ambrosia Lane/Poinsettia Lane
2. Ambrosia Lane/Aviara Parkway
3. Poinsettia Lane/Cassia Road
4. Oriole Court-Skimmer Court/Poinsettia Lane
5. Mimosa Drive/Moorhen Place
6. Dove Lane/Moorhen Place
7. Mimosa Drive/Aviara Parkway
8. El Camino Real/Cassia Road
9. El Camino Real/Poinsettia Lane
10. El Camino Real/Dove Lane
11. El Camino Real/Aviara Parkway

Study Area Roadway Segments (Classification and Priority Travel Modes)

1. Poinsettia Lane between Aviara Parkway and Ambrosia Lane (Arterial Connector: vehicle, pedestrian, and bicycle)
2. Poinsettia Lane between Ambrosia Lane and Cassia Road (Arterial Connector: vehicle, pedestrian, and bicycle)
3. Poinsettia Lane between Cassia Road and El Camino Real (Arterial Connector: vehicle, pedestrian, and bicycle)
4. El Camino Real between Cassia Road and Poinsettia Lane (Arterial Street: vehicle and transit)
5. El Camino Real between Poinsettia Lane and Aviara Parkway (Arterial Street: vehicle and transit)
6. Cassia Road between Poinsettia Lane and El Camino Real (Local/Neighborhood Street: pedestrian and bicycle)
7. Ambrosia Lane between Poinsettia Lane and Aviara Parkway (School Street: pedestrian and bicycle)
8. Mimosa Drive between Oriole Court and Aviara Parkway (Local/Neighborhood Street: pedestrian and bicycle)
9. Dove Lane between Moorhen Place and Black Skimmer Road (Local/Neighborhood Street: pedestrian and bicycle)

Figure 1 illustrates the study area and the existing geometrics and traffic control for each study area intersection.



LSA

N

0 500 1000
FEET

SOURCE: Google Earth, 2018

LEGEND

- Directional Travel Lane
- Signal
- Stop Sign

FIGURE 1

Poinsettia Lane Gap Closure

Study Area and Existing Geometrics/Traffic Control

I:\HCR1803\G\Geometrics&Traffic Control.cdr (3/19/2019)

Intersection LOS Methodology

In April 2018, the City adopted the *City of Carlsbad Transportation Impact Analysis Guidelines*. These new guidelines reduce the emphasis of vehicle level of service (LOS) analysis at intersections. Traffic analyses are to consider the ability for existing and future roadways to carry through traffic. For the study area, the guidelines specify the following: corridor analyses based on roadway capacity, turning-movement needs assessments for signalized intersections, and signal warrant analyses for degraded unsignalized intersections. Because the report audience may be familiar with the previous analysis methodology of assigning performance letter grades, this traffic investigation includes intersection LOS for informational purposes.

Roadway Corridor Capacity

In February 2019, the City released the *Roadway Capacity Tables Report* for use in evaluating traffic conditions in environmental documents and monitoring transportation facilities consistent with the Growth Management Program. For 10 corridors within the City (including Poinsettia Lane and El Camino Real), the report includes roadway capacity specific to the physical conditions of those roadways, including the number of lanes, speed limit, and intersection spacing. The report also includes general capacity values that can be applied to other corridors. General roadway capacity values are provided in the table below. The analysis in this report applies the specific capacity values for Poinsettia Lane and El Camino Real, which have specific capacity values published in the *Roadway Capacity Tables Report.*

Lanes	Speed Limit (mph)	Daily Street Segment Capacity			Peak- Hour Single- Direction Capacity		
		LOS C	LOS D	LOS E	LOS C	LOS D	LOS E
2	35 (undivided)	4,200	13,700	17,200	180	590	740
	35 (divided)	4,400	14,600	18,100	190	630	780
4	35	12,100	32,200	35,800	520	1,390	1,540
	45	13,900	36,200	40,800	600	1,560	1,760
	50	19,700	39,200	42,200	850	1,690	1,820
	55	24,400	41,700	43,800	1,050	1,800	1,890
6	35	15,800	41,700	59,000	680	2,230	2,540
	45	-	-	-	2,040	26,660	2,700
	50	54,700	63,900	64,800	2,360	2,760	2,800
	55	60,200	66,500	67,000	2,600	2,870	2,900
8	45	-	-	-	2,780	3,560	3,620

Source: Table 2, *Roadway Capacity Tables Report* (City of Carlsbad 2019).
LOS = level of service
mph = miles per hour

Intersection Turning Movement Needs Assessments

The *City of Carlsbad Transportation Impact Analysis Guidelines* explicitly define intersection turning-movement needs:

> **Left turn queue assessment:** Compare the left-turn volume with the length of the left turn pocket(s). A general rule of thumb of one foot per left turning vehicle per lane may be used for this analysis.

Left-turn volume: If the left-turn volume exceeds 250 vehicles per hour, a second left-turn lane is recommended.

Right-turn volume: If the right-turn volume exceeds 150 vehicles per hour, a dedicated right-turn lane is recommended.

To enhance the criteria provided above, this traffic investigation also examined the turning-movement queues predicted by the traffic analysis software.

Vehicle Level of Service

Prior to the April 2018 adoption of the *City of Carlsbad Transportation Impact Analysis Guidelines*, traffic studies in Carlsbad included calculations of intersection LOS. Two methodologies were used to calculate intersection performance. The Intersection Capacity Utilization (ICU) methodology compares the amount of traffic an intersection is able to process (capacity) to the level of traffic during peak hours (volume). The resulting volume-to-capacity ratio (v/c) is expressed in terms of LOS. Highway Capacity Manual (HCM) methodology calculates the average delay experienced by vehicles at intersections. The resulting calculation of average delay experienced by vehicles at the intersection is then used to determine the LOS at that location. LOS A represents free-flow activity, and LOS F represents overcapacity operation. LOS is a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, speed, delay, and maneuverability on roadway and intersection operations. LOS criteria are presented below.

LOS Descriptions

- **LOS A** represents free flow travel for vehicles. Individual users are virtually unaffected by other vehicles in the traffic stream.
- **LOS B** represents stable flow, but the presence of other users in the traffic stream begins to be noticeable.
- **LOS C** represents a range in which the influence of traffic density on operations becomes noticeable. The ability to maneuver within the traffic stream and to select an operating speed is now clearly affected by the presence of other vehicles.
- **LOS D** borders on unstable flow. Speeds and ability to maneuver are severely restricted because of traffic congestion.
- **LOS E** represents unstable operating conditions at or near the capacity level where maneuverability is severely limited.
- **LOS F** is used to define forced or breakdown traffic flow.

The relationship between LOS and the delay (in seconds) or v/c ratio at signalized intersections is as follows:

Level of Service	Signalized Intersection Volume-to-Capacity (ICU Methodology)	Signalized Intersection Delay in seconds (HCM Methodology)	Unsignalized Intersection Delay in seconds (HCM Methodology)
A	≤ 0.60	≤ 10.0	≤10.0
B	0.61–0.70	> 10.0 and ≤ 20.0	>10.0 and ≤15.0
C	0.71–0.80	> 20.0 and ≤ 35.0	>15.0 and ≤25.0
D	0.81–0.90	> 35.0 and ≤ 55.0	>25.0 and ≤35.0
E	0.91–1.00	> 55.0 and ≤ 80.0	>35.0 and ≤50.0
F	> 1.00	> 80.0	>50.0

HCM = Highway Capacity Manual
ICU = intersection capacity utilization

Carlsbad Multimodal Level of Service The City's General Plan Mobility Element developed the Carlsbad Multimodal Level of Service (MMLOS) that is used to evaluate the transportation facilities in the City. The City's MMLOS methodology provides a qualitative grade assigned to prioritized travel modes in different street typologies, as identified in the City's General Plan. The LOS ranges from LOS A to LOS F. The City General Plan requires LOS D or better for the travel modes prioritized on that street's typology. The four travel modes the MMLOS evaluates are vehicles, pedestrians, bicycles, and transit. Vehicle LOS is determined by comparing roadway volume to capacity, as stated previously. Pedestrian, bicycle, and transit LOS are determined by using the City MMLOS criteria.

The Carlsbad MMLOS evaluates pedestrian, bicycle, and transit LOS by assessing the attributes of the pedestrian, bicycle, or transit facility. Each attribute corresponds to a point system that adds together to correspond to an LOS grade, as summarized in the following table.

Level of Service	Point Score
A	9.0–10.0
B	8.0–8.99
C	7.0–7.99
D	6.0–6.99
E	5.0–5.99
F	0–4.99

EXISTING TRAFFIC CONDITIONS

Roadway Volume

Roadway segment volumes were collected by National Data and Surveying Services (NDS), an independent survey company, on Tuesday, May 22, 2018, by pneumatic tube. Traffic data are provided in Appendix A. Data were collected for each direction of travel over a 24-hour period. Table A presents the existing daily traffic volume for each of the study roadway segments and compares that volume to the daily roadway capacity. As Table A shows, the roadway segments of Poinsettia Lane west of El Camino Real, Mimosa Drive between Oriole Court and Aviara Parkway, and Dove Lane between Moorhen Place and El Camino Real have existing traffic volumes that are a particularly low percent of the roadway capacity.

Table A: Existing Daily Roadway Volume and Capacity

Roadway Segment	Lanes	Capacity at LOS D	Existing Volume	V/C	Existing LOS D or Better
Poinsettia Lane (Aviara Parkway to Ambrosia Lane)	4	39,200	10,330	0.26	Yes
Poinsettia Lane (Ambrosia Lane to Cassia Road)	4	39,200	9,789	0.25	Yes
Poinsettia Lane (Cassia Road to El Camino Real)	4	39,200	851	0.02	Yes
El Camino Real (Cassia Road to Poinsettia Lane)	5	54,100	33,236	0.61	Yes
El Camino Real (Poinsettia Lane to Aviara Parkway)	6	54,100	38,647	0.71	Yes
Cassia Road (Poinsettia Lane to El Camino Real)	4	32,200	9,290	0.29	Yes
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	2	13,700	3,321	0.24	Yes
Mimosa Drive (Oriole Court to Aviara Parkway)	2	13,700	679	0.05	Yes
Dove Lane (Moorhen Place to Black Skimmer Road)	2	13,700	368	0.02	Yes

LOS = level of service
V/C = volume-to-capacity

Because traffic volumes were collected for each direction of travel, the volume of vehicles in each direction during the morning and afternoon peak commute hours could be determined. Table B presents the peak hour roadway link analysis. Similar to the analysis of daily traffic, Table B shows the roadway segments of Poinsettia Lane west of El Camino Real, Mimosa Drive between Oriole Court and Aviara Parkway, and Dove Lane between Moorhen Place and El Camino Real have existing traffic volumes that are a particularly low percent of the roadway capacity during the peak commute hours. For example, the portion of Poinsettia Lane west of El Camino Real has been built to arterial standards in preparation for the gap closure, but has no more than one vehicle per minute traveling in either direction during the busiest hour.

Table B: Existing Peak-Hour Link Roadway LOS Summary

Roadway Segment	Direction	Lanes	Capacity at LOS D	AM Peak Hour			PM Peak Hour		
				Volume	V/C	LOS D or Better	Volume	V/C	LOS D or Better
Poinsettia Lane (Aviara Parkway to Ambrosia Lane)	Eastbound	2	1,700	385	0.22	Yes	460	0.26	Yes
	Westbound	2	1,700	350	0.20	Yes	445	0.25	Yes
Poinsettia Lane (Ambrosia Lane to Cassia Road)	Eastbound	2	1,700	514	0.29	Yes	397	0.22	Yes
	Westbound	2	1,700	422	0.24	Yes	463	0.26	Yes
Poinsettia Lane (Cassia Road to El Camino Real)	Eastbound	2	1,700	44	0.02	Yes	35	0.02	Yes
	Westbound	2	1,700	26	0.01	Yes	62	0.04	Yes
El Camino Real (Cassia Road to Poinsettia Lane)	Northbound	2	2,100	1,620	0.77	Yes	1,336	0.64	Yes
	Southbound	3	2,900	1,026	0.35	Yes	1,714	0.59	Yes
El Camino Real (Poinsettia Lane to Aviara Parkway)	Northbound	3	2,580	1,782	0.69	Yes	1,709	0.66	Yes
	Southbound	3	1,920	1,408	0.73	Yes	1,854	0.97	Yes
Cassia Road (Poinsettia Lane to El Camino Real)	Eastbound	2	1,540	515	0.33	Yes	356	0.23	Yes
	Westbound	2	1,540	331	0.21	Yes	456	0.30	Yes
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	Northbound	1	590	424	0.72	Yes	122	0.21	Yes
	Southbound	1	590	356	0.60	Yes	104	0.18	Yes
Mimosa Drive (Oriole Court to Aviara Parkway)	Northbound	1	590	34	0.06	Yes	28	0.05	Yes
	Southbound	1	590	60	0.10	Yes	35	0.06	Yes
Dove Lane (Moorhen Place to Black Skimmer Road)	Eastbound	1	590	22	0.04	Yes	19	0.03	Yes
	Westbound	1	590	8	0.01	Yes	23	0.04	Yes

LOS = level of service
V/C = volume-to-capacity

Vehicle Speed

For five of the roadway segments included in the study, traffic survey data included collection of vehicle speed for 2 days. Vehicle speed surveys are provided in Appendix A. Table C summarizes the existing traffic speeds observed on the survey days. Because the 85th percentile speed (the speed not exceeded by 85th percent of vehicles) is used to set the speed limit for a street, Table C provides the 85th percentile speed. Table C also indicates whether vehicles were observed excessively exceeding this typical speed. Below is a brief discussion of the speed observations for each surveyed roadway.

Table C: Existing Travel Speed

Roadway Segment	Posted Speed Limit	85th Percentile Speed	Observations Exceeding 85th Percentile by mph			
			10 mph	15 mph	20 mph	25 mph
Poinsettia Lane (Ambrosia Lane to Cassia Road)						
Day 1	50	33	4	0	0	0
Day 2		33	4	0	0	0
Cassia Road (Poinsettia Lane to El Camino Real)						
Day 1	35	29	30	16	5	0
Day 2		29	29	12	3	0
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)						
Day 1	40	33	5	0	0	0
Day 2		34	0	0	0	0
Mimosa Drive (Oriole Court to Aviara Parkway)						
Day 1	25	25	0	0	0	0
Day 2		25	0	0	0	0
Dove Lane (Moorhen Place to El Camino Real)						
Day 1	35	29	0	0	0	0
Day 2		30	0	0	0	0

mph = miles per hour

Poinsettia Lane between Ambrosia Lane and Cassia Road

The posted speed limit (west of Ambrosia Lane) is 50 miles per hour (mph). The observed 85th percentile speed was 33 mph. Of the 19,442 vehicles using this link over 2 days, eight were observed to exceed 45 mph. The highest speed vehicles were evenly spread between 6:00 a.m. and 9:00 p.m.

Cassia Road

The posted speed limit is 35 mph. The observed 85th percentile speed was 29 mph. However, of the 18,234 vehicles using this link over 2 days, 28 were observed to exceed 45 mph (of which 8 exceeded 50 mph). It should be noted that the 8 vehicles exceeding 50 mph were all traveling in the eastbound direction, which is downhill. The highest speed vehicles appear to be more common in the early evening hours.

Ambrosia Lane

While Ambrosia Lane is classified as a School Street in the Mobility Element, the speed limit of 25 mph is only in effect near the school when children are present. In the northern portion of Ambrosia Lane, where surveys were conducted, the posted speed limit is 40 mph. The observed 85th

percentile speed was 34 mph. Of the 6,609 vehicles using this link over 2 days, 5 were observed to exceed 45 mph, all of which were traveling in the southbound direction (downhill). These were evenly spread between 7:00 a.m. and 9:00 p.m.

Mimosa Drive

The posted speed limit is 25 mph. The observed 85th percentile speed was 25 mph, consistent with the prima facie speed limit of a residential street. Of the 1,344 vehicles observed over 2 days, 10 were observed exceeding 30 mph. No vehicles were observed exceeding 35 mph.

Dove Lane

The posted speed limit is 35 mph. The observed 85th percentile speed was 30 mph. Of the 721 vehicles observed over 2 days, 6 were observed exceeding 35 mph. No vehicles were observed exceeding 40 mph. This is consistent with the posted 35 mph speed limit signs.

Existing speed data for most of the surveyed roadways appear consistent with expectations based on posted speed limits and the prevailing speed of most vehicles. The exception is Cassia Road., which is the only surveyed roadway where vehicles were observed in excess of 5 mph over the posted speed limit on both surveyed days. Although a small percent of the total traffic volume, the presence of any vehicles traveling in excess of 20 mph faster than 85 percent of the other vehicles raises potential safety concerns. Strategies for addressing excessive speeding on Cassia Road will be discussed later in this report.

Intersection Volume

The independent survey company that collected roadway volume data also collected intersection turn-movement volumes at the 11 study intersections on Tuesday, May 22, 2018. Traffic volume data are provided in Appendix A. Figure 2 illustrates the existing turn volumes. These turning volumes were analyzed consistent with the Intersection Turning Movement Needs Assessment in the *City of Carlsbad Transportation Impact Analysis Guidelines.* Table D examines whether right-turn volumes meet the City's 150 vehicles per hour threshold for recommending a dedicated right-turn lane, whether left-turn volumes meet the City's 250 vehicles per hour threshold for recommending dual left-turn lanes, and whether the left-turn queue is anticipated to exceed the available turn pocket.

As Table D shows, right-turn volume at many of the intersections meets the threshold for recommending dedicated right-turn lanes. Four left-turn movements have single left-turn lanes but meet the threshold for recommending dual left-turn lanes. However, three of these movements could experience lower traffic volume with completion of the Poinsettia Lane gap closure. Six left-turn movements are estimated to have peak queues exceeding the turn pocket. Again, three of these movements may have lower traffic volume with completion of the Poinsettia Lane gap closure.

LSA

LEGEND

XX/YY - AM/PM Peak Hour Volumes

FIGURE 2

0 500 1000

FEET

SOURCE: Google Earth, 2018

Poinsettia Lane Gap Closure

Existing (2018) Peak Hour Traffic Volumes

I:\HCR1803\G\Existing Volumes.cdr (3/19/2019)

Table D: Intersection Turning Movement Needs Assessment

Intersection		Right-Turn Volume[1]	Existing Dedicated Right?[2]	Left-Turn Volume[1]	Existing Dual Left?[3]	Calculated Queue Length[1]	Left-Turn Storage
1. Ambrosia Lane/Poinsettia Lane (s)	NB	216	**No**	364	**No**	471	N/A
	SB	63	No	44	No	74	N/A
	EB	184	**No**	46	No	47	265
	WB	63	No	168	No	197	265
2. Ambrosia Lane/Aviara Parkway (s)	NB	13	No	10	No	178	N/A
	SB	158	**No**	210	No	504	N/A
	EB	29	No[4]	268	**No**	386	**130**
	WB	256	**No[4]**	49	No	48	125
3. Poinsettia Lane/Cassia Road (u)	NB	0	No	0	No	-	N/A
	SB	0	No	495	**No**	-	**160**
	WB	444	**No**	0	No	-	N/A
4. Skimmer Court/Poinsettia Lane/ Oriole Court (u)	NB	27	No	0	No	3	N/A
	SB	0	No	6	No	2	N/A
	EB	0	No	0	No	0	N/A
	WB	13	Yes	39	No	2	300
5. Mimosa Drive/Moorhen Place (u)	NB	9	No	0	No	0	N/A
	SB	0	No	7	No	0	N/A
	WB	5	No	10	No	0	N/A
6. Dove Lane/Moorhen Place (u)	NB	4	No	9	No	3	N/A
	EB	16	No	0	No	0	N/A
	WB	0	No	6	No	0	N/A
7. Mimosa Drive/Aviara Parkway (s)	NB	42	No	28	No	34	N/A
	SB	69	No	16	No	28	N/A
	EB	23	No[4]	26	No	24	135
	WB	24	No	65	No	46	195
8. El Camino Real/Cassia Road (s)	NB	14	Yes	198	No	229	250
	SB	404	**No[4]**	15	No	24	260
	EB	187	**No**	418	**No**	538	**270**
	WB	19	No	17	No	39	100
9. El Camino Real/Poinsettia Lane (s)	NB	492	Yes	23	Yes	15	250
	SB	14	No	243	Yes	98	250
	EB	5	No	17	Yes	12	315
	WB	234	**No**	438	Yes	187	380
10. El Camino Real/Dove Lane (s)	NB	56	No[4]	90	No	101	190
	SB	225	**No[4]**	87	No	120	235
	EB	79	No	156	No	252	**60**
	WB	69	No	72	No	105	**80**
11. El Camino Real/Aviara Parkway (s)	NB	536	**No**	450	Yes	239	265
	SB	131	No	191	Yes	148	310
	EB	330	Yes	178	Yes	114	150
	WB	103	No	664	Yes	409	**200**

Note: Shaded cells do not meet guidelines.

[1] Higher volume of either a.m. or p.m. peak hour

[2] *City of Carlsbad Transportation Impact Analysis Guidelines* state that a dedicated right-turn lane is recommended when volume exceeds 150.

[3] *City of Carlsbad Transportation Impact Analysis Guidelines* state that dual left-turn lanes are recommended when volume exceeds 250.

[4] Dashed bicycle lane provides for a lane width of at least 19 feet indicating vehicles may treat this as a right-turn lane.

(s) = signalized intersection N/A = not applicable WB = westbound
(u) = unsignalized intersection NB = northbound
EB = eastbound SB = southbound

Intersection Performance

The traffic volumes illustrated on Figure 2 were analyzed using both the ICU and HCM methodologies at signalized intersections. Only the HCM methodology applies at unsignalized intersections. Table E presents the results of the intersection performance analysis. Analysis worksheets are provided in Appendix B.

Table E: Existing Intersection LOS Summary

Study Area No.	Intersection	Methodology	AM Peak Hour		PM Peak Hour	
			V/C Ratio or Delay	LOS	V/C Ratio or Delay	LOS
1	Ambrosia Lane/Poinsettia Lane	ICU	0.68	B	0.36	A
		HCM	27.7 sec	D	13.3 sec	B
2	Ambrosia Lane/Aviara Parkway	ICU	0.72	C	0.35	A
		HCM	**75.8 sec**	**E**	13.2 sec	B
3	Poinsettia Lane/Cassia Road (u)	HCM	0.0 sec	A	0.0 sec	A
4	Oriole Court-Skimmer Court/ Poinsettia Lane (u)	HCM	7.9 sec	A	6.7 sec	A
5	Mimosa Drive/Moorhen Place (u)	HCM	8.9 sec	A	8.7 sec	A
6	Dove Lane/Moorhen Place (u)	HCM	8.7 sec	A	8.6 sec	A
7	Mimosa Drive/Aviara Parkway	ICU	0.30	A	0.34	A
		HCM	9.3 sec	A	9.3 sec	A
8	El Camino Real/Cassia Road	ICU	0.76	C	0.77	C
		HCM	34.4 sec	C	34.5 sec	C
9	El Camino Real/Poinsettia Lane	ICU	0.52	A	0.53	A
		HCM	24.1 sec	C	20.7 sec	C
10	El Camino Real/Dove Lane	ICU	0.48	A	0.57	A
		HCM	17.3 sec	B	33.6 sec	C
11	El Camino Real/Aviara Parkway	ICU	0.78	C	0.72	C
		HCM	50.1 sec	D	45.9 sec	D

Note = Shaded cells exceed LOS D.
(u) = unsignalized intersection
HCM = Highway Capacity Manual
ICU = Intersection Capacity Utilization
LOS = level of service
sec = seconds
V/C = volume-to-capacity

Table E shows that most of the study intersections deliver a satisfactory LOS. Although, as shown in Table D, some individual movements may experience delay and queueing, overall the intersections are capable of accommodating the peak hour traffic volume. The exception is the intersection of Ambrosia Lane/Aviara Parkway in the a.m. peak hour. This intersection is used to access both Aviara Oaks Elementary School and Aviara Oaks Middle School. As such, traffic volume during the morning drop-off period is high and places strains on the intersection during the brief duration of school traffic.

Multi-Modal Level of Service

As described in the methodology section, the City's Mobility Element identifies different travel modes that should be accommodated by different street types. Existing physical conditions were entered into the City's multi-modal level of service (MMLOS) worksheets for each of the study roadways. Table F displays the resulting MMLOS for the modes applicable for each roadway

Table F: Existing Multi-Modal LOS Summary

Roadway Segment	Street Typology	LOS for Accommodated Modes			
		Vehicle	Pedestrian	Bicycle	Transit
Poinsettia Lane (Aviara Parkway to Ambrosia Lane)	Arterial Connector	A	A	B	
Poinsettia Lane (Ambrosia Lane to Cassia Road)	Arterial Connector	A	A	A	
Poinsettia Lane (Cassia Road to El Camino Real)	Arterial Connector	A	A	B	
El Camino Real (Cassia Road to Poinsettia Lane)	Arterial Street	C			C
El Camino Real (Poinsettia Lane to Aviara Parkway)	Arterial Street	C			C
Cassia Road (Poinsettia Lane to El Camino Real)	Neighborhood/ Local Street		A	A	
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	School Street		A	C	
Mimosa Drive (Oriole Court to Aviara Parkway)	Neighborhood/ Local Street		A	A	
Dove Lane (Moorhen Place to Black Skimmer Road)	Neighborhood/ Local Street		A	A	

LOS = level of service

segment. MMLOS worksheets are included in Appendix C. As Table F shows, all of the study roadway segments achieve the City's LOS D or better target for their accommodated travel modes.

Collision Locations

The City Public Works Department/Traffic & Mobility Division provided collision data for Poinsettia Lane, Cassia Road, El Camino Real, Ambrosia Lane, Dove Lane, and Mimosa Drive. These collision data were provided over a period of 10 years from January 1, 2008, to April 12, 2018. Figure 3 displays the locations of collisions in the study area over the last 10 years. As expected, collisions are clustered near intersections. Table G summarizes the collisions reported to the Carlsbad Police Department in the study area in the past 10 years. It should be noted that over half of the collisions in the study area occurred along El Camino Real (131 of 204). Of the 204 reported collisions, the most common (40 percent of the total) have been rear-end collisions. The second most common are broadside collisions (27 percent) followed by hit objects (15 percent). A total of four collisions involving pedestrians have been reported in the study area over the past 10 years.

Statements regarding the frequency of broadside and hit objects collisions may be a little misleading because of the concentrations of this type of collision at specific intersections. In total, 28 percent of the broadside collisions occur at the intersection of El Camino Real/Cassia Road where that type of collision represents over half of the total collisions. In total, 40 percent of hit object collisions occur at the intersection of Poinsettia Lane/Cassia Road where that type of collision represents two thirds of the total collisions. At both of these locations, the Poinsettia Lane gap closure has the potential to alter traffic volumes and patterns, potentially affecting the number and types of collisions. The Poinsettia Lane gap closure will construct a traffic signal at the intersection of Poinsettia Lane/Cassia Road, which is likely to reduce the number of vehicles hitting objects at the intersection as it was recently configured.

LSA

LEGEND

Type of Collision:

- Rear-End
- Sideswipe
- Hit-Object
- Other
- Broadside
- Pedestrian
- Overturned
- Head-On
- Not Stated

Crash Factor:

- Unsafe Speed
- Wrong Side of Road
- Unsafe Starting & Backing
- Improper Turning
- D.U.I.
- Other Than Driver
- Unknown
- Unsafe Lane Change
- Other Hazardous Movement
- Auto/Ped R/W Violation
- Following Too Closely
- Traffic Signal and Signs

0 500 1000

FEET

SOURCE: Google Earth, 2018

FIGURE 3

Poinsettia Lane Gap Closure

Collision Data (1/1/2008 to 4/12/2018)

I:\HCR1803\G\Collision_Data_Map_v2.cdr (3/14/2019)

Table G: Collison Data 2008–2018

Location	Rear End	Sideswipe	Broadside	Head On	Hit Object	Overturned	Pedestrian	Other	Total
Aviara Pkwy/ Poinsettia Ln	8	2	6	1	-	1	-	-	18
Black Rail Ct/ Poinsettia Ln	-	1	5	1	-	-	-	-	7
Ambrosia Ln/ Poinsettia Ln	2	-	-	-	-	1	-	-	3
Poinsettia Ln/ Cassia Rd	-	-	1	-	12	1	-	4	18
El Camino Real/ Cassia Rd	7	-	15	2	-	2	1	-	27
El Camino Real/ Poinsettia Ln	13	3	11	1	4	-	-	-	32
El Camino Real/ Swallow Ln	8	-	-	-	2	-	-	-	10
El Camino Real/ Dove Ln	11	2	4	-	3	-	-	1	21
El Camino Real/ Aviara Pkwy	15	1	9	1	1	-	2	-	29
Ambrosia Ln / Aviara Pkwy	1	-	-	-	1	-	-	-	2
Mimosa Dr/ Aviara Pkwy	-	-	2	1	-	-	-	-	3
Along Poinsettia	1	-	-	-	2	-	-	-	3
Along Cassia	2	-	1	-	1	-	1	1	6
Along El Camino Real	11	1	-	-	-	-	-	-	12
Along Ambrosia	3	4	-	-	4	-	-	1	12
Along Mimosa Dr	-	-	-	-	-	1	-	-	1
Total	**80**	**14**	**54**	**7**	**30**	**6**	**4**	**7**	**204**
Percent	**40%**	**7%**	**27%**	**3%**	**15%**	**3%**	**2%**	**3%**	**100%**

Of note in the data is that only one reported collision occurred within the Viadana and Pavoreal neighborhoods. On a Saturday morning in March 2015, a vehicle traveling north on Mimosa Drive hit two parked vehicles and overturned. The police report indicates that the driver was under the influence of drugs or alcohol.

The frequency of rear-end collisions at the southbound approach to El Camino Real/Poinsettia Lane was also examined. Two collisions of this type occurred in 2008, two in 2009, and one in 2011. From the collision data, it does not appear that rear-end collisions have increased since the southbound right-turn lane was converted to a through/right-turn lane.

VEHICLE MILES TRAVELED

On December 28, 2018, the California Office of Administrative Law cleared revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines was the removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled. Lead agencies are allowed to opt-in to the revised transportation guidelines, but the new guidelines must be used starting July 1, 2020.

As discussed above, the *City of Carlsbad Transportation Impact Analysis Guidelines* has eliminated vehicle delay from consideration, but the City has not yet established thresholds related to vehicle miles of travel. However, the State law provides sufficient guidance to evaluate the Poinsettia Lane gap closure impacts related to vehicles miles traveled.

California Public Resources Code Section 15064.3(b)(2) states that:

> Transportation projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

LSA measured the travel distances associated with the alternative paths used to divert around the gap in Poinsettia Lane. To travel from the intersection of Aviara Parkway/Poinsettia Lane to the intersection of El Camino Real/Poinsettia Lane using existing Poinsettia Lane, Cassia Road, and El Camino Real requires 1.9 miles of travel. To travel from the intersection of Aviara Parkway/ Poinsettia Lane to the intersection of El Camino Real/Poinsettia Lane using Aviara Parkway and El Camino Real requires 2.7 miles of travel. Upon completion of Poinsettia Lane, the distance required is 1.7 miles.

For each vehicle taking a diverted route today, completion of the Poinsettia Lane gap closure results in 0.2 to 1.0 fewer miles traveled. Because the Poinsettia Lane gap closure decreases vehicle miles traveled in the project area compared to existing conditions, the project would be presumed to have a less than significant transportation impact under the revised CEQA guidelines.

GENERAL PLAN BUILDOUT (2035) TRAFFIC CONDITIONS WITHOUT POINSETTIA LANE GAP CLOSURE

The San Diego Association of Governments (SANDAG) Transportation Forecast Information Center provides traffic forecast data using the regional travel demand model. Traffic projections using the Series 12 (land use based) model were compared between 2008 (without the gap closure), 2020 (with the gap closure), and 2035 (with the gap closure) to determine an annual traffic growth rate in the study area and the effect of the gap closure. Table H provides the raw traffic model data and calculations of annual growth rate.

Table H: Traffic Model Data and Traffic Growth Rates

Roadway Segment	2020 Model Projection (1,000s)	2035 Model Projection (1,000s)	Annual Growth Rate	Existing (2018) Traffic Volume	Projected 2035 No Gap Closure Volume
Poinsettia Lane (Aviara Parkway to Ambrosia Lane)	8.5	9.7	0.9%	10,330	11,983
Poinsettia Lane (Ambrosia Lane to Cassia Road)	4.6	5.8	1.7%	9,789	12,683
Poinsettia Lane (Cassia Road to El Camino Real)	5.1	6.2	1.4%	851	1,059
El Camino Real (Cassia Road to Poinsettia Lane)	31.2	33.8	0.6%	33,236	36,375
El Camino Real (Poinsettia Lane to Aviara Parkway)	34.0	39.5	1.1%	38,647	45,732
Cassia Road (Poinsettia Lane to El Camino Real)	6.1	6.8	0.8%	9,290	10,498
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	2.4	2.7	0.8%	3,321	3,791
Mimosa Drive (Oriole Court to Aviara Parkway)	1.3	1.6	1.5%	679	857
Dove Lane (Moorhen Place to Black Skimmer Road)	2.4	3.5	3.1%	368	559

Roadway Volume

Model data in 2020 and 2035 were compared for each roadway segment to determine the annual growth rate. This annual growth rate was applied to existing traffic volumes collected in 2018 to estimate 2035 traffic volumes without the Poinsettia Lane gap closure (i.e., 2018 volume x [1 + annual growth rate x 17 years]). Table I analyzes the resulting 2035 roadway traffic volume.

Table I: General Plan Buildout (2035) Without Poinsettia Lane Gap Closure Daily Roadway Volume and Capacity

Roadway Segment	Lanes	Capacity at LOS D	2035 No Gap Closure Volume	V/C	LOS D or Better
Poinsettia Lane (Aviara Parkway to Ambrosia Lane)	4	39,200	11,983	0.31	Yes
Poinsettia Lane (Ambrosia Lane to Cassia Road)	4	39,200	12,683	0.32	Yes
Poinsettia Lane (Cassia Road to El Camino Real)	4	39,200	1,059	0.03	Yes
El Camino Real (Cassia Road to Poinsettia Lane)	5	54,100	36,375	0.67	Yes
El Camino Real (Poinsettia Lane to Aviara Parkway)	6	54,100	45,732	0.85	Yes
Cassia Road (Poinsettia Lane to El Camino Real)	4	32,200	10,498	0.33	Yes
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	2	13,700	3,791	0.28	Yes
Mimosa Drive (Oriole Court to Aviara Parkway)	2	13,700	857	0.06	Yes
Dove Lane (Moorhen Place to Black Skimmer Road)	2	13,700	559	0.04	Yes

LOS = level of service
V/C = volume-to-capacity

As Table I shows, the roadway segments of Poinsettia Lane west of El Camino Real, Mimosa Drive between Oriole Court and Aviara Parkway, and Dove Lane between Moorhen Place and El Camino Real would still have traffic volumes that are a particularly low percent of the roadway capacity in 2035 without the proposed Poinsettia Lane gap closure.

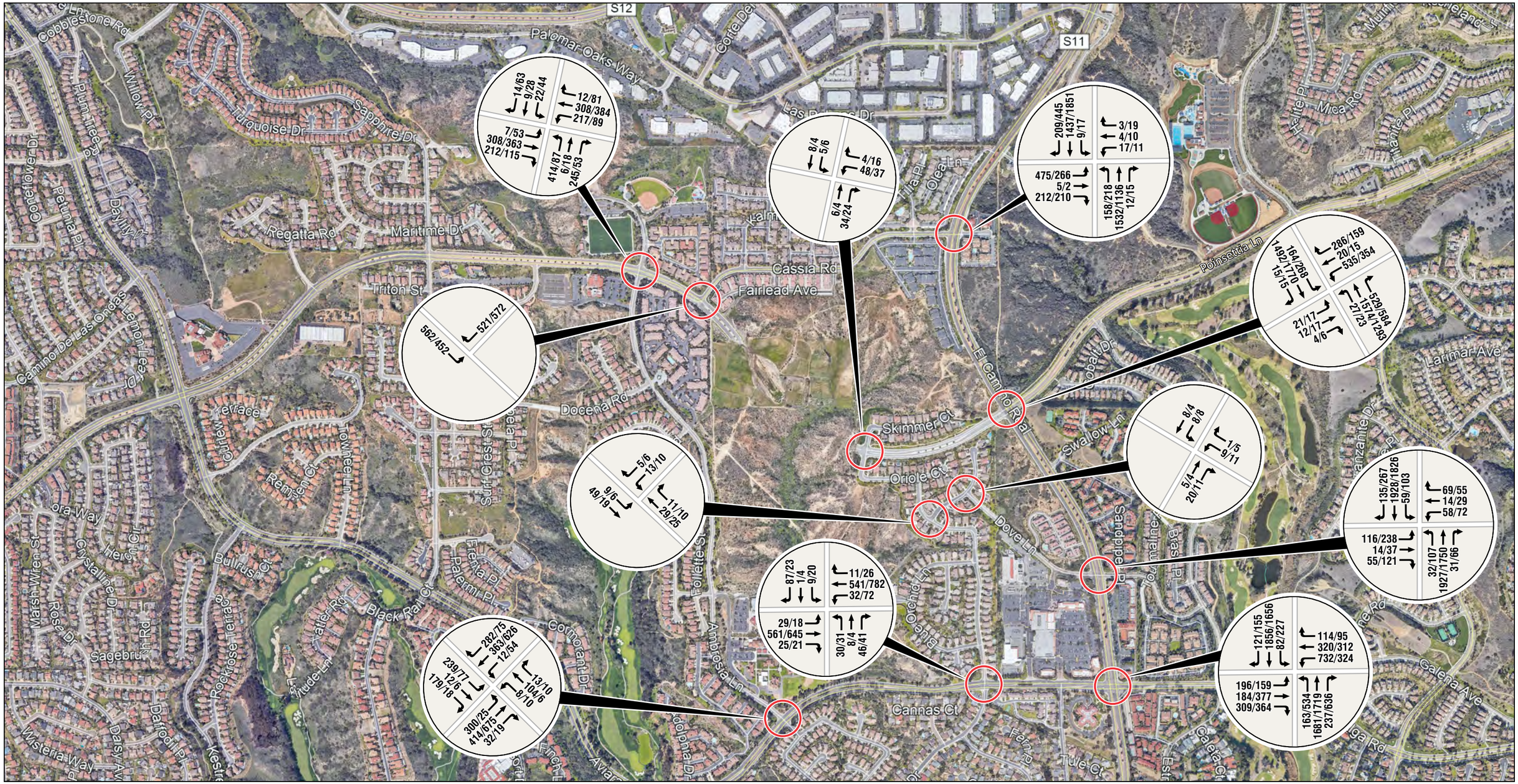
Intersection Volume

Annual growth rates calculated in Table H for roadway segments were applied to the corresponding approach for the study intersections. Figure 4 illustrates the resulting projected intersection turn volumes in 2035 without the Poinsettia Lane gap closure. These turning volumes were analyzed consistent with the Intersection Turning Movement Needs Assessment in the *City of Carlsbad Transportation Impact Analysis Guidelines*. Table J examines whether right-turn volumes meet the City's 150 vehicles per hour threshold for recommending a dedicated right-turn lane, whether left-turn volumes meet the City's 250 vehicles per hour threshold for recommending dual left-turn lanes, and whether the left-turn queue is anticipated to exceed the available turn pocket.

As Table J shows, right-turn volume at many of the intersections meets the threshold for recommending dedicated right-turn lanes. Compared to existing conditions, one additional movement (southbound right turns at El Camino Real/Aviara Parkway) would meet the City's criteria for a dedicated right-turn lane. Four left-turn movements have single left-turn lanes but meet the threshold for recommending dual left-turn lanes, which is the same as existing conditions.

Intersection Performance

The traffic volumes illustrated on Figure 4 were analyzed using both the ICU and HCM methodologies at signalized intersections. Only the HCM methodology applies at unsignalized intersections. Table K presents the results of the intersection performance analysis. Analysis worksheets are provided in Appendix D.



LSA

LEGEND

XX/YY - AM/PM Peak Hour Volumes

0 500 1000
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SOURCE: Google Earth, 2018

I:\HCR1803\G\2035-No Gap Closure Volumes.cdr (3/14/2019)

FIGURE 4

Poinsettia Lane Gap Closure
General Plan Buildout (2035)
Without Poinsettia Lane Gap Closure
Peak Hour Traffic Volumes

Table J: 2035 Without Poinsettia Lane Gap Closure Intersection Turning Movement Needs Assessment

Intersection		Right Turn Volume[1]	Existing Dedicated Right?[2]	Left Turn Volume[1]	Existing Dual Left?[3]	Calculated Queue Length[1]	Left Turn Storage
1. Ambrosia Lane/Poinsettia Lane (s)	NB	245	**No**	414	**No**	594	N/A
	SB	63	No	44	No	50	N/A
	EB	212	**No**	46	No	42	265
	WB	81	No	168	No	260	265
2. Ambrosia Lane/Aviara Parkway (s)	NB	13	No	10	No	137	N/A
	SB	179	**No**	239	No	516	N/A
	EB	32	No[4]	300	**No**	392	**130**
	WB	282	**No[4]**	54	No	51	125
3. Poinsettia Lane/Cassia Road (u)	NB	0	No	0	No	-	N/A
	SB	0	No	562	**No**	-	**160**
	WB	572	**No**	0	No	-	N/A
4. Skimmer Court/Poinsettia Lane/Oriole Court (u)	NB	34	No	0	No	3	N/A
	SB	0	No	6	No	1	N/A
	EB	0	No	0	No	0	N/A
	WB	16	Yes	48	No	2	300
5. Mimosa Drive/Moorhen Place (u)	NB	11	No	0	No	3	N/A
	SB	0	No	14	No	0	N/A
	WB	6	No	13	No	0	N/A
6. Dove Lane/Moorhen Place (u)	NB	5	No	11	No	3	N/A
	EB	20	No	0	No	0	N/A
	WB	0	No	8	No	0	N/A
7. Mimosa Drive/Aviara Parkway(s)	NB	46	No	31	No	36	N/A
	SB	87	No	20	No	30	N/A
	EB	29	No[4]	25	No	26	135
	WB	26	No	72	No	49	195
8. El Camino Real/Cassia Road(s)	NB	15	Yes	218	No	492	**250**
	SB	445	**No[4]**	17	No	40	260
	EB	212	**No**	475	**No**	600	**270**
	WB	19	No	17	No	41	100
9. El Camino Real/Poinsettia Lane(s)	NB	584	Yes	27	Yes	21	250
	SB	15	No	268	Yes	119	250
	EB	6	No	21	Yes	18	315
	WB	286	**No**	535	Yes	218	380
10. El Camino Real/Dove Lane(s)	NB	66	No[4]	107	No	122	190
	SB	267	**No[4]**	103	No	166	235
	EB	121	No	238	No	428	**60**
	WB	69	No	72	No	125	**80**
11. El Camino Real/Aviara Parkway(s)	NB	636	**No**	534	Yes	409	**265**
	SB	155	**No**	227	Yes	201	310
	EB	364	Yes	196	Yes	120	150
	WB	114	No	732	Yes	516	**200**

Note: Shaded cells do not meet guidelines

1 Higher volume of either a.m. or p.m. peak hour

2 *City of Carlsbad Transportation Impact Analysis Guidelines* state that a dedicated right-turn lane is recommended when volume exceeds 150.

3 *City of Carlsbad Transportation Impact Analysis Guidelines* state that dual left-turn lanes are recommended when volume exceeds 250.

4 Dashed bicycle lane provides for a lane width of at least 19 feet indicating vehicles may treat this as a right-turn lane.

(s) = signalized intersection N/A = not applicable WB = westbound
(u) = unsignalized intersection NB = northbound
EB = eastbound SB = southbound

Table K: 2035 Without Poinsettia Lane Gap Closure Intersection LOS

Study Area No.	Intersection	Methodology	AM Peak Hour		PM Peak Hour	
			V/C Ratio or Delay	LOS	V/C Ratio or Delay	LOS
1	Ambrosia Lane/Poinsettia Lane	ICU	0.78	C	0.39	A
		HCM	43.4 sec	D	12.5 sec	B
2	Ambrosia Lane/Aviara Parkway	ICU	0.79	C	0.38	A
		HCM	**124.5 sec**	**F**	13.7 sec	B
3	Poinsettia Lane/Cassia Road (u)	HCM	0.0 sec	A	0.0 sec	A
4	Oriole Court-Skimmer Court/Poinsettia Lane (u)	HCM	7.9 sec	B	6.6 sec	A
5	Mimosa Drive/Moorhen Place (u)	HCM	9.0 sec	A	8.8 sec	A
6	Dove Lane/Moorhen Place (u)	HCM	8.7 sec	A	8.6 sec	A
7	Mimosa Drive/Aviara Parkway	ICU	0.33	A	0.37	A
		HCM	10.0 sec	A	10.1 sec	B
8	El Camino Real/Cassia Road	ICU	0.84	D	0.85	D
		HCM	43.8 sec	D	50.4 sec	D
9	El Camino Real/Poinsettia Lane	ICU	0.61	B	0.62	B
		HCM	27.1 sec	C	24.1 sec	C
10	El Camino Real/Dove Lane	ICU	0.57	A	0.70	C
		HCM	30.0 sec	C	44.8 sec	D
11	El Camino Real/Aviara Parkway	ICU	0.88	D	0.83	D
		HCM	**70.2 sec**	**E**	**60.7 sec**	**E**

Note: Shaded cells exceed LOS D.
(u) = unsignalized intersection
HCM = Highway Capacity Manual
ICU = intersection capacity utilization
LOS = level of service
sec = seconds
V/C = volume-to-capacity

Table K shows that most of the study intersections are anticipated to continue to deliver a satisfactory LOS. Although, as shown in Table J, some individual movements may experience delay and queueing, overall the intersections are capable of accommodating the peak hour traffic volume. The intersection of Ambrosia Lane/Aviara Parkway would continue to be impacted by school traffic in the a.m. peak hour. The intersection of El Camino Real/Aviara Parkway is anticipated to degrade with increased traffic volumes in the future.

GENERAL PLAN BUILDOUT (2035) TRAFFIC CONDITIONS WITH POINSETTIA LANE GAP CLOSURE

Comparisons between traffic projections using the SANDAG Series 12 (land use based) model were again used to project traffic conditions with the Poinsettia Lane gap closure. The annual growth rate calculated in Table H was applied to 2008 (without the gap closure) model data to determine the potential model data in the future without the Poinsettia Lane gap closure. These potential model data were compared to the model predicted traffic data in the same future year to identify the redistribution of traffic calculated by the traffic model. These calculations are shown in Table L.

Table L: Traffic Model Data and Traffic Growth Rates

Roadway Segment	2008 Model Projection (1,000s)	Annual Growth Rate	2020 Volume Based on Growth	2020 Model Projection (1,000s)	Effect of Gap Closure	
Poinsettia Lane (Aviara Parkway to Ambrosia Lane)	8.8	0.9%	9.8	8.5	(1.3)	(13.2%)
Poinsettia Lane (Ambrosia Lane to Cassia Road)	4.8	1.7%	5.8	4.6	(1.2)	(20.7%)
Poinsettia Lane (Cassia Road to El Camino Real)	1.6	1.4%	1.9	5.1	3.2	171.8%
El Camino Real (Cassia Road to Poinsettia Lane)	28.9	0.6%	30.8	31.2	0.4	1.2%
El Camino Real (Poinsettia Lane to Aviara Parkway)	28.7	1.1%	32.4	34.0	1.6	4.9%
Cassia Road (Poinsettia Lane to El Camino Real)	7.8	0.8%	8.5	6.1	(2.4)	(28.4%)
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	2.5	0.8%	2.8	2.4	(0.4)	(12.7%)
Mimosa Drive (Oriole Court to Aviara Parkway)	1.8	1.5%	2.1	1.3	(0.8)	(39.0%)
Dove Lane (Moorhen Place to Black Skimmer Road)	1.6	3.1%	2.2	2.4	0.2	9.8%

As Table L shows, the traffic model predicts that the completion of the Poinsettia Lane gap closure would reduce traffic volumes on Cassia Road (28.4 percent lower) and Ambrosia Lane (12.7 percent lower) as using these routes around the existing gap will no longer be necessary. The traffic model similarly predicts that the Poinsettia Lane gap closure will reduce daily traffic volume along Mimosa Drive (specifically, south of Moorhen Place) possibly because access to Poinsettia Lane would have greater utility. The traffic model also predicts that traffic volumes along Dove Lane would increase by 9.8 percent, which is likely to mean that traffic volumes along Moorhen Place and Oriole Court would also increase. This could be due to either redistribution of neighborhood traffic or cut-through traffic. Although not included in Table L, the same exercise was conducted for Aviara Parkway. The traffic model predicts that the Poinsettia Lane gap closure would redistribute approximately 10 percent of traffic along Aviara Parkway.

Roadway Volume

The percent of change in traffic volume with the gap closure calculated in Table L was applied to the projected 2035 traffic volumes without the gap closure previously described in the report. For the segment of Dove Lane where traffic volumes are projected to increase, 55 additional daily trips are anticipated, which equates to 5 additional vehicles during a peak hour or 1 additional car every 12 minutes.

In the case of the segment of Poinsettia Lane between Cassia Road and El Camino Real, traffic volumes were smoothed by applying the ratio of model data provided for the segments of Poinsettia Lane between Cassia Road and El Camino Real and Poinsettia Lane between Ambrosia Lane and Cassia Road. In other words, because the model predicted that the segment between Cassia Road and El Camino Real would have a higher traffic volume, this relationship was maintained when projecting future traffic volumes. Table M analyzes the resulting 2035 roadway traffic volume.

Intersection Volume

The effect of the gap closure identified in Table L was applied to the 2035 intersection turn volumes displayed on Figure 4. For intersections immediately adjacent to the gap closure, turning movements were directly shifted to account for new and potentially shorter travel paths.

Table M: General Plan Buildout (2035) Daily Roadway Volume and Capacity

Roadway Segment	Lanes	Capacity at LOS D	2035 With Gap Closure Volume	V/C	LOS D or Better
Poinsettia Lane (Aviara Parkway to Ambrosia Lane)	4	39,200	10,400	0.27	Yes
Poinsettia Lane (Ambrosia Lane to Cassia Road)	4	39,200	10,056	0.26	Yes
Poinsettia Lane (Cassia Road to El Camino Real)	4	39,200	10,750	0.27	Yes
El Camino Real (Cassia Road to Poinsettia Lane)	5	54,100	36,815	0.68	Yes
El Camino Real (Poinsettia Lane to Aviara Parkway)	6	54,100	47,970	0.89	Yes
Cassia Road (Poinsettia Lane to El Camino Real)	4	32,200	7,520	0.23	Yes
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	2	13,700	3,309	0.24	Yes
Mimosa Drive (Oriole Court to Aviara Parkway)	2	13,700	522	0.04	Yes
Dove Lane (Moorhen Place to Black Skimmer Road)	2	13,700	614	0.04	Yes

LOS = level of service
V/C = volume-to-capacity

Figure 5 illustrates the resulting projected intersection turn volumes in 2035 with the Poinsettia Lane gap closure. These turning volumes were analyzed consistent with the Intersection Turning Movement Needs Assessment in the *City of Carlsbad Transportation Impact Analysis Guidelines*. Table N examines whether right-turn volumes meet the City's 150 vehicles per hour threshold for recommending a dedicated right-turn lane, whether left-turn volumes meet the City's 250 vehicles per hour threshold for recommending dual left-turn lanes, and whether the left-turn queue is anticipated to exceed the available turn pocket.

As Table N shows, right-turn volume at many of the intersections meets the threshold for recommending dedicated right-turn lanes. One of the movements where a right-turn lane would be recommended is southbound El Camino Real at Poinsettia Lane. Compared to without the gap closure, two fewer right-turn lanes would be deficient by this measure. Two left-turn movements have single left-turn lanes but meet the threshold for recommending dual left-turn lanes, which is two fewer than without the gap closure. More intersections comply with the City's turning-movement needs assessment with the Poinsettia Lane gap closure.

Intersection Performance

The traffic volumes illustrated on Figure 5 were analyzed using both the ICU and HCM methodologies at signalized intersections. Only the HCM methodology applies at unsignalized intersections. Table O presents the results of the intersection performance analysis. Analysis worksheets are provided in Appendix E.

As described in detail in the following section, concurrent with construction of the Poinsettia Lane gap closure, traffic signals would be constructed at the currently unsignalized intersections of Poinsettia Lane/Cassia Road and Oriole Court-Skimmer Court/Poinsettia Lane. The analysis presented in Table O reflects the future traffic signals at these locations.

LSA

LEGEND

XX/YY - AM/PM Peak Hour Volumes

0 500 1000
FEET

SOURCE: Google Earth, 2018

I:\HCR1803\G\2035-With Gap Closure Volumes.cdr (3/19/2019)

FIGURE 5

Poinsettia Lane Gap Closure

General Plan Buildout (2035)
With Poinsettia Lane Gap Closure
Peak Hour Traffic Volumes

Table N: 2035 With Poinsettia Lane Gap Closure Intersection Turning Movement Needs Assessment

Intersection		Right Turn Volume[1]	Existing Dedicated Right?[2]	Left Turn Volume[1]	Existing Dual Left?[3]	Calculated Queue Length[1]	Left Turn Storage
1. Ambrosia Lane/Poinsettia Lane (s)	NB	214	**No**	414	**No**	477	N/A
	SB	63	No	44	No	58	N/A
	EB	184	**No**	46	No	54	265
	WB	64	No	168	No	188	265
2. Ambrosia Lane/Aviara Parkway (s)	NB	13	No	10	No	174	N/A
	SB	156	**No**	239	No	483	N/A
	EB	28	No[4]	300	**No**	366	**130**
	WB	245	**No[4]**	54	No	59	125
3. Poinsettia Lane/Cassia Road (u)	NB	15	No	0	No	95	N/A
	SB	0	No	197	No	108	160
	WB	222	**No**	20	No	56	N/A
4. Skimmer Court/Poinsettia Lane/ Oriole Court (u)	NB	41	No	34	No	34	N/A
	SB	6	No	6	No	11	N/A
	EB	20	No	8	No	11	50
	WB	8	Yes	39	No	26	300
5. Mimosa Drive/Moorhen Place (u)	NB	7	No	0	No	0	N/A
	SB	0	No	20	No	0	N/A
	WB	4	No	8	No	0	N/A
6. Dove Lane/Moorhen Place (u)	NB	5	No	12	No	3	N/A
	EB	22	No	0	No	0	N/A
	WB	0	No	9	No	0	N/A
7. Mimosa Drive/Aviara Parkway (s)	NB	46	No	31	No	37	N/A
	SB	53	No	12	No	23	N/A
	EB	22	No[4]	25	No	23	135
	WB	23	No	62	No	44	195
8. El Camino Real/Cassia Road (s)	NB	15	Yes	40	No	69	250
	SB	112	No[4]	17	No	35	260
	EB	38	No	85	No	68	270
	WB	19	No	17	No	25	100
9. El Camino Real/Poinsettia Lane (s)	NB	592	Yes	221	Yes	151	250
	SB	364	**No**	271	Yes	136	250
	EB	114	No	255	Yes	80	315
	WB	286	**No**	519	Yes	201	380
10. El Camino Real/Dove Lane (s)	NB	69	No[4]	112	No	185	190
	SB	280	**No[4]**	108	No	178	235
	EB	122	No	241	No	320	**60**
	WB	69	No	72	No	107	**80**
11. El Camino Real/Aviara Parkway (s)	NB	667	**No**	464	Yes	317	**265**
	SB	135	No	238	Yes	220	310
	EB	316	Yes	170	Yes	130	150
	WB	99	No	635	Yes	472	**200**

Note: Shaded cells do not meet guidelines.

[1] Higher volume of either a.m. or p.m. peak hour

[2] *City of Carlsbad Transportation Impact Analysis Guidelines* state that a dedicated right-turn lane is recommended when volume exceeds 150.

[3] *City of Carlsbad Transportation Impact Analysis Guidelines* state that dual left-turn lanes are recommended when volume exceeds 250.

[4] Dashed bicycle lane provides for a lane width of at least 19 feet indicating vehicles may treat this as a right-turn lane.

(s) = signalized intersection
(u) = unsignalized intersection
EB = eastbound
N/A = not applicable
NB = northbound
SB = southbound
WB = westbound

Table O: 2035 With Poinsettia Lane Gap Closure Intersection LOS

Study Area No.	Intersection	Methodology	AM Peak Hour		PM Peak Hour	
			V/C Ratio or Delay	LOS	V/C Ratio or Delay	LOS
1	Ambrosia Lane/Poinsettia Lane	ICU	0.68	B	0.36	A
		HCM	27.7 sec	C	23.8 sec	C
2	Ambrosia Lane/Aviara Parkway	ICU	0.70	B	0.34	A
		HCM	**70.4 sec**	**E**	13.7 sec	B
3	Poinsettia Lane/Cassia Road (u)	ICU	0.44	A	0.40	A
		HCM	10.5 sec	B	26.8 sec	C
4	Oriole Court-Skimmer Court/Poinsettia Lane (u)	ICU	0.26	A	0.27	A
		HCM	8.9 sec	A	8.8 sec	A
5	Mimosa Drive/Moorhen Place (u)	HCM	9.2 sec	A	8.8 sec	A
6	Dove Lane/Moorhen Place (u)	HCM	8.8 sec	A	8.7 sec	A
7	Mimosa Drive/Aviara Parkway	ICU	0.28	A	0.33	A
		HCM	9.2 sec	A	9.3 sec	A
8	El Camino Real/Cassia Road	ICU	0.60	A	0.61	B
		HCM	12.5 sec	B	13.5 sec	B
9	El Camino Real/Poinsettia Lane	ICU	0.72	C	0.74	C
		HCM	40.3 sec	D	35.7 sec	D
10	El Camino Real/Dove Lane	ICU	0.60	A	0.73	C
		HCM	24.8 sec	C	39.2 sec	D
11	El Camino Real/Aviara Parkway	ICU	0.84	D	0.83	D
		HCM	**59.5 sec**	**E**	54.3 sec	D

Note: Shaded cells exceed LOS D.
(u) = unsignalized intersection
HCM = Highway Capacity Manual
ICU = intersection capacity utilization
LOS = level of service
sec = seconds
V/C = volume-to-capacity

Table O shows that most of the study intersections are anticipated to continue to deliver a satisfactory level of service. No additional intersections would exceed LOS D compared to the scenario without the gap closure. Although the two intersections previously identified as exceeding LOS D (Ambrosia Lane/Aviara Parkway and El Camino Real/Aviara Parkway) would continue to exceed LOS D, the performance of these intersections is somewhat improved by the redistribution of traffic resulting from completion of the Poinsettia Lane gap closure.

SIGNAL WARRANT ANALYSIS

Section 4C of the *California Manual on Uniform Traffic Control Devices* (MUTCD) establishes a framework for traffic control signal needs studies. These guidelines help to identify areas of consideration but do not establish mandates. The MUTCD specifically states, "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." The reverse is also true. Ultimately, the decision on control and operation of an intersection lies with the engineering judgment of the local jurisdiction. The local jurisdiction is most familiar with circumstances not captured by the guidelines in the MUTCD. The nine areas identified in the MUTCD are the following:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 3, Peak Hour
- Warrant 4, Pedestrian Volume
- Warrant 5, School Crossing
- Warrant 6, Coordinated Signal System
- Warrant 7, Crash Experience
- Warrant 8, Roadway Network
- Warrant 9, Intersection Near a [Railroad] Grade Crossing

Other factors such as road grade, sight distance, the number of lanes crossed by vehicles exiting the minor street, and driver behavior may be extenuating circumstances. LSA considered traffic control options, the MUTCD signal warrants, and potential circumstances for the two intersections immediately adjacent to the Poinsettia Lane Gap Closure: Poinsettia Lane/Cassia Road and Oriole Court-Skimmer Court/Poinsettia Lane.

Poinsettia Lane/Cassia Road

At the time existing conditions were collected for this report, this intersection was unsignalized with a stop sign on the Cassia Road approach. Completion of the Poinsettia Lane Gap Closure would result in a third leg at this intersection and introduce conflicting movements. Table P uses the traffic volume displayed in Figure 5 and identifies the intersection performance under different traffic control options. As Table P shows, any form of traffic control would result in a satisfactory level of service.

Table P: Poinsettia Lane/Cassia Road Traffic Control Comparison

	AM Peak Hour		PM Peak Hour	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Roundabout	6.6	A	8.0	A
Two-Way Stop Control	14.5	B	27.1	D
All-Way Stop Control	12.8	B	34.3	D
Traffic Signal	10.5	B	26.8	C

LOS = level of service

LSA used the gap closure growth rates identified in the traffic model data comparison above and applied it to existing intersection and roadway data to develop Existing plus Gap Closure traffic volumes for Signal Warrants 1, 2, and 3. This data set, existing pedestrian volumes, and the collision history displayed on Figure 3 were evaluated against the MUCTD signal warrants. Signal warrant worksheets are provided in Appendix F. The MUTCD establishes different thresholds for urban and rural settings. The rural setting may be used in the built-up area of an isolated community with a population of less than 10,000 or where the speed limit on a major street is greater than 40 mph. Although the City is an urban setting, the speed limit on Poinsettia Lane is 50 mph. Therefore, the rural settings were examined for Warrants 1, 2, and 3.

Warrant 1: Eight-Hour Vehicle Volume

This warrant considers whether a large volume of minor street traffic is the principal reason to consider installing a traffic signal or whether traffic volume on the major street is so heavy that minor street traffic suffers extensive delay or conflict. The MUTCD states that this warrant is met if thresholds are exceeded for each of any 8 hours of a typical day. For the intersection of Poinsettia Lane/Cassia Road, this warrant is satisfied.

Warrant 2: Four-Hour Vehicle Volume

This warrant considers whether the total volume of intersecting (i.e., conflicting) traffic is the principal reason to consider installing a traffic signal. The MUTCD states that this warrant is met if thresholds are exceeded for each of any 4 hours of a typical day. For the intersection of Poinsettia Lane/Cassia Road, this warrant is satisfied.

Warrant 3: Peak-Hour Vehicle Volume

This warrant considers whether undue delay on the minor street during the busiest hour of the day is the principal reason to consider installing a traffic signal. This warrant is met applying either delay or volume thresholds. For the intersection of Poinsettia Lane/Cassia Road, this warrant is satisfied based on volume.

Warrant 4: Pedestrian Volume

This warrant considers whether pedestrian volume is sufficiently high to be the sole reason for installing a traffic signal. In order to meet this warrant, pedestrian volume would have to exceed at least 93 crossings of the major street in an hour. For the intersection of Poinsettia Lane/Cassia Road, no pedestrian crossings were recorded when surveys of the intersection were completed, and this warrant is not satisfied.

Warrant 5: School Crossing

The School Crossing warrant is intended for application where the need for schoolchildren to cross the major street is the principal reason in considering the installation of a traffic control signal. While some children may walk to school from these residential neighborhoods, the intersection of Poinsettia Lane/Cassia Road is not part of a designated school route (identified by the use of yellow crosswalk markings); therefore, this warrant does not apply.

Warrant 6: Coordinated Signal System

This warrant may apply where maintaining platooning of vehicles through a coordinated system necessitates installing traffic control signals at intersections where other conditions would not otherwise meet warrants. The MUTCD specifies that this warrant should not be applied where the resultant spacing of signals would be less than 1,000 feet. Currently, the spacing between Poinsettia Lane/Cassia Road and Oriole Court-Skimmer Court/Poinsettia Lane is approximately 2,175 feet (with the gap closure). An additional traffic control signal will be constructed with the gap closure approximately 1,065 feet from the Poinsettia Lane/Cassia Road intersection at Artemisia Court. However, spacing between the Poinsettia Lane/Cassia Road intersection and the existing traffic

control signal at Ambrosia Lane/Poinsettia Lane is approximately 640 feet. Therefore, this warrant does not apply.

Warrant 7: Crash Experience

If an intersection experiences a high frequency and severity of collisions that could be alleviated by the installation of a traffic signal, then this warrant may apply. The threshold established in the MUTCD is a minimum of five collisions resulting in injury occurring within a 12-month period. The collision history illustrated in Figure 3 is for a 10-year period. The collision data shows no more than two collisions in a 12-month period. For the intersection of Poinsettia Lane/Cassia Road, this warrant is not satisfied.

Warrant 8: Roadway Network

Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network. Examples given include the intersection of two major routes, locations with entering volume of more than 1,000 vehicles per hour for 5 hours outside of normal business hours, and rural highways entering or traversing a city. This warrant does not apply.

Warrant 9: Intersection Near a [Railroad] Grade Crossing

This warrant could be considered if an intersection is located near an at-grade crossing of railroad tracks. The intersection of Poinsettia Lane/Cassia Road is not located near railroad tracks, and this warrant does not apply.

While unsignalized traffic control could provide a satisfactory LOS, traffic volumes at the intersection of Poinsettia Lane/Cassia Road meet Warrants 1, 2, and 3. Traffic signal control at Poinsettia Lane/Cassia Road is recommended.

Oriole Court-Skimmer Court/Poinsettia Lane

At the time existing conditions were collected for this report, this intersection was unsignalized with stop signs on the Oriole Court and Skimmer Court approaches. Completion of the Poinsettia Lane Gap Closure would result in a fourth leg at this intersection. Table Q uses the traffic volume displayed in Figure 5 and identifies the intersection performance under different traffic control options. As Table Q shows, any form of traffic control would result in a satisfactory level of service.

Table Q: Oriole Court-Skimmer Court/Poinsettia Lane Traffic Control Comparison

	AM Peak Hour		PM Peak Hour	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Roundabout	5.1	A	4.4	A
Two-Way Stop Control	15.4	C	18.8	C
All-Way Stop Control	10.6	B	11.3	B
Traffic Signal	8.9	A	8.8	A

LOS = level of service

Signal warrant worksheets for this intersection are provided in Appendix F.

Warrant 1: Eight-Hour Vehicle Volume

This warrant considers whether a large volume of minor street traffic is the principal reason to consider installing a traffic signal or whether traffic volume on the major street is so heavy that minor street traffic suffers extensive delay or conflict. The MUTCD states that this warrant is met if thresholds are exceeded for each of any 8 hours of a typical day. For the intersection of Oriole Court-Skimmer Court/Poinsettia Lane, the threshold is met for some, but not for 8 hours of the day, and the warrant is not satisfied.

Warrant 2: Four-Hour Vehicle Volume

This warrant considers whether the total volume of intersecting (i.e., conflicting) traffic is the principal reason to consider installing a traffic signal. The MUTCD states that this warrant is met if thresholds are exceeded for each of any 4 hours of a typical day. For the intersection of Oriole Court-Skimmer Court/Poinsettia Lane, the threshold is met for 1 hour but not for 4 hours of the day, and the warrant is not satisfied.

Warrant 3: Peak-Hour Vehicle Volume

This warrant considers whether undue delay on the minor street during the busiest hour of the day is the principal reason to consider installing a traffic signal. This warrant is met applying either delay or volume thresholds. For the intersection of Oriole Court-Skimmer Court/Poinsettia Lane, this warrant is not satisfied.

Warrant 4: Pedestrian Volume

This warrant considers whether pedestrian volume is sufficiently high to be the sole reason for installing a traffic signal. In order to meet this warrant, pedestrian volume would have to exceed at least 93 crossings of the major street in an hour. For the intersection of Oriole Court-Skimmer Court/Poinsettia Lane, six pedestrian crossings were recorded when surveys of the intersection were completed, which does not satisfy this warrant.

Warrant 5: School Crossing

The School Crossing warrant is intended for application where the need for schoolchildren to cross the major street is the principal reason in considering the installation of a traffic control signal. While some children may walk to school from these residential neighborhoods, the intersection of Oriole Court-Skimmer Court/Poinsettia Lane is not part of a designated school route (identified by the use of yellow crosswalk markings); therefore, this warrant does not apply.

Warrant 6: Coordinated Signal System

This warrant may apply where maintaining platooning of vehicles through a coordinated system necessitates installing traffic control signals at intersections where other conditions would not otherwise meet warrants. The MUTCD specifies that this warrant should not be applied where the resultant spacing of signals would be less than 1,000 feet. Currently, the spacing between Poinsettia Lane/Cassia Road and Oriole Court-Skimmer Court/Poinsettia Lane is approximately 2,175 feet (with the gap closure). An additional traffic control signal will be constructed at Artemisia Court

approximately 1,110 feet from the Oriole Court-Skimmer Court/Poinsettia Lane intersection. This spacing would leave 1,065 feet between the Artemisia Court traffic signal and the intersection of Poinsettia Lane/Cassia Road where this report recommends a traffic signal. The distance between the intersection of Oriole Court-Skimmer Court/Poinsettia Lane and the existing traffic signal at El Camino Real/Poinsettia Lane is approximately 1,400 feet. Therefore, this warrant could be considered at the intersection of Oriole Court-Skimmer Court/Poinsettia Lane. The appropriate infrastructure is present along Poinsettia Lane for interconnection and coordination of traffic signals between Ambrosia Lane and El Camino Real. A traffic signal at the Oriole Court-Skimmer Court/Poinsettia Lane intersection would maintain platooning of vehicles to facilitate this coordinated system. Therefore, this warrant is satisfied at the intersection of Oriole Court-Skimmer Court/Poinsettia Lane.

Warrant 7: Crash Experience

If an intersection experiences a high frequency and severity of collisions that could be alleviated by the installation of a traffic signal, then this warrant may apply. The threshold established in the MUTCD is a minimum of five collisions resulting in injury occurring within a 12-month period. For the intersection of Oriole Court-Skimmer Court/Poinsettia Lane, this warrant is not satisfied based on past collision history.

Warrant 8: Roadway Network

Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network. Examples given include the intersection of two major routes, locations with entering volume of more than 1,000 vehicles per hour for 5 hours outside of normal business hours, and rural highways entering or traversing a city. This warrant does not apply.

Warrant 9: Intersection Near a [Railroad] Grade Crossing

This warrant could be considered if an intersection is located near an at-grade crossing of railroad tracks. The intersection of Oriole Court-Skimmer Court/Poinsettia Lane is not located near railroad tracks, and this warrant does not apply.

While unsignalized traffic control could provide a satisfactory LOS, delay would be experienced by vehicles entering Poinsettia Lane from the adjacent residential neighborhoods. Traffic volumes exceed thresholds for some, but not all, of the hours specified in the signal warrants. Pedestrians cross Poinsettia Lane at this intersection, but not in sufficient quantity to meet the pedestrian signal warrant. The intersection has not been the location of traffic collisions, but the width and grade of the major roadway could contribute to increased collisions when paired with driver error.

An additional factor that should be taken into consideration is driver expectation. The new intersection at Artemisia Court will be signalized, although the thresholds of the signal warrants are partially, but not fully, met. The only full-access unsignalized intersection along Poinsettia Lane would be at Brigantine Drive, and the neighborhood accessed by Brigantine Drive also has the option of using the signalized intersection at Black Rails Road to exit the neighborhood. Drivers on Poinsettia Lane may not be prepared for cross traffic at an unsignalized Oriole Court-Skimmer Court/Poinsettia Lane intersection. Additionally, Warrant 6 is satisfied based on the distances

between signalized intersections and the necessity to maintain vehicle platooning through the coordinated traffic signal system. Based on these factors, a traffic signal at Oriole Court-Skimmer Court/Poinsettia Lane is recommended.

EL CAMINO REAL/POINSETTIA LANE

In 2012 El Camino Real was widened to provide three southbound lanes between Cassia Road and Aviara Parkway. Prior to this project, the intersection of El Camino Real/Poinsettia Lane provided two left-turn lanes, two through lanes, and one right-turn lane at the southbound approach. As part of the expansion, the exclusive right-turn lane was converted to a through lane. Right-turning vehicles share the outside lane with vehicles traveling through the intersection. In the existing condition, 14 vehicles make the southbound right-turn in either peak hour, which means that the outside lane primarily functions as a through lane.

As Table N shows, the southbound right-turn meets the City's intersection turning-movement needs assessment for a dedicated right-turn lane with the traffic volumes redistributed at completion of the Poinsettia Lane gap closure. This section examines the potential benefits and constraints of adding an exclusive southbound right-turn lane.

Collision Potential

As a further complication, El Camino Real slopes downhill as people travel south. The public has raised a concern that vehicles traveling straight through the intersection will require longer to stop if approaching a vehicle slowing to turn right – and that a higher risk of collision is present without an exclusive turn lane.

Analysis of collision data from 2008 to 2018 indicated that southbound rear-end collisions have not increased since the southbound right-turn lane at this intersection was converted to a through/ right-turn lane. In fact, all five southbound rear-end collisions occurred prior to the 2012 conversion of the right-turn lane.

It should be noted that El Camino Real provides a bicycle lane. At other intersections along El Camino Real with an exclusive right-turn lane, a bicycle lane is provided at the intersection with an appropriate transition in advance of the intersection. A similar treatment would be required if an exclusive right-turn lane were added at the southbound approach of El Camino Real/Poinsettia Lane. This transition, however, requires bicycles to cross the vehicle path to remain in the bicycle lane.

Other than collision history, concern regarding the potential for collisions should be tempered by the fact that turning vehicles likely have to slow when entering an exclusive turn lane. Drivers of through vehicles traveling in the outside lane always have to consider the potential that vehicles in front of them may desire to turn. The speed of vehicles traveling in the outside lane should take these possibilities into account.

Intersection Performance

Table E shows that the intersection of El Camino Real/Poinsettia Lane functions at LOS D or better in existing conditions with the current lane configuration. Table O shows that the intersection of El Camino Real/Poinsettia Lane is anticipated to continuing functioning at LOS D or better without the

addition of a southbound right-turn lane. However, to demonstrate the potential benefit of adding a southbound right-turn lane, the intersection was reanalyzed with that configuration. Table R displays a summary of previously disclosed intersection performance data and compares that to intersection performance with a dedicated southbound right-turn lane.

Table R: El Camino Real/Poinsettia Lane Intersection Performance Comparison

Scenario	Shared SBR		Dedicated SBR		Effect of Adding SBR Lane
	V/C Ratio or Delay	LOS	V/C Ratio or Delay	LOS	
Existing AM					
ICU	0.52	A	0.52	A	0.00
HCM	24.1 sec	C	23.8 sec	C	0.3 sec
Queue in Southbound Through Lanes	234 feet		231 feet		3 feet
Existing PM					
ICU	0.53	A	0.53	A	0.00
HCM	20.7 sec	C	20.3 sec	C	0.4 sec
Queue in Southbound Through Lanes	297 feet		293 feet		4 feet
2035 With Poinsettia Lane Gap Closure AM					
ICU	0.72	C	0.69	B	0.03
HCM	45.3 sec	D	43.3 sec	D	2.0 sec
Queue in Southbound Through Lanes	407 feet		345 feet		62 feet
2035 With Poinsettia Lane Gap Closure AM					
ICU	0.74	C	0.68	B	0.06
HCM	35.7 sec	D	31.6 sec	C	4.1 sec
Queue in Southbound Through Lanes	542 feet		397 feet		145 feet

Note: Shaded cells exceed LOS D.
(u) = unsignalized intersection
HCM = Highway Capacity Manual
ICU = intersection capacity utilization
LOS = level of service
SBR = southbound right-turn
sec = seconds
V/C = volume-to-capacity

As Table R shows, adding a southbound right-turn lane would have minimal effect on the performance of the intersection in existing conditions. If southbound right-turn volume increases with the completion of Poinsettia Lane as anticipated, then adding a dedicated turn lane would provide some benefit to the intersection. It should be noted, however, that the benefit to the intersection does not improve any deficiency. The intersection is forecast to function at a satisfactory level of service with or without a dedicated southbound right-turn lane.

Engineering Constraints

The addition of an exclusive right-turn lane would require widening of El Camino Real by approximately 12 feet on the west side of the intersection. In order to accommodate the maximum anticipated queue, the turn pocket should provide approximately 80 to 100 feet of storage. While the west side of the intersection appears to be vacant land, some of the facilities near the roadway may present constraints. Some of the items needing relocation present a typical amount of effort for this type of widening project. These include the traffic signal controller, recycled water irrigation lines (and valves located approximately 110 feet from the back of curb return), and the cathodoic protection testing station for the in-street petroleum line.

Widening the roadway by 12 feet will extend beyond the currently graded area. An elevation difference of as much as 12 feet will require construction of a retaining wall as part of adding the right-turn lane. A retaining wall like the one required at this location is not unusual for this type of widening project in a hilly area.

Also located on the west side of El Camino Real is an underground SDG&E natural gas line and a vault, which does not appear to have a traffic-rated lid. This vault will have to be rebuilt or relocated to complete the widening. The cost of addressing the vault depends on the whether SDG&E has an easement or prior rights associated with the natural gas line. The range in cost for the vault could be from $100,000–$500,000, bringing the total construction cost of adding an exclusive southbound right-turn lane at El Camino Real/Poinsettia Lane to potentially $1.35 million.

Biological Constraints

Perhaps more significant than the engineering constraints are the biological constraints in the area west of El Camino Real that would be disturbed by the project adding a right-turn lane. A memorandum detailing existing conditions in that area is included as Appendix G. According to the Habitat Management Plan for Natural Communities in the City of Carlsbad (HMP), the area that would be disturbed by the addition of the southbound right-turn lane is within an existing hardline preserve (Preserve Number P/A#705) and is within the Coastal Zone.

Because the area is within a hardline preserve, impacts to biological resources (such as the southern maritime chaparral that occurs on the site) are not allowed unless: (a) they are associated with a covered project as defined by the HMP, (b) an equivalency finding results in a minor amendment and adjustment to the hardline boundary, or (c) a major amendment to the HMP is approved. Approval of impacts to southern maritime chaparral within a hardline boundary requires 3:1 mitigation. Special-status species have the potential to occur in the area, and focused surveys for Orcutt's brodiaea, Del Mar Mesa sand aster, and coastal California gnatcatcher would need to be performed (likely between May and July) to confirm the initial assessment that these species are absent from the site. The HMP provides additional conservation standards related to areas subject to the constraints of being within the California Coastal Zone. Permitting through the resource agencies will add to the total cost of adding an exclusive southbound right-turn lane at El Camino Real/Poinsettia Lane.

CUT-THROUGH TRAFFIC EVALUATION

The Carlsbad General Plan Mobility Element defines the uses of different street classifications. Arterial Streets and Arterial Connectors connect people to different areas of the City and to different land uses. Local/neighborhood streets connect people to residential neighborhoods and local areas. This section examines the potential for cut-through traffic, which is arterial traffic using local streets. The section following provides options for reducing cut-through traffic.

In the existing condition, the gap in Poinsettia Lane results in arterial traffic using Cassia Road (a Local/Neighborhood Street) and Ambrosia Lane (a School Street). This is cut-through traffic that occurs because the arterial connector is not yet available. As noted earlier, the Poinsettia Lane gap closure has the potential to redistribute traffic in the vicinity of the project. Traffic currently using Ambrosia Lane or Cassia Road to travel around the gap would be able to stay on Poinsettia Lane to

complete their trip. Analysis of traffic model data shows that the completion of Poinsettia Lane is anticipated to reduce traffic on Cassia Road (28.4 percent lower) and Ambrosia Lane (12.7 percent lower). The traffic model also predicts that traffic volumes along Dove Lane could increase by 9.8 percent, which is likely to mean that traffic volumes along Moorhen Place and Oriole Court would also increase. The traffic model data indicate the potential for cut-through traffic in the Viadana neighborhood.

Cut-through traffic occurs where a local street provides time savings compared to remaining on the arterial network. Time savings is affected by distance, speed, and delay at intersections. These factors were measured to determine which cut-through routes may be attractive. Travel speeds were surveyed and reported in Table C. The speed data are summarized as follows:

- **Poinsettia Lane:** 50 mph posted speed limit; 33 mph typical speed
- **Cassia Road:** 35 mph posted speed limit; 29 mph typical speed
- **Ambrosia Lane:** 40 mph posted speed limit; 34 mph typical speed
- **Mimosa Drive:** 25 mph posted speed limit; 25 mph typical speed
- **Dove Lane:** 35 mph posted speed limit; 30 mph typical speed
- **Aviara Parkway:** 40 mph posted speed limit
- **El Camino Real:** 55 mph posted speed limit

Not all possible routes have the potential to be attractive. Vehicles on Aviara Parkway can enter the Post Office/Library/Shopping Center area from a signalized driveway on Aviara Parkway or a right-in/right-out driveway. Vehicles on El Camino Real can enter the Post Office/Library/Shopping Center area from a signalized intersection with Dove Lane. Diverting from these direct paths and traveling through neighborhoods would not be attractive. Indeed, these alternatives are available today and cut-through traffic is not present.

Many potential routes through the study area were evaluated in a screening process that considered distance and speed. Routes that far exceeded the travel time of direct routes were eliminated from consideration. Routes examined in detail due to their cut-through potential include the following:

- From the west on Poinsettia Lane to the Post Office/Library/Shopping Center along Oriole Court, Mimosa Drive, Moorhen Place, and Dove Lane instead of Poinsettia Lane, El Camino Real, and Dove Lane

- From the Cassia neighborhoods to the Post Office/Library/Shopping Center along Cassia Road, Poinsettia Lane, Oriole Court, Mimosa Drive, Moorhen Place, and Dove Lane instead of Cassia Road, El Camino Real, and Dove Lane

- From the north on El Camino Real to westbound Poinsettia Lane along Cassia Road and Poinsettia Lane instead of directly to Poinsettia Lane

The analysis of route travel time included the distance and typical travel speed along each roadway on the route and average delay for each movement needed at intersections along the route. Calculations of intersection turning-movement delay come from the HCM analysis of future traffic

conditions. Therefore, the analysis presents a worst-case accounting for the potential for cut-through routes to increase in attractiveness as arterial traffic volumes increase. It should be noted that delay to vehicles traveling through the new traffic signal on Poinsettia Lane at the entry to the Poinsettia 61 residential project is accounted for in the analysis.

Table S provides a summary of travel time for routes from West Poinsettia Lane to the Post Office/ Library/Shopping Center and the reverse trip. As Table S shows, the cut-through route is about 0.10 of a mile shorter and anticipated to save 1 minute of travel time. The reverse trip leaving the shopping center is anticipated to save 2 minutes of travel time due to the increased delay for making left turns at El Camino Real and Poinsettia Lane. This is sufficient time savings that some of the vehicles traveling between the shopping center and Poinsettia Lane to the west may desire to cut through the local streets.

Table S: Route Options from West Poinsettia Lane to Shopping Center

Route	Segment	Speed (mph)	Distance (miles)	Time (minutes)	Intersection Delay (minutes)
To Shopping Center on Arterials	Poinsettia Lane	33	0.27	0.49	0.86
	El Camino Real	55	0.32	0.35	0.78
	Dove Lane	30	0.06	0.13	0.17
	Total		**0.65**	**2.78**	
To Shopping Center through Neighborhood	Oriole Court-Mimosa Drive-Moorhen Place	25	0.31	0.74	0.42
	Dove Lane	30	0.21	0.42	0.12
	Total		**0.52**	**1.70**	
From Shopping Center on Arterials	Dove Lane	30	0.06	0.13	0.17
	El Camino Real	55	0.32	0.35	1.56
	Poinsettia Lane	33	0.27	0.49	1.29
	Total		**0.65**	**3.99**	
From Shopping Center through Neighborhood	Dove Lane	30	0.21	0.42	0.25
	Oriole Court-Mimosa Drive-Moorhen Place	25	0.31	0.74	0.57
	Total		**0.52**	**1.98**	

mph = miles per hour

Table T provides a summary of travel time for routes from the neighborhoods around Cassia Road to the Post Office/Library/Shopping Center and the reverse trip. As Table T shows, the cut-through route is about 0.10 of a mile longer and anticipated to require about 15 seconds more to get to the shopping center. The reverse trip leaving the shopping center is anticipated to save 10 seconds of travel time due to the increased delay for making left turns at El Camino Real and Cassia Road. Some of the vehicles leaving the shopping center to go back to the neighborhoods along Cassia Road may choose to cut through the local streets rather than wait to turn left from Dove Lane to El Camino Real.

Table U provides a summary of travel time for routes from El Camino Real north of Cassia Road to Poinsettia Lane west of Cassia Road and the reverse trip. As Table U shows, the cut-through route is about 0.50 mile shorter and anticipated to require about 1.4 minutes less time. The reverse trip traveling east on Poinsettia Lane and eventually north on El Camino Real is anticipated to save less

Table T: Route Options from Cassia Neighborhoods to Shopping Center

Route	Segment	Speed (mph)	Distance (miles)	Time (minutes)	Intersection Delay (minutes)
To Shopping Center on Arterials	Cassia Road	29	0.27	0.55	0.76
	El Camino Real	55	0.67	0.73	0.78
	Dove Lane	30	0.06	0.13	0.17
	Total		**1.00**	**3.12**	
To Shopping Center through Neighborhood	Cassia Road	29	0.21	0.44	0.49
	Poinsettia Lane	33	0.40	0.73	0.13
	Oriole Court-Mimosa Drive-Moorhen Place	25	0.31	0.74	0.29
	Dove Lane	30	0.21	0.42	0.12
	Total		**1.13**	**3.36**	
From Shopping Center on Arterials	Dove Lane	30	0.06	0.13	0.17
	El Camino Real	55	0.67	0.73	1.56
	Cassia Road	29	0.27	0.54	0.87
	Total		**1.00**	**4.00**	
From Shopping Center through Neighborhood	Dove Lane	30	0.21	0.42	0.25
	Oriole Court-Mimosa Drive-Moorhen Place	25	0.31	0.74	0.41
	Poinsettia Lane	33	0.40	0.73	0.29
	Cassia Road	29	0.21	0.44	0.55
	Total		**1.13**	**3.83**	

mph = miles per hour

Table U: Route Options from North El Camino Real to West Poinsettia Lane

Route	Segment	Speed (mph)	Distance (miles)	Time (minutes)	Intersection Delay (minutes)
North to West on Arterials	El Camino Real	55	0.32	0.35	0.87
	Poinsettia Lane	33	0.67	1.23	0.55
	Total		**0.99**	**3.00**	
North to West through Neighborhood	El Camino Real	55	0	0	0.25
	Cassia Road	29	0.49	1.00	0.35
	Poinsettia Lane	33	0	0	0
	Total		**0.49**	**1.60**	
West to North on Arterials	Poinsettia Lane	33	0.67	1.22	1.13
	El Camino Real	55	0.32	0.35	0.14
	Total		**0.99**	**2.84**	
West to North through Neighborhood	Poinsettia Lane	33	0	0	0.38
	Cassia Road	29	0.49	1.00	0.77
	El Camino Real	55	0	0	0
	Total		**0.49**	**2.15**	

mph = miles per hour

time (about 40 seconds) due to the increased delay for making left turns at Cassia Road and El Camino Real. Because the route is obviously shorter and drivers have been accustomed to traveling this route around the gap in Poinsettia Lane, many of the vehicles making this trip may choose to cut through Cassia Road.

Traffic model data reveal that cut-through traffic could increase traffic volumes along Oriole Court, Mimosa Drive, Moorhen Place, and Dove Lane by 10 percent. Cut through traffic on Cassia Road between El Camino Real and Poinsettia Lane occurs today due to the gap in Poinsettia Lane. Vehicles to/from South El Camino Real will use Poinsettia Lane, but vehicles to/from North El Camino Real may continue to use Cassia Road resulting in up to 400 vehicles per peak hour cutting through on Cassia Road.

CARLSBAD RESIDENTIAL TRAFFIC MANAGEMENT PROGRAM

The Carlsbad Residential Traffic Management Program (Carlsbad, May 2011) was created to provide a process for minimizing disruptions to residential neighborhoods from excessive speeds and high volumes. The program only applies to residential streets and should not be directly applied to non-residential streets. No residential homes take access from Cassia Road. However, upon completion of the Poinsettia Lane Gap Closure, regional traffic will have alternative connections not relying on Cassia Road. At that time, the City may determine that traffic calming solutions outside of the Carlsbad Residential Traffic Management Program could apply to Cassia Road.

As stated previously, the Carlsbad General Plan Mobility Element defines the purposes of different roadway classifications. Cassia Road, Oriole Court, Mimosa Drive, Moorhen Place, and Dove Lane are classified as Local/Neighborhood Streets and should be connecting people to residential neighborhoods. Connections to different areas and land uses of the City should occur on Arterial Streets or Arterial Connectors.

This report identifies three potential disruptions to residential neighborhoods in the study area:

- Speeding issues on Cassia Road, particularly westbound (downhill) traffic
- Potential for cut-through traffic along Oriole Court-Moorhen Place-Dove Lane by vehicles traveling between the Post Office/Library/Shopping Center and Poinsettia Lane to the west
- Potential for cut-through traffic along Cassia Road by vehicles traveling from eastbound Poinsettia Lane to northbound El Camino Real and from southbound El Camino Real to westbound Poinsettia Lane

This section describes potential measures to minimize neighborhood disruption. The Carlsbad Residential Traffic Management Program requires a high level of resident involvement to ensure that the measures being implemented are desired and accepted by a majority of the residents. Potential measures to be taken can fall into the categories of Education, Engineering, Enforcement, or Enhancement. The Carlsbad Residential Traffic Management Program defines these as:

> **Education:** Providing resource materials and information to residents to inform them about all aspects of traffic calming.
>
> **Engineering:** Physical measures and other techniques utilized in the traffic calming program that are based upon input and concurrence by residents, engineering principles, financial and environmental considerations.

Enforcement: Police presence and selective enforcement of vehicle code violations.

Enhancement: Using special treatments in the physical measures through design and/or landscaping features to improve livability, aesthetics, community pride.

A traffic calming toolbox is provided describing various strategies within these categories.

Speeding On Cassia Road

The posted speed limit is 35 mph, which is reinforced by four speed feedback signs. If vehicles are traveling at this speed, adequate sight distance (250 feet at 35 mph) is provided at intersections along Cassia Road. Most drivers are complying with the posted speed limit in the existing condition (the observed 85th percentile speed was 29 mph). However, many vehicles were observed exceeding the posted speed limit by 10 mph (with a few exceeding 15 mph over the posted speed limit). At these speeds, intersections on Cassia Road do not have sufficient stopping sight distance (430 feet at 50 mph). This pattern of majority compliance and several extreme outliers is consistent with observed patterns of cut-through traffic.

The Carlsbad Residential Traffic Management Program lists several measures for reducing traffic speeds. Narrowing on Cassia Road (for the addition of bike lanes) has already been applied. Vertical traffic control measures, such as speed tables, work best when they are needed for speed reduction at a particular location, such as a pedestrian crossing. The downside is an increase in noise at the location of the vertical traffic control measure as vehicles brake and then accelerate to gain back the lost speed. Traffic Calming State of the Practice, (ITE 1999) describes many of the measures contained within the Carlsbad Residential Traffic Management Program toolbox. The Carlsbad Residential Traffic Management Program recommends 300 feet to 700 feet spacing between speed control devices for residential streets with a 25 mph speed limit. As each of these locations would generate increased noise, the most residents along Cassia Road would experience increased noise. Therefore, vertical traffic control measures are not recommended. The MUTCD provides warrants for the placement of stop signs and discourages use where warrants are not met. Traffic Calming State of the Practice discourages the addition of unwarranted stop signs to residential streets as compliance with these signs is low, an undeserved expectation of safety is introduced, and collisions increase as a result.

The surveys taken for this report showed that outlying non-compliant speeds were most common traveling westbound (downhill) in the early evening hours of 4:00 p.m. to 7:00 p.m. Targeted police enforcement (Measure TB-5) during these times may have a positive influence on driver behavior. As the Carlsbad Residential Traffic Management Program reports, benefits are sometimes short-term without regular periodic enforcement.

A new traffic signal at Poinsettia Lane/Cassia Road may assist to reduce the number of vehicles exceeding the speed limit on Cassia Road. In the existing condition, vehicles traveling westbound (downhill) do not have opposing traffic at and might not comply with the stop sign at the intersection of Poinsettia Lane/Cassia Road. Without an expectation of having to stop, some vehicles allow for the steady increase in speed as they travel downhill. This likely contributes to the concentration of hit object collisions at this intersection. The future traffic signal will require a complete stop on a red signal indication, which may moderate the number of vehicles traveling at

excessive speed. To that end, it is recommended that the traffic signal phasing defaults to green for through traffic on Poinsettia Lane and that detectors on Cassia be spaced so that vehicles traveling in excess of 35 mph would have to stop before the light turns green.

Cut-Through Traffic on Oriole Court, Moorhen Place, and Dove Lane

Upon completion of the Poinsettia Lane gap closure, cut-through traffic from the west on Poinsettia Lane to the Post Office/Library/Shopping Center is possible because of a moderate time savings while traveling to the shopping center and a greater time savings returning from the shopping center. Successful implementation of traffic volume-reducing measures is difficult due to the desire to maintain network connectivity.

As the Oriole Court approach at the Oriole Court-Skimmer Court/Poinsettia Lane is the entry into a residential area, the application of an Entry Treatment (TB-19) may be appropriate. The Entry Treatment is a combination of Textured Pavement (TB-18) and Center Island Narrowing (TB-20). By itself, textured pavement can provide a visual cue to drivers that they are entering a residential neighborhood. The narrower lanes resulting from adding the center island can reduce speeds upon entry to the neighborhood. Exhibit 1 provides an example of an Entry Treatment in the City of Carlsbad. To further support the Entry Treatment, it is possible to place a structure within the center island imitating a guard house for a private gated community. In combination, these features can present a less inviting entry at the beginning of the cut-through route.

Source: Google Street View

Exhibit 1: Example of Entry Treatment

The City, through the Carlsbad Residential Traffic Management Program, can evaluate Oriole Court, and Moorhen Place to determine whether the criteria threshold for critical speed (i.e., 32 mph) is met or whether traffic volumes significantly exceed baseline volumes. If so, the public input steps outlined in the Carlsbad Residential Traffic Management Program can be followed to develop a traffic calming plan that could include measures such as speed cushions.

Dove Lane could be evaluated outside of the Carlsbad Residential Traffic Management Program process if traffic volumes significantly exceed baseline volumes. Given the increased time savings for

vehicles leaving the shopping center, cut-through deterrents at the Dove Lane entry to the neighborhood are perhaps even more important than at the Oriole Court entry. Speed Cushions (TB-13) are a vertical traffic control device designed to reduce vehicle speeds, but can also lead to traffic volume reductions. Traffic Calming State of the Practice provides data that indicates these devices can reduce traffic volume by 20 percent. The deterrent effect of these devices would be enhanced by placing the first set of speed cushions just west of the intersection with Black Skimmer Drive and pairing it with a warning sign that would be visible to drivers exiting the shopping center intersection with Dove Lane.

The City could explore signal-timing changes at the intersection of El Camino Real/Dove Lane that could reduce delay along the arterial route and thereby reduce the incentive to cut-through local roads. The westbound approach of Dove Lane has lower volume than the eastbound approach of Dove Lane. The City could consider either protected left-turn signal phasing that would reservice eastbound left turns and the end of the east-west phase or east-west split phasing with restriping to allow left turns from either eastbound lane. Either of these changes would increase the number of eastbound left turns per cycle, decrease delay for eastbound left turns, and reduce the incentive to cut through local roads.

Cut-Through Traffic on Cassia Road

Given the shorter distance and time savings for vehicles traveling between North El Camino Real and West Poinsettia Lane, Cassia Road is likely to continue to be used by drivers completing this trip. Because cut-through traffic is a possible source of existing speeding problems, measures that reduce cut-through traffic have the potential to reduce speeding concerns as well.

For traffic traveling eastbound on Poinsettia Lane to northbound on El Camino Real, the time savings of the cut-through route is less than one minute. Changes to the delay experienced at the traffic signals along the route could impact the time-savings advantage and alter driver behavior. Specifically, if the delays experienced when making eastbound left turns at Cassia Road and at El Camino Real are less than the delay making an eastbound left-turn at El Camino Real/Poinsettia Lane, than the time savings of the shorter travel path might be eliminated.

As mentioned previously, the traffic signal at Poinsettia Lane/Cassia Road should prioritize a green light for through traffic on Poinsettia Lane. In this configuration, vehicles approaching Cassia Road from eastbound Poinsettia Lane would encounter a red light for the left-turn lane. If the traffic signal changes westbound Poinsettia Lane to a red light so a green arrow can be provided to left turns onto Cassia Road, then delay is reduced. If the traffic signal is programmed to provide a green left-turn arrow only after the Cassia Road green light phase, then delay to the Poinsettia left turns is increased and this cut-through movement would be discouraged. Indeed, some drivers intending to cut through Cassia Road may give up on waiting for a green arrow and merge back into Poinsettia Lane through traffic.

The time savings for cut-through traffic for southbound El Camino Real to westbound Poinsettia Lane is about 1.5 minutes. This advantage could not be overcome solely through signal timing, but traffic signal timing can moderate the time-savings advantage. It is possible that grade differences and a curve in Poinsettia Lane may prevent sufficient corner sight distance (550 feet at 50 mph). If a traffic signal is constructed at Poinsettia Lane/Cassia Road, the City should investigate whether

sufficient corner sight distance is provided from Cassia Road to permit right turns on red. Since the traffic signal would default to a green light for Poinsettia Lane east-west traffic, if right turns on red are prohibited for Poinsettia Lane, then delay along the cut-through route would be increased and the attractiveness of the route would be somewhat reduced.

Enhanced Measures

While the Carlsbad Residential Traffic Management Program states that road closures are not recommended for use, the traffic calming toolbox includes many forms of road closure for traffic volume reduction such as Forced Turn Channelization, Median Barrier, Semi-Diverter, Partial Diverter, and Diagonal Diverter. If cut-through traffic continues to use Oriole Court-Moorhen Place-Dove Lane and Cassia Road, then road closures are an enhanced traffic-calming measure that would effectively eliminate the disruption to the residential neighborhoods. Road closures may be considered following the procedures found in the Carlsbad Residential Traffic Management Program if all other measures have failed to achieve their goals.

Road closures could be designed to only prevent vehicle trips. Pedestrian and bicycle access could be maintained as in the example provided in Exhibit 2 from a road closure in Fullerton, California. There is a potential that access for fire trucks could also be maintained. Speed cushions facilitate fire truck access because fire trucks have a wider wheel base that can straddle a speed cushion while passenger vehicles roll over a speed cushion on at least one side. Instead of one bicycle access as shown in Exhibit 2, a road closure with two bicycle access lanes (spaced at the width of a fire truck axle) could facilitate through access by fire trucks in an emergency.

Source: Google Street View

Exhibit 2: Example of Road Closure

SUMMARY, RECOMMENDATIONS, AND MONITORING

Poinsettia Lane from Carlsbad Boulevard to Melrose Drive has been a part of the Carlsbad planned roadway network since at least 1994. A project to complete Poinsettia Lane between Cassia Road and El Camino Real was included in the Carlsbad General Plan Mobility Element when it was adopted by the City Council in September 2015. At this time, the City is preparing to complete the gap closure of Poinsettia Lane.

This traffic investigation considered the potential effects of the gap closure on the surrounding roadway system and adjacent intersections and provided potential strategies for limiting the intrusion of cut-through traffic into the Viadana and Pavoreal neighborhoods. Baseline conditions were also established that can be used to determine the extent of intrusion if requests for additional intervention are pursued through the Carlsbad Residential Traffic Management Program.

Table V summarizes the baseline roadway volume, travel speed, and collision history for local/ neighborhood roads near the Poinsettia Lane gap closure. These data can be monitored to determine the effects of the Poinsettia Lane gap closure.

Table V: Before Gap Closure (2018) Traffic Condition Summary

Roadway Segment	Roadway Volume	Typical Speed	>5 mph over Speed Limit?	Collisions over Past 10 Years
Poinsettia Lane (Ambrosia Lane to Cassia Road)	9,789	33	N	3
Cassia Road (Poinsettia Lane to El Camino Real)	9,290	30	Y	6
Ambrosia Lane (Poinsettia Lane to Aviara Parkway)	3,321	34	N	12
Mimosa Drive (Oriole Court to Aviara Parkway)	679	25	N	1
Dove Lane (Moorhen Place to Black Skimmer Road)	368	30	N	0

mph = miles per hour

This traffic investigation found that the Poinsettia Lane gap closure is not expected to alter travel patterns in a way that would cause a currently functioning intersection to operate at an unsatisfactory level of service. It is anticipated that the Poinsettia Lane gap closure will reduce some traffic on Ambrosia Lane, Aviara Parkway, and Cassia Road. However, not all cut-through traffic currently using Cassia Road would be removed after the Poinsettia Lane gap closure (while traffic to/from the south on El Camino Real would find Poinsettia Lane a shorter route, traffic to/from the north on El Camino Real would still find Cassia Road a shorter route). In addition, the Poinsettia Lane gap closure opens an opportunity for some traffic to cut through the Viadana neighborhood on their way to and from the shopping center at the northwest corner of El Camino Real/Aviara Parkway.

A number of recommendations are made for consideration by the City.

- A speeding issue is present on Cassia Road which could be addressed with directed police enforcement focusing on westbound (downhill) traffic between 4:00 p.m. and 7:00 p.m.

- If constructed, a traffic signal at Poinsettia Lane/Cassia Road should have signal timing supportive of the goals of deterring cut-through traffic and excessive speed:

- The signal should default to providing a green light for east-west traffic on Poinsettia Lane;
- The delay between detection of vehicles approaching on Cassia Road and a green light for Cassia Road should be timed so that vehicles approaching at a speed greater than 35 mph would be required to stop for the red light;
- A green arrow for left turns from Poinsettia Lane to Cassia Road should be provided only after the Cassia Road phase; and
- The City should consider whether sufficient corner sight distance is available to allow right turns on red from Cassia Road to Poinsettia Lane.

- Traffic calming features such as entry treatments (TB-19) and speed cushions (TB-13) may be considered based on the monitoring of traffic after completion of the Poinsettia Lane Gap Closure.

- Signal timing or striping at El Camino Real/Dove Lane could be modified to increase the number of eastbound left turns per cycle thereby reducing delay to vehicles traveling on arterials rather than cutting through local roads.

This traffic investigation also examined the intersection of El Camino Real/Poinsettia Lane to determine the following: how the operation of the intersection would be affected by the addition of a dedicated southbound right-turn lane, whether engineering constraints to adding a dedicated southbound right-turn lane are present, and whether constraints to adding a dedicated southbound right-turn lane are present.

The traffic investigation found that adding a southbound right-turn lane would have minimal effect on the performance of the intersection in existing conditions and only some benefit after completion of Poinsettia Lane. The benefit to the intersection does not improve any deficiency. The intersection is forecast to function at a satisfactory level of service with or without a dedicated southbound right-turn lane.

Construction of the southbound right-turn lane would face some ordinary engineering constraints and an additional constraint for reconstructing or relocating an SDG&E vault for a natural gas line. This portion of the construction could cost anywhere from $100,000–$500,000, bringing the total cost of construction to potentially $1.35 million.

Construction of the southbound right-turn lane at El Camino Real/Poinsettia Lane would also face constraints due to biological resources. The area of roadway widening is within a hardline preserve in the Habitat Management Plan for Natural Communities in the City of Carlsbad (HMP) and is within the Coastal Zone. Resource agency approval of impacts within a hardline boundary requires 3:1 mitigation. Permitting through the resource agencies will add to the total cost of adding an exclusive southbound right-turn lane at El Camino Real/Poinsettia Lane.

APPENDIX A

TRAFFIC VOLUME DATA AND SPEED SURVEYS

Prepared by NDS/ATD

VOLUME

Poinsettia Ln Bet. Aviara Pkwy & Ambrosia Ln

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4193_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,073	5,257	10,330

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			9		8		17		12:00			79		65		144	
00:15			6		1		7		12:15			62		53		115	
00:30			9		3		12		12:30			77		80		157	
00:45			3	27	3	15	6	42	12:45			83	301	60	258	143	559
01:00			4		0		4		13:00			76		74		150	
01:15			4		3		7		13:15			84		58		142	
01:30			5		1		6		13:30			55		60		115	
01:45			7	20	1	5	8	25	13:45			95	310	71	263	166	573
02:00			1		1		2		14:00			90		80		170	
02:15			1		2		3		14:15			84		164		248	
02:30			2		0		2		14:30			84		111		195	
02:45			1	5	2	5	3	10	14:45			116	374	108	463	224	837
03:00			1		0		1		15:00			101		109		210	
03:15			2		2		4		15:15			90		110		200	
03:30			0		0		0		15:30			76		124		200	
03:45			0	3	4	6	4	9	15:45			113	380	105	448	218	828
04:00			0		5		5		16:00			99		95		194	
04:15			1		7		8		16:15			75		86		161	
04:30			6		10		16		16:30			89		106		195	
04:45			8	15	15	37	23	52	16:45			105	368	81	368	186	736
05:00			7		20		27		17:00			108		109		217	
05:15			12		20		32		17:15			133		143		276	
05:30			13		22		35		17:30			114		103		217	
05:45			19	51	35	97	54	148	17:45			98	453	100	455	198	908
06:00			27		41		68		18:00			100		82		182	
06:15			22		40		62		18:15			95		70		165	
06:30			42		60		102		18:30			104		81		185	
06:45			60	151	82	223	142	374	18:45			111	410	67	300	178	710
07:00			51		99		150		19:00			102		82		184	
07:15			99		115		214		19:15			69		62		131	
07:30			109		161		270		19:30			51		47		98	
07:45			74	333	131	506	205	839	19:45			56	278	43	234	99	512
08:00			103		137		240		20:00			54		29		83	
08:15			84		125		209		20:15			66		32		98	
08:30			75		88		163		20:30			52		49		101	
08:45			117	379	78	428	195	807	20:45			51	223	55	165	106	388
09:00			75		96		171		21:00			40		17		57	
09:15			68		77		145		21:15			38		20		58	
09:30			56		78		134		21:30			30		17		47	
09:45			60	259	60	311	120	570	21:45			25	133	16	70	41	203
10:00			57		72		129		22:00			25		14		39	
10:15			54		64		118		22:15			12		16		28	
10:30			56		59		115		22:30			16		8		24	
10:45			66	233	43	238	109	471	22:45			16	69	6	44	22	113
11:00			73		56		129		23:00			19		13		32	
11:15			53		63		116		23:15			13		9		22	
11:30			66		86		152		23:30			7		8		15	
11:45			62	254	78	283	140	537	23:45			5	44	5	35	10	79
TOTALS				1730		2154		**3884**	**TOTALS**				3343		3103		**6446**
SPLIT %				44.5%		55.5%		**37.6%**	**SPLIT %**				51.9%		48.1%		**62.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,073	5,257	10,330

AM Peak Hour			07:15	07:30	**07:15**	**PM Peak Hour**			16:45	14:15	**17:00**
AM Pk Volume			385	554	**929**	**PM Pk Volume**			460	492	**908**
Pk Hr Factor			0.883	0.860	**0.860**	**Pk Hr Factor**			0.865	0.750	**0.822**
7 - 9 Volume	0	0	712	934	**1646**	**4 - 6 Volume**	0	0	821	823	**1644**
7 - 9 Peak Hour			07:15	07:30	**07:15**	**4 - 6 Peak Hour**			16:45	17:00	**17:00**
7 - 9 Pk Volume	0	0	385	554	**929**	**4 - 6 Pk Volume**	0	0	460	455	**908**
Pk Hr Factor	0.000	0.000	0.883	0.860	**0.860**	**Pk Hr Factor**	0.000	0.000	0.865	0.795	**0.822**

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Poinsettia Ln Bet. Ambrosia Ln & Cassia Rd

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,979	4,810	9,789

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	4		3		7		12:00	0	0	84		62		146	
00:15	0	0	5		1		6		12:15	0	0	63		45		108	
00:30	0	0	4		2		6		12:30	0	0	66		68		134	
00:45	0	0	2	15	1	7	3	22	12:45	0	0	75	288	74	249	149	537
01:00	0	0	4		0		4		13:00	0	0	89		62		151	
01:15	0	0	1		2		3		13:15	0	0	69		46		115	
01:30	0	0	5		0		5		13:30	0	0	64		56		120	
01:45	0	0	4	14	0	2	4	16	13:45	0	0	67	289	77	241	144	530
02:00	0	0	1		2		3		14:00	0	0	63		91		154	
02:15	0	0	1		1		2		14:15	0	0	146		108		254	
02:30	0	0	2		1		3		14:30	0	0	111		100		211	
02:45	0	0	0	4	3	7	3	11	14:45	0	0	118	438	100	399	218	837
03:00	0	0	3		1		4		15:00	0	0	108		97		205	
03:15	0	0	1		1		2		15:15	0	0	83		110		193	
03:30	0	0	0		0				15:30	0	0	81		127		208	
03:45	0	0	0	4	4	6	4	10	15:45	0	0	85	357	121	455	206	812
04:00	0	0	1		2		3		16:00	0	0	78		105		183	
04:15	0	0	1		3		4		16:15	0	0	76		60		136	
04:30	0	0	5		4		9		16:30	0	0	93		83		176	
04:45	0	0	9	16	11	20	20	36	16:45	0	0	88	335	98	346	186	681
05:00	0	0	10		12		22		17:00	0	0	85		136		221	
05:15	0	0	18		14		32		17:15	0	0	111		106		217	
05:30	0	0	16		11		27		17:30	0	0	113		100		213	
05:45	0	0	19	63	27	64	46	127	17:45	0	0	77	386	100	442	177	828
06:00	0	0	30		21		51		18:00	0	0	72		106		178	
06:15	0	0	34		27		61		18:15	0	0	74		96		170	
06:30	0	0	48		49		97		18:30	0	0	83		118		201	
06:45	0	0	78	190	53	150	131	340	18:45	0	0	81	310	73	393	154	703
07:00	0	0	57		57		114		19:00	0	0	110		80		190	
07:15	0	0	96		128		224		19:15	0	0	55		55		110	
07:30	0	0	139		126		265		19:30	0	0	48		60		108	
07:45	0	0	153	445	91	402	244	847	19:45	0	0	29	242	53	248	82	490
08:00	0	0	115		77		192		20:00	0	0	34		36		70	
08:15	0	0	107		95		202		20:15	0	0	61		35		96	
08:30	0	0	91		60		151		20:30	0	0	74		30		104	
08:45	0	0	88	401	114	346	202	747	20:45	0	0	46	215	43	144	89	359
09:00	0	0	102		72		174		21:00	0	0	25		24		49	
09:15	0	0	74		70		144		21:15	0	0	30		22		52	
09:30	0	0	70		83		153		21:30	0	0	21		22		43	
09:45	0	0	65	311	56	281	121	592	21:45	0	0	25	101	17	85	42	186
10:00	0	0	62		58		120		22:00	0	0	18		16		34	
10:15	0	0	62		53		115		22:15	0	0	14		16		30	
10:30	0	0	59		47		106		22:30	0	0	15		4		19	
10:45	0	0	49	232	36	194	85	426	22:45	0	0	12	59	6	42	18	101
11:00	0	0	70		62		132		23:00	0	0	9		7		16	
11:15	0	0	48		57		105		23:15	0	0	4		9		13	
11:30	0	0	60		65		125		23:30	0	0	6		8		14	
11:45	0	0	57	235	72	256	129	491	23:45	0	0	10	29	7	31	17	60
TOTALS				1930		1735		3665	TOTALS				3049		3075		6124
SPLIT %				52.7%		47.3%		37.4%	SPLIT %				49.8%		50.2%		62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,979	4,810	9,789

AM Peak Hour				07:30		07:15		07:15	PM Peak Hour				14:15		15:15			14:15
AM Pk Volume				514		422		925	PM Pk Volume				483		463			888
Pk Hr Factor				0.840		0.824		0.873	Pk Hr Factor				0.827		0.911			0.874
7 - 9 Volume	0	0		846		748		1594	4 - 6 Volume	0	0		721		788			1509
7 - 9 Peak Hour				07:30		07:15		07:15	4 - 6 Peak Hour				16:45		17:00			16:45
7 - 9 Pk Volume	0	0		514		422		925	4 - 6 Pk Volume	0	0		397		442			837
Pk Hr Factor	0.000	0.000		0.840		0.824		0.873	Pk Hr Factor	0.000	0.000		0.878		0.813			0.947

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Poinsettia Ln Bet. Ambrosia Ln & Cassia Rd

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,985	4,668	9,653

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	8		5		13		12:00	0	0	58		67		125	
00:15	0	0	10		4		14		12:15	0	0	82		59		141	
00:30	0	0	4		3		7		12:30	0	0	60		55		115	
00:45	0	0	0	22	3	15	3	37	12:45	0	0	62	262	77	258	139	520
01:00	0	0	1		3		4		13:00	0	0	88		57		145	
01:15	0	0	2		0		2		13:15	0	0	68		49		117	
01:30	0	0	0		2		2		13:30	0	0	75		62		137	
01:45	0	0	3	6	2	7	5	13	13:45	0	0	77	308	86	254	163	562
02:00	0	0	1		0		1		14:00	0	0	64		82		146	
02:15	0	0	1		0		1		14:15	0	0	142		100		242	
02:30	0	0	3		0		3		14:30	0	0	106		94		200	
02:45	0	0	1	6	1	1	2	7	14:45	0	0	126	438	99	375	225	813
03:00	0	0	2		1		3		15:00	0	0	94		82		176	
03:15	0	0	3		1		4		15:15	0	0	72		94		166	
03:30	0	0	1		2		3		15:30	0	0	81		81		162	
03:45	0	0	1	7	1	5	2	12	15:45	0	0	85	332	101	358	186	690
04:00	0	0	2		2		4		16:00	0	0	75		96		171	
04:15	0	0	4		3		7		16:15	0	0	81		101		182	
04:30	0	0	11		4		15		16:30	0	0	84		93		177	
04:45	0	0	6	23	8	17	14	40	16:45	0	0	100	340	112	402	212	742
05:00	0	0	6		12		18		17:00	0	0	83		109		192	
05:15	0	0	19		11		30		17:15	0	0	93		124		217	
05:30	0	0	21		12		33		17:30	0	0	100		109		209	
05:45	0	0	24	70	25	60	49	130	17:45	0	0	60	336	89	431	149	767
06:00	0	0	26		21		47		18:00	0	0	72		115		187	
06:15	0	0	40		37		77		18:15	0	0	84		94		178	
06:30	0	0	58		45		103		18:30	0	0	77		91		168	
06:45	0	0	78	202	60	163	138	365	18:45	0	0	88	321	68	368	156	689
07:00	0	0	61		66		127		19:00	0	0	66		62		128	
07:15	0	0	95		99		194		19:15	0	0	46		60		106	
07:30	0	0	159		101		260		19:30	0	0	54		49		103	
07:45	0	0	124	439	80	346	204	785	19:45	0	0	46	212	50	221	96	433
08:00	0	0	103		95		198		20:00	0	0	73		54		127	
08:15	0	0	125		77		202		20:15	0	0	66		65		131	
08:30	0	0	86		62		148		20:30	0	0	56		44		100	
08:45	0	0	112	426	102	336	214	762	20:45	0	0	37	232	35	198	72	430
09:00	0	0	111		69		180		21:00	0	0	35		34		69	
09:15	0	0	71		52		123		21:15	0	0	20		38		58	
09:30	0	0	78		55		133		21:30	0	0	28		21		49	
09:45	0	0	71	331	71	247	142	578	21:45	0	0	19	102	28	121	47	223
10:00	0	0	69		51		120		22:00	0	0	19		18		37	
10:15	0	0	49		56		105		22:15	0	0	15		11		26	
10:30	0	0	62		50		112		22:30	0	0	16		13		29	
10:45	0	0	62	242	42	199	104	441	22:45	0	0	17	67	2	44	19	111
11:00	0	0	61		57		118		23:00	0	0	10		8		18	
11:15	0	0	61		48		109		23:15	0	0	12		6		18	
11:30	0	0	55		59		114		23:30	0	0	10		6		16	
11:45	0	0	49	226	55	219	104	445	23:45	0	0	3	35	3	23	6	58
TOTALS				2000		1615		3615	TOTALS				2985		3053		6038
SPLIT %				55.3%		44.7%		37.4%	SPLIT %				49.4%		50.6%		62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,985	4,668	9,653

AM Peak Hour			07:30	07:15	07:30	PM Peak Hour			14:15	16:45	14:15
AM Pk Volume			511	375	864	PM Pk Volume			468	454	843
Pk Hr Factor			0.803	0.928	0.831	Pk Hr Factor			0.824	0.915	0.871
7 - 9 Volume	0	0	865	682	1547	4 - 6 Volume	0	0	676	833	1509
7 - 9 Peak Hour			07:30	07:15	07:30	4 - 6 Peak Hour			16:45	16:45	16:45
7 - 9 Pk Volume	0	0	511	375	864	4 - 6 Pk Volume	0	0	376	454	830
Pk Hr Factor	0.000	0.000	0.803	0.928	0.831	Pk Hr Factor	0.000	0.000	0.940	0.915	0.956

Prepared by National Data & Surveying Services

SPEED

Poinsettia Ln Bet. Ambrosia Ln & Cassia Rd

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_002

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	3	9	9	1	0	0	0	0	0	0	0	22
01:00	0	0	3	3	8	1	1	0	0	0	0	0	0	16
02:00	0	0	1	5	5	0	0	0	0	0	0	0	0	11
03:00	0	0	5	1	4	0	0	0	0	0	0	0	0	10
04:00	0	0	9	15	11	1	0	0	0	0	0	0	0	36
05:00	0	1	20	42	42	16	6	0	0	0	0	0	0	127
06:00	0	11	78	139	85	24	3	0	0	0	0	0	0	340
07:00	5	58	253	446	71	11	3	0	0	0	0	0	0	847
08:00	0	38	210	353	120	22	3	1	0	0	0	0	0	747
09:00	1	25	150	248	145	17	6	0	0	0	0	0	0	592
10:00	1	11	88	196	96	33	1	0	0	0	0	0	0	426
11:00	0	5	112	237	100	31	6	0	0	0	0	0	0	491
12:00 PM	1	14	111	250	128	32	1	0	0	0	0	0	0	537
13:00	0	17	141	222	117	27	5	1	0	0	0	0	0	530
14:00	2	32	281	405	103	14	0	0	0	0	0	0	0	837
15:00	4	43	222	356	155	29	3	0	0	0	0	0	0	812
16:00	3	18	142	275	192	46	4	1	0	0	0	0	0	681
17:00	2	37	196	383	176	31	3	0	0	0	0	0	0	828
18:00	1	33	179	324	141	23	2	0	0	0	0	0	0	703
19:00	0	22	128	220	100	16	4	0	0	0	0	0	0	490
20:00	0	14	77	149	91	26	1	1	0	0	0	0	0	359
21:00	0	6	29	65	71	13	2	0	0	0	0	0	0	186
22:00	1	1	18	37	34	9	1	0	0	0	0	0	0	101
23:00	0	3	8	22	18	9	0	0	0	0	0	0	0	60
Totals	21	389	2464	4402	2022	432	55	4						9789
% of Totals	0%	4%	25%	45%	21%	4%	1%	0%						100%

AM Volumes	7	149	932	1694	696	157	29	1	0	0	0	0	0	3665
% AM	0%	2%	10%	17%	7%	2%	0%	0%						37%
AM Peak Hour	07:00	07:00	07:00	07:00	09:00	10:00	05:00	08:00						07:00
Volume	5	58	253	446	145	33	6	1						847
PM Volumes	14	240	1532	2708	1326	275	26	3	0	0	0	0	0	6124
% PM	0%	2%	16%	28%	14%	3%	0%	0%						63%
PM Peak Hour	15:00	15:00	14:00	14:00	16:00	16:00	13:00	13:00						14:00
Volume	4	43	281	405	192	46	5	1						837

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1594 ⟷	16%	1067 ⟷	11%	1509 ⟷	15%	5619 ⟷	57%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Poinsettia Ln	Summary	22	27	27	33	35	9789

Prepared by National Data & Surveying Services

SPEED

Poinsettia Ln Bet. Ambrosia Ln & Cassia Rd

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_002

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	1	3	15	11	6	1	0	0	0	0	0	0	37
01:00	0	0	3	5	2	3	0	0	0	0	0	0	0	13
02:00	0	0	2	0	3	2	0	0	0	0	0	0	0	7
03:00	0	0	4	6	1	1	0	0	0	0	0	0	0	12
04:00	0	2	4	17	12	4	1	0	0	0	0	0	0	40
05:00	0	4	14	55	37	16	4	0	0	0	0	0	0	130
06:00	0	7	70	164	88	33	2	1	0	0	0	0	0	365
07:00	10	34	271	363	86	19	2	0	0	0	0	0	0	785
08:00	1	30	201	345	143	36	6	0	0	0	0	0	0	762
09:00	0	25	103	243	156	45	6	0	0	0	0	0	0	578
10:00	0	14	79	205	118	25	0	0	0	0	0	0	0	441
11:00	2	14	113	193	97	23	2	1	0	0	0	0	0	445
12:00 PM	1	17	113	245	110	30	4	0	0	0	0	0	0	520
13:00	1	18	138	264	114	23	4	0	0	0	0	0	0	562
14:00	3	34	276	377	105	15	3	0	0	0	0	0	0	813
15:00	2	16	171	336	138	25	2	0	0	0	0	0	0	690
16:00	2	45	180	309	171	31	3	1	0	0	0	0	0	742
17:00	9	35	192	365	138	24	4	0	0	0	0	0	0	767
18:00	3	30	186	331	120	18	1	0	0	0	0	0	0	689
19:00	1	17	85	204	93	27	6	0	0	0	0	0	0	433
20:00	2	13	114	194	87	19	1	0	0	0	0	0	0	430
21:00	0	1	48	86	66	17	4	1	0	0	0	0	0	223
22:00	0	4	12	47	33	14	1	0	0	0	0	0	0	111
23:00	0	2	5	24	16	9	2	0	0	0	0	0	0	58
Totals	37	363	2387	4393	1945	465	59	4						9653
% of Totals	0%	4%	25%	46%	20%	5%	1%	0%						100%

AM Volumes	13	131	867	1611	754	213	24	2	0	0	0	0	0	3615
% AM	0%	1%	9%	17%	8%	2%	0%	0%						37%
AM Peak Hour	07:00	07:00	07:00	07:00	09:00	09:00	08:00	06:00						07:00
Volume	10	34	271	363	156	45	6	1						785
PM Volumes	24	232	1520	2782	1191	252	35	2	0	0	0	0	0	6038
% PM	0%	2%	16%	29%	12%	3%	0%	0%						63%
PM Peak Hour	17:00	16:00	14:00	14:00	16:00	16:00	19:00	16:00						14:00
Volume	9	45	276	377	171	31	6	1						813

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1547	16%	1082	11%	1509	16%	5515	57%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Poinsettia Ln	Summary	22	27	27	33	35	9653

Prepared by NDS/ATD

VOLUME

Poinsettia Ln Bet. El Camino Real & Cassia Rd

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4193_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	392	459	851

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		1		1		12:00			4		6		10	
00:15			1		0		1		12:15			5		9		14	
00:30			0		0		0		12:30			5		1		6	
00:45			0	1	0	1	0	2	12:45			4	18	5	21	9	39
01:00			0		1		1		13:00			3		7		10	
01:15			0		0		0		13:15			9		8		17	
01:30			0		0		0		13:30			3		3		6	
01:45			0		0	1	0	1	13:45			7	22	6	24	13	46
02:00			0		0		0		14:00			11		6		17	
02:15			0		0		0		14:15			16		17		33	
02:30			0		0		0		14:30			27		31		58	
02:45			0		0		0		14:45			5	59	15	69	20	128
03:00			0		0		0		15:00			8		10		18	
03:15			0		0		0		15:15			7		11		18	
03:30			1		1		2		15:30			6		15		21	
03:45			0	1	1	2	1	3	15:45			8	29	10	46	18	75
04:00			1		0		1		16:00			8		7		15	
04:15			0		0		0		16:15			5		11		16	
04:30			0		1		1		16:30			10		11		21	
04:45			2	3	0	1	2	4	16:45			10	33	9	38	19	71
05:00			1		0		1		17:00			7		12		19	
05:15			3		0		3		17:15			8		7		15	
05:30			1		0		1		17:30			7		6		13	
05:45			0	5	0		0	5	17:45			6	28	10	35	16	63
06:00			2		0		2		18:00			4		10		14	
06:15			1		0		1		18:15			0		3		3	
06:30			4		2		6		18:30			4		8		12	
06:45			14	21	1	3	15	24	18:45			3	11	6	27	9	38
07:00			12		3		15		19:00			3		5		8	
07:15			7		20		27		19:15			4		7		11	
07:30			11		9		20		19:30			4		8		12	
07:45			8	38	6	38	14	76	19:45			1	12	4	24	5	36
08:00			8		8		16		20:00			3		4		7	
08:15			4		5		9		20:15			2		6		8	
08:30			11		4		15		20:30			1		5		6	
08:45			7	30	3	20	10	50	20:45			3	9	6	21	9	30
09:00			11		8		19		21:00			0		4		4	
09:15			3		3		6		21:15			1		5		6	
09:30			8		5		13		21:30			2		3		5	
09:45			4	26	8	24	12	50	21:45			1	4	3	15	4	19
10:00			7		5		12		22:00			1		0		1	
10:15			4		2		6		22:15			0		2		2	
10:30			2		9		11		22:30			1		0		1	
10:45			4	17	4	20	8	37	22:45			0	2	0	2	0	4
11:00			2		5		7		23:00			1		3		4	
11:15			3		4		7		23:15			0		2		2	
11:30			10		5		15		23:30			2		1		3	
11:45			5	20	6	20	11	40	23:45			0	3	1	7	1	10
TOTALS				162		130		**292**	**TOTALS**				230		329		**559**
SPLIT %				55.5%		44.5%		**34.3%**	**SPLIT %**				41.1%		58.9%		**65.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	392	459	851

AM Peak Hour			06:45	07:15	**06:45**	**PM Peak Hour**			13:45	14:15	**14:15**
AM Pk Volume			44	43	**77**	**PM Pk Volume**			61	73	**129**
Pk Hr Factor			0.786	0.538	**0.713**	**Pk Hr Factor**			0.565	0.589	**0.556**
7 - 9 Volume	0	0	68	58	**126**	**4 - 6 Volume**	0	0	61	73	**134**
7 - 9 Peak Hour			07:00	07:15	**07:15**	**4 - 6 Peak Hour**			16:30	16:15	**16:15**
7 - 9 Pk Volume	0	0	38	43	**77**	**4 - 6 Pk Volume**	0	0	35	43	**75**
Pk Hr Factor	0.000	0.000	0.792	0.538	**0.713**	**Pk Hr Factor**	0.000	0.000	0.875	0.896	**0.893**

Prepared by NDS/ATD

VOLUME

El Camino Real Bet. Cassia Rd & Poinsettia Ln

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4193_004

DAILY TOTALS	NB	SB	EB	WB	Total
	16,228	17,008	0	0	33,236

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	19		12				31		12:00	233		239				472	
00:15	6		14				20		12:15	220		251				471	
00:30	8		10				18		12:30	255		297				552	
00:45	4	37	8	44			12	81	12:45	297	1005	257	1044			554	2049
01:00	8		6				14		13:00	258		258				516	
01:15	8		2				10		13:15	259		204				463	
01:30	4		4				8		13:30	242		253				495	
01:45	3	23	0	12			3	35	13:45	258	1017	218	933			476	1950
02:00	6		4				10		14:00	271		293				564	
02:15	4		6				10		14:15	173		264				437	
02:30	1		1				2		14:30	175		283				458	
02:45	2	13	4	15			6	28	14:45	351	970	336	1176			687	2146
03:00	5		4				9		15:00	317		294				611	
03:15	4		5				9		15:15	339		284				623	
03:30	15		6				21		15:30	342		323				665	
03:45	8	32	9	24			17	56	15:45	348	1346	302	1203			650	2549
04:00	12		11				23		16:00	346		381				727	
04:15	15		13				28		16:15	365		410				775	
04:30	20		17				37		16:30	347		409				756	
04:45	40	87	40	81			80	168	16:45	318	1376	423	1623			741	2999
05:00	41		29				70		17:00	306		496				802	
05:15	51		33				84		17:15	327		458				785	
05:30	63		45				108		17:30	275		451				726	
05:45	99	254	74	181			173	435	17:45	256	1164	427	1832			683	2996
06:00	114		77				191		18:00	255		300				555	
06:15	124		113				237		18:15	252		311				563	
06:30	189		151				340		18:30	209		294				503	
06:45	214	641	251	592			465	1233	18:45	186	902	227	1132			413	2034
07:00	241		324				565		19:00	171		195				366	
07:15	278		315				593		19:15	173		162				335	
07:30	309		447				756		19:30	147		141				288	
07:45	439	1267	364	1450			803	2717	19:45	108	599	126	624			234	1223
08:00	433		367				800		20:00	121		116				237	
08:15	396		332				728		20:15	98		117				215	
08:30	352		295				647		20:30	110		111				221	
08:45	380	1561	284	1278			664	2839	20:45	88	417	105	449			193	866
09:00	298		292				590		21:00	82		75				157	
09:15	290		244				534		21:15	73		77				150	
09:30	290		208				498		21:30	76		65				141	
09:45	246	1124	249	993			495	2117	21:45	60	291	59	276			119	567
10:00	238		227				465		22:00	62		43				105	
10:15	194		202				396		22:15	45		32				77	
10:30	194		224				418		22:30	52		47				99	
10:45	236	862	206	859			442	1721	22:45	29	188	30	152			59	340
11:00	211		251				462		23:00	41		28				69	
11:15	218		230				448		23:15	39		17				56	
11:30	251		211				462		23:30	21		29				50	
11:45	251	931	248	940			499	1871	23:45	20	121	21	95			41	216
TOTALS		6832		6469				13301	TOTALS		9396		10539				19935
SPLIT %		51.4%		48.6%				40.0%	SPLIT %		47.1%		52.9%				60.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	16,228	17,008	0	0	33,236

AM Peak Hour	07:45	07:30			07:30	PM Peak Hour	15:45	17:00			16:30
AM Pk Volume	1620	1510			3087	PM Pk Volume	1406	1832			3084
Pk Hr Factor	0.923	0.845			0.961	Pk Hr Factor	0.963	0.923			0.961
7 - 9 Volume	2828	2728	0	0	5556	4 - 6 Volume	2540	3455	0	0	5995
7 - 9 Peak Hour	07:45	07:30			07:30	4 - 6 Peak Hour	16:00	17:00			16:30
7 - 9 Pk Volume	1620	1510	0	0	3087	4 - 6 Pk Volume	1376	1832	0	0	3084
Pk Hr Factor	0.923	0.845	0.000	0.000	0.961	Pk Hr Factor	0.942	0.923	0.000	0.000	0.961

Prepared by NDS/ATD

VOLUME

El Camino Real Bet. Poinsettia Ln & Aviara Pkwy

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4193_005

DAILY TOTALS	NB	SB	EB	WB	Total
	19,255	19,392	0	0	38,647

AM Period	NB		SB		EB		WB		TOTAL	
00:00	21		15						36	
00:15	8		11						19	
00:30	7		10						17	
00:45	6	42	7	43					13	85
01:00	13		5						18	
01:15	10		3						13	
01:30	6		5						11	
01:45	5	34	1	14					6	48
02:00	7		3						10	
02:15	4		7						11	
02:30	1		1						2	
02:45	3	15	5	16					8	31
03:00	3		4						7	
03:15	6		7						13	
03:30	15		10						25	
03:45	8	32	12	33					20	65
04:00	13		17						30	
04:15	16		17						33	
04:30	20		22						42	
04:45	39	88	56	112					95	200
05:00	41		40						81	
05:15	49		49						98	
05:30	75		65						140	
05:45	90	255	111	265					201	520
06:00	118		112						230	
06:15	134		174						308	
06:30	207		216						423	
06:45	220	679	342	844					562	1523
07:00	266		401						667	
07:15	311		438						749	
07:30	416		523						939	
07:45	509	1502	440	1802					949	3304
08:00	458		407						865	
08:15	399		427						826	
08:30	385		364						749	
08:45	390	1632	364	1562					754	3194
09:00	331		286						617	
09:15	300		297						597	
09:30	296		275						571	
09:45	278	1205	276	1134					554	2339
10:00	237		267						504	
10:15	206		264						470	
10:30	236		257						493	
10:45	243	922	235	1023					478	1945
11:00	247		270						517	
11:15	239		254						493	
11:30	272		257						529	
11:45	261	1019	283	1064					544	2083
TOTALS		7425		7912						**15337**
SPLIT %		48.4%		51.6%						**39.7%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	265		259						524	
12:15	249		305						554	
12:30	296		339						635	
12:45	348	1158	280	1183					628	2341
13:00	301		265						566	
13:15	312		257						569	
13:30	288		278						566	
13:45	336	1237	248	1048					584	2285
14:00	353		341						694	
14:15	355		293						648	
14:30	370		307						677	
14:45	404	1482	374	1315					778	2797
15:00	375		350						725	
15:15	372		341						713	
15:30	414		382						796	
15:45	402	1563	340	1413					742	2976
16:00	386		406						792	
16:15	459		418						877	
16:30	420		441						861	
16:45	396	1661	458	1723					854	3384
17:00	434		494						928	
17:15	361		453						814	
17:30	385		515						900	
17:45	352	1532	415	1877					767	3409
18:00	314		353						667	
18:15	331		310						641	
18:30	294		289						583	
18:45	242	1181	242	1194					484	2375
19:00	214		222						436	
19:15	199		183						382	
19:30	175		166						341	
19:45	141	729	158	729					299	1458
20:00	160		112						272	
20:15	133		118						251	
20:30	135		115						250	
20:45	119	547	110	455					229	1002
21:00	119		79						198	
21:15	95		85						180	
21:30	87		61						148	
21:45	76	377	61	286					137	663
22:00	72		41						113	
22:15	61		38						99	
22:30	52		47						99	
22:45	35	220	37	163					72	383
23:00	51		29						80	
23:15	44		20						64	
23:30	26		28						54	
23:45	22	143	17	94					39	237
TOTALS		11830		11480						**23310**
SPLIT %		50.8%		49.2%						**60.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	19,255	19,392	0	0	38,647

AM Peak Hour	07:30	07:15			**07:30**	**PM Peak Hour**	16:15	16:45			**16:15**
AM Pk Volume	1782	1808			**3579**	**PM Pk Volume**	1709	1920			**3520**
Pk Hr Factor	0.875	0.864			**0.943**	**Pk Hr Factor**	0.931	0.932			**0.948**
7 - 9 Volume	3134	3364	0	0	**6498**	**4 - 6 Volume**	3193	3600	0	0	**6793**
7 - 9 Peak Hour	07:30	07:15			**07:30**	**4 - 6 Peak Hour**	16:15	16:45			**16:15**
7 - 9 Pk Volume	1782	1808	0	0	**3579**	**4 - 6 Pk Volume**	1709	1920	0	0	**3520**
Pk Hr Factor	0.875	0.864	0.000	0.000	**0.943**	**Pk Hr Factor**	0.931	0.932	0.000	0.000	**0.948**

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Cassia Rd Bet. Poinsettia Ln & El Camino Real

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,620	4,324	8,944

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0		5		6		11	
00:15	0		0		3		1		4	
00:30	0		0		4		2		6	
00:45	0		0		1	13	1	10	2	23
01:00	0		0		4		1		5	
01:15	0		0		1		1		2	
01:30	0		0		4		0		4	
01:45	0		0		4	13	1	3	5	16
02:00	0		0		1		1		2	
02:15	0		0		1		2		3	
02:30	0		0		2		0		2	
02:45	0		0		0	4	3	6	3	10
03:00	0		0		2		1		3	
03:15	0		0		3		1		4	
03:30	0		0		0		0			
03:45	0		0		0	5	3	5	3	10
04:00	0		0		1		2		3	
04:15	0		0		1		1		2	
04:30	0		0		6		4		10	
04:45	0		0		11	19	12	19	23	38
05:00	0		0		12		11		23	
05:15	0		0		18		11		29	
05:30	0		0		16		12		28	
05:45	0		0		22	68	23	57	45	125
06:00	0		0		29		15		44	
06:15	0		0		39		26		65	
06:30	0		0		53		34		87	
06:45	0		0		81	202	46	121	127	323
07:00	0		0		60		59		119	
07:15	0		0		90		75		165	
07:30	0		0		150		89		239	
07:45	0		0		131	431	71	294	202	725
08:00	0		0		116		87		203	
08:15	0		0		118		84		202	
08:30	0		0		93		50		143	
08:45	0		0		111	438	76	297	187	735
09:00	0		0		107		56		163	
09:15	0		0		77		68		145	
09:30	0		0		72		70		142	
09:45	0		0		71	327	58	252	129	579
10:00	0		0		61		54		115	
10:15	0		0		61		42		103	
10:30	0		0		53		46		99	
10:45	0		0		60	235	39	181	99	416
11:00	0		0		61		58		119	
11:15	0		0		52		61		113	
11:30	0		0		53		59		112	
11:45	0		0		56	222	69	247	125	469
TOTALS						1977		1492		**3469**
SPLIT %						57.0%		43.0%		**38.8%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	0		0		79		54		133	
12:15	0		0		60		38		98	
12:30	0		0		67		68		135	
12:45	0		0		69	275	78	238	147	513
13:00	0		0		81		53		134	
13:15	0		0		69		47		116	
13:30	0		0		60		53		113	
13:45	0		0		70	280	72	225	142	505
14:00	0		0		55		83		138	
14:15	0		0		126		104		230	
14:30	0		0		108		93		201	
14:45	0		0		96	385	94	374	190	759
15:00	0		0		85		78		163	
15:15	0		0		66		90		156	
15:30	0		0		90		88		178	
15:45	0		0		101	342	85	341	186	683
16:00	0		0		72		100		172	
16:15	0		0		58		89		147	
16:30	0		0		84		82		166	
16:45	0		0		74	288	112	383	186	671
17:00	0		0		77		117		194	
17:15	0		0		94		131		225	
17:30	0		0		111		89		200	
17:45	0		0		69	351	119	456	188	807
18:00	0		0		45		103		148	
18:15	0		0		53		83		136	
18:30	0		0		63		75		138	
18:45	0		0		66	227	84	345	150	572
19:00	0		0		73		46		119	
19:15	0		0		49		64		113	
19:30	0		0		31		61		92	
19:45	0		0		26	179	37	208	63	387
20:00	0		0		35		36		71	
20:15	0		0		41		40		81	
20:30	0		0		32		33		65	
20:45	0		0		26	134	35	144	61	278
21:00	0		0		19		26		45	
21:15	0		0		17		17		34	
21:30	0		0		21		11		32	
21:45	0		0		19	76	13	67	32	143
22:00	0		0		38		13		51	
22:15	0		0		19		10		29	
22:30	0		0		12		8		20	
22:45	0		0		9	78	6	37	15	115
23:00	0		0		7		3		10	
23:15	0		0		5		2		7	
23:30	0		0		7		3		10	
23:45	0		0		9	28	6	14	15	42
TOTALS						2643		2832		**5475**
SPLIT %						48.3%		51.7%		**61.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,620	4,324	8,944

AM Peak Hour			07:30	07:30	**07:30**
AM Pk Volume			515	331	**846**
Pk Hr Factor			0.858	0.930	**0.885**
7 - 9 Volume	0	0	869	591	**1460**
7 - 9 Peak Hour			07:30	07:30	**07:30**
7 - 9 Pk Volume	0	0	515	331	**846**
Pk Hr Factor	0.000	0.000	0.858	0.930	**0.885**

PM Peak Hour			14:15	17:00	**17:00**
PM Pk Volume			415	456	**807**
Pk Hr Factor			0.823	0.870	**0.897**
4 - 6 Volume	0	0	639	839	**1478**
4 - 6 Peak Hour			16:45	17:00	**17:00**
4 - 6 Pk Volume	0	0	356	456	**807**
Pk Hr Factor	0.000	0.000	0.802	0.870	**0.897**

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Cassia Rd Bet. Poinsettia Ln & El Camino Real

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,812	4,478	9,290

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0		9		7		16	
00:15	0		0		10		3		13	
00:30	0		0		4		4		8	
00:45	0		0		0	23	3	17	3	40
01:00	0		0		1		2		3	
01:15	0		0		2		0		2	
01:30	0		0		0		3		3	
01:45	0		0		2	5	2	7	4	12
02:00	0		0		1		0		1	
02:15	0		0		1		0		1	
02:30	0		0		4		0		4	
02:45	0		0		1	7	1	1	2	8
03:00	0		0		2		1		3	
03:15	0		0		2		1		3	
03:30	0		0		3		2		5	
03:45	0		0		2	9	3	7	5	16
04:00	0		0		2		0		2	
04:15	0		0		5		2		7	
04:30	0		0		12		4		16	
04:45	0		0		7	26	10	16	17	42
05:00	0		0		7		8		15	
05:15	0		0		18		11		29	
05:30	0		0		23		12		35	
05:45	0		0		21	69	22	53	43	122
06:00	0		0		31		16		47	
06:15	0		0		45		30		75	
06:30	0		0		56		38		94	
06:45	0		0		78	210	51	135	129	345
07:00	0		0		72		62		134	
07:15	0		0		94		82		176	
07:30	0		0		141		79		220	
07:45	0		0		124	431	62	285	186	716
08:00	0		0		98		82		180	
08:15	0		0		133		70		203	
08:30	0		0		94		53		147	
08:45	0		0		108	433	94	299	202	732
09:00	0		0		111		54		165	
09:15	0		0		72		43		115	
09:30	0		0		74		52		126	
09:45	0		0		73	330	68	217	141	547
10:00	0		0		73		46		119	
10:15	0		0		54		51		105	
10:30	0		0		67		54		121	
10:45	0		0		63	257	42	193	105	450
11:00	0		0		52		59		111	
11:15	0		0		61		50		111	
11:30	0		0		61		54		115	
11:45	0		0		48	222	59	222	107	444
TOTALS						2022		1452		3474
SPLIT %						58.2%		41.8%		37.4%

PM Period	NB		SB		EB		WB		TOTAL	
12:00	0		0		65		65		130	
12:15	0		0		72		58		130	
12:30	0		0		63		57		120	
12:45	0		0		60	260	77	257	137	517
13:00	0		0		85		60		145	
13:15	0		0		60		49		109	
13:30	0		0		80		70		150	
13:45	0		0		81	306	79	258	160	564
14:00	0		0		61		82		143	
14:15	0		0		127		97		224	
14:30	0		0		106		90		196	
14:45	0		0		114	408	100	369	214	777
15:00	0		0		84		74		158	
15:15	0		0		70		101		171	
15:30	0		0		67		79		146	
15:45	0		0		77	298	88	342	165	640
16:00	0		0		73		92		165	
16:15	0		0		83		95		178	
16:30	0		0		75		90		165	
16:45	0		0		78	309	103	380	181	689
17:00	0		0		94		117		211	
17:15	0		0		78		116		194	
17:30	0		0		88		102		190	
17:45	0		0		65	325	90	425	155	750
18:00	0		0		53		117		170	
18:15	0		0		85		96		181	
18:30	0		0		68		100		168	
18:45	0		0		84	290	69	382	153	672
19:00	0		0		50		55		105	
19:15	0		0		48		62		110	
19:30	0		0		52		49		101	
19:45	0		0		39	189	53	219	92	408
20:00	0		0		64		63		127	
20:15	0		0		65		59		124	
20:30	0		0		50		43		93	
20:45	0		0		37	216	44	209	81	425
21:00	0		0		33		33		66	
21:15	0		0		18		41		59	
21:30	0		0		27		23		50	
21:45	0		0		21	99	25	122	46	221
22:00	0		0		16		13		29	
22:15	0		0		11		12		23	
22:30	0		0		14		11		25	
22:45	0		0		15	56	2	38	17	94
23:00	0		0		11		8		19	
23:15	0		0		10		6		16	
23:30	0		0		10		6		16	
23:45	0		0		3	34	5	25	8	59
TOTALS						2790		3026		5816
SPLIT %						48.0%		52.0%		62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,812	4,478	9,290

AM Peak Hour			07:30	07:15	07:30
AM Pk Volume			496	305	789
Pk Hr Factor			0.879	0.930	0.897
7 - 9 Volume	0	0	864	584	1448
7 - 9 Peak Hour			07:30	07:15	07:30
7 - 9 Pk Volume	0	0	496	305	789
Pk Hr Factor	0.000	0.000	0.879	0.930	0.897

PM Peak Hour			14:15	16:45	14:15
PM Pk Volume			431	438	792
Pk Hr Factor			0.848	0.936	0.884
4 - 6 Volume	0	0	634	805	1439
4 - 6 Peak Hour			16:45	16:45	16:45
4 - 6 Pk Volume	0	0	338	438	776
Pk Hr Factor	0.000	0.000	0.899	0.936	0.919

SPEED

Cassia Rd Bet. Poinsettia Ln & El Camino Real

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_006

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	10	10	3	0	0	0	0	0	0	0	0	23
01:00	0	1	7	7	1	0	0	0	0	0	0	0	0	16
02:00	0	1	5	3	0	1	0	0	0	0	0	0	0	10
03:00	0	3	4	1	2	0	0	0	0	0	0	0	0	10
04:00	0	3	11	22	2	0	0	0	0	0	0	0	0	38
05:00	0	5	35	67	17	1	0	0	0	0	0	0	0	125
06:00	0	14	128	162	15	2	1	1	0	0	0	0	0	323
07:00	3	34	383	283	19	1	1	0	1	0	0	0	0	725
08:00	6	29	355	324	18	1	1	0	1	0	0	0	0	735
09:00	2	12	272	273	17	1	1	0	1	0	0	0	0	579
10:00	1	11	185	192	25	1	1	0	0	0	0	0	0	416
11:00	1	21	215	218	10	2	0	2	0	0	0	0	0	469
12:00 PM	4	21	214	248	20	4	1	1	0	0	0	0	0	513
13:00	2	17	237	221	23	3	1	1	0	0	0	0	0	505
14:00	4	39	331	351	27	2	3	1	1	0	0	0	0	759
15:00	0	8	304	341	28	2	0	0	0	0	0	0	0	683
16:00	1	22	308	310	26	3	1	0	0	0	0	0	0	671
17:00	6	35	352	376	32	1	2	3	0	0	0	0	0	807
18:00	0	20	253	279	18	1	0	1	0	0	0	0	0	572
19:00	0	7	167	185	22	3	1	1	1	0	0	0	0	387
20:00	0	12	127	131	8	0	0	0	0	0	0	0	0	278
21:00	1	8	54	72	7	1	0	0	0	0	0	0	0	143
22:00	0	7	53	49	6	0	0	0	0	0	0	0	0	115
23:00	0	6	21	15	0	0	0	0	0	0	0	0	0	42
Totals	31	336	4031	4140	346	30	14	11	5					8944
% of Totals	0%	4%	45%	46%	4%	0%	0%	0%	0%					100%

AM Volumes	13	134	1610	1562	129	10	5	3	3	0	0	0	0	3469
% AM	0%	1%	18%	17%	1%	0%	0%	0%	0%					39%
AM Peak Hour	08:00	07:00	07:00	08:00	10:00	06:00	06:00	11:00	07:00					08:00
Volume	6	34	383	324	25	2	1	2	1					735
PM Volumes	18	202	2421	2578	217	20	9	8	2	0	0	0	0	5475
% PM	0%	2%	27%	29%	2%	0%	0%	0%	0%					61%
PM Peak Hour	17:00	14:00	17:00	17:00	17:00	12:00	14:00	17:00	14:00					17:00
Volume	6	39	352	376	32	4	3	3	1					807

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1460	16%	1018	11%	1478	17%	4988	56%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Cassia Rd	Summary	21	25	25	29	30	8944

Prepared by National Data & Surveying Services

SPEED

Cassia Rd Bet. Poinsettia Ln & El Camino Real

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_006

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	17	17	5	0	0	1	0	0	0	0	0	40
01:00	0	1	3	5	2	0	1	0	0	0	0	0	0	12
02:00	0	2	2	4	0	0	0	0	0	0	0	0	0	8
03:00	0	2	9	5	0	0	0	0	0	0	0	0	0	16
04:00	0	2	15	24	1	0	0	0	0	0	0	0	0	42
05:00	0	0	31	72	18	1	0	0	0	0	0	0	0	122
06:00	0	9	133	178	22	1	1	1	0	0	0	0	0	345
07:00	27	45	318	302	21	2	1	0	0	0	0	0	0	716
08:00	0	23	329	356	22	2	0	0	0	0	0	0	0	732
09:00	0	12	254	259	19	2	0	1	0	0	0	0	0	547
10:00	0	18	190	223	17	0	1	1	0	0	0	0	0	450
11:00	6	15	160	235	22	1	3	1	1	0	0	0	0	444
12:00 PM	0	15	221	256	22	1	0	2	0	0	0	0	0	517
13:00	0	17	245	276	25	0	1	0	0	0	0	0	0	564
14:00	0	40	322	387	22	5	0	1	0	0	0	0	0	777
15:00	0	8	258	339	31	2	2	0	0	0	0	0	0	640
16:00	2	17	262	378	26	0	2	1	1	0	0	0	0	689
17:00	0	9	286	421	27	2	4	0	1	0	0	0	0	750
18:00	0	12	246	393	18	2	1	0	0	0	0	0	0	672
19:00	0	9	147	235	16	1	0	0	0	0	0	0	0	408
20:00	0	10	203	196	15	1	0	0	0	0	0	0	0	425
21:00	0	16	79	111	14	1	0	0	0	0	0	0	0	221
22:00	0	4	32	47	10	1	0	0	0	0	0	0	0	94
23:00	1	4	22	27	5	0	0	0	0	0	0	0	0	59
Totals	36	290	3784	4746	380	25	17	9	3					9290
% of Totals	0%	3%	41%	51%	4%	0%	0%	0%	0%					100%

AM Volumes	33	129	1461	1680	149	9	7	5	1	0	0	0	0	3474
% AM	0%	1%	16%	18%	2%	0%	0%	0%	0%					37%
AM Peak Hour	07:00	07:00	08:00	08:00	06:00	07:00	11:00		11:00					08:00
Volume	27	45	329	356	22	2	3	1	1					732
PM Volumes	3	161	2323	3066	231	16	10	4	2	0	0	0	0	5816
% PM	0%	2%	25%	33%	2%	0%	0%	0%	0%					63%
PM Peak Hour	16:00	14:00	14:00	17:00	15:00	14:00	17:00	12:00	16:00					14:00
Volume	2	40	322	421	31	5	4	2	1					777

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1448 ⟷	16%	1081 ⟷	12%	1439 ⟷	15%	5322 ⟷	57%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Cassia Rd	Summary	21	26	25	29	30	9290

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Ambrosia Ln Bet. Poinsettia Ln & Aviara Pkwy

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_007

DAILY TOTALS	NB	SB	EB	WB	Total
	1,825	1,463	0	0	3,288

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		1		0	0	1		12:00	9		16		0	0	25	
00:15	0		0		0	0			12:15	19		10		0	0	29	
00:30	0		0		0	0			12:30	13		12		0	0	25	
00:45	0		0	1	0	0		1	12:45	15	56	17	55	0	0	32	111
01:00	0		0		0	0			13:00	13		30		0	0	43	
01:15	0		0		0	0			13:15	29		23		0	0	52	
01:30	0		0		0	0			13:30	23		28		0	0	51	
01:45	0		0		0	0			13:45	19	84	54	135	0	0	73	219
02:00	0		0		0	0			14:00	35		57		0	0	92	
02:15	0		0		0	0			14:15	145		51		0	0	196	
02:30	0		1		0	0	1		14:30	104		55		0	0	159	
02:45	0		0	1	0	0		1	14:45	68	352	34	197	0	0	102	549
03:00	0		1		0	0	1		15:00	50		20		0	0	70	
03:15	0		0		0	0			15:15	42		18		0	0	60	
03:30	0		0		0	0			15:30	24		19		0	0	43	
03:45	0		0	1	0	0		1	15:45	29	145	22	79	0	0	51	224
04:00	1		0		0	0	1		16:00	26		16		0	0	42	
04:15	0		0		0	0			16:15	17		18		0	0	35	
04:30	0		0		0	0			16:30	27		17		0	0	44	
04:45	1	2	1	1	0	0	2	3	16:45	21	91	18	69	0	0	39	160
05:00	0		0		0	0			17:00	20		27		0	0	47	
05:15	2		0		0	0	2		17:15	33		18		0	0	51	
05:30	0		4		0	0	4		17:30	31		32		0	0	63	
05:45	3	5	8	12	0	0	11	17	17:45	19	103	20	97	0	0	39	200
06:00	4		5		0	0	9		18:00	18		13		0	0	31	
06:15	4		3		0	0	7		18:15	19		15		0	0	34	
06:30	3		17		0	0	20		18:30	31		28		0	0	59	
06:45	8	19	12	37	0	0	20	56	18:45	36	104	12	68	0	0	48	172
07:00	37		40		0	0	77		19:00	25		13		0	0	38	
07:15	133		119		0	0	252		19:15	21		5		0	0	26	
07:30	155		108		0	0	263		19:30	14		10		0	0	24	
07:45	85	410	48	315	0	0	133	725	19:45	8	68	5	33	0	0	13	101
08:00	78		75		0	0	153		20:00	7		2		0	0	9	
08:15	58		13		0	0	71		20:15	8		6		0	0	14	
08:30	15		12		0	0	27		20:30	8		22		0	0	30	
08:45	21	172	10	110	0	0	31	282	20:45	5	28	6	36	0	0	11	64
09:00	11		14		0	0	25		21:00	3		3		0	0	6	
09:15	10		20		0	0	30		21:15	1		10		0	0	11	
09:30	8		16		0	0	24		21:30	4		4		0	0	8	
09:45	10	39	18	68	0	0	28	107	21:45	3	11	2	19	0	0	5	30
10:00	23		14		0	0	37		22:00	3		2		0	0	5	
10:15	14		19		0	0	33		22:15	3		2		0	0	5	
10:30	10		11		0	0	21		22:30	1		0		0	0	1	
10:45	8	55	19	63	0	0	27	118	22:45	2	9	2	6	0	0	4	15
11:00	10		10		0	0	20		23:00	4		5		0	0	9	
11:15	14		18		0	0	32		23:15	0		0		0	0		
11:30	28		14		0	0	42		23:30	0		0		0	0		
11:45	16	68	10	52	0	0	26	120	23:45	0	4	3	8	0	0	3	12
TOTALS		770		661				1431	TOTALS		1055		802				1857
SPLIT %		53.8%		46.2%				43.5%	SPLIT %		56.8%		43.2%				56.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,825	1,463	0	0	3,288

AM Peak Hour	07:15	07:15						07:15	PM Peak Hour	14:15	13:45						14:00
AM Pk Volume	451	350						801	PM Pk Volume	367	217						549
Pk Hr Factor	0.727	0.735						0.761	Pk Hr Factor	0.633	0.952						0.700
7 - 9 Volume	582	425	0	0				1007	4 - 6 Volume	194	166	0	0				360
7 - 9 Peak Hour	07:15	07:15						07:15	4 - 6 Peak Hour	16:45	17:00						16:45
7 - 9 Pk Volume	451	350	0	0				801	4 - 6 Pk Volume	105	97	0	0				200
Pk Hr Factor	0.727	0.735	0.000	0.000				0.761	Pk Hr Factor	0.795	0.758	0.000	0.000				0.794

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Ambrosia Ln Bet. Poinsettia Ln & Aviara Pkwy

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_007

DAILY TOTALS	NB	SB	EB	WB	Total
	1,856	1,465	0	0	3,321

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	1		2		0	0	3		12:00	16		16		0	0	32	
00:15	1		1		0	0	2		12:15	12		11		0	0	23	
00:30	0		0		0	0			12:30	17		13		0	0	30	
00:45	1	3	0	3	0	0	1	6	12:45	16	61	10	50	0	0	26	111
01:00	0		0		0	0			13:00	16		22		0	0	38	
01:15	2		0		0	0	2		13:15	42		18		0	0	60	
01:30	1		0		0	0	1		13:30	23		32		0	0	55	
01:45	0	3	2	2	0	0	2	5	13:45	14	95	55	127	0	0	69	222
02:00	0		0		0	0			14:00	30		65		0	0	95	
02:15	0		0		0	0			14:15	161		60		0	0	221	
02:30	0		1		0	0	1		14:30	100		48		0	0	148	
02:45	0		1	2	0	0	1	2	14:45	72	363	29	202	0	0	101	565
03:00	0		0		0	0			15:00	51		10		0	0	61	
03:15	0		0		0	0			15:15	28		16		0	0	44	
03:30	0		0		0	0			15:30	28		18		0	0	46	
03:45	0		0		0	0			15:45	28	135	18	62	0	0	46	197
04:00	1		0		0	0	1		16:00	33		31		0	0	64	
04:15	0		0		0	0			16:15	33		22		0	0	55	
04:30	2		0		0	0	2		16:30	23		23		0	0	46	
04:45	0	3	1	1	0	0	1	4	16:45	22	111	18	94	0	0	40	205
05:00	1		0		0	0	1		17:00	25		30		0	0	55	
05:15	0		0		0	0			17:15	32		33		0	0	65	
05:30	2		6		0	0	8		17:30	33		12		0	0	45	
05:45	0	3	5	11	0	0	5	14	17:45	22	112	16	91	0	0	38	203
06:00	2		2		0	0	4		18:00	16		17		0	0	33	
06:15	2		8		0	0	10		18:15	28		19		0	0	47	
06:30	2		12		0	0	14		18:30	26		16		0	0	42	
06:45	12	18	27	49	0	0	39	67	18:45	12	82	22	74	0	0	34	156
07:00	25		29		0	0	54		19:00	22		18		0	0	40	
07:15	92		135		0	0	227		19:15	27		7		0	0	34	
07:30	149		98		0	0	247		19:30	13		11		0	0	24	
07:45	97	363	57	319	0	0	154	682	19:45	15	77	5	41	0	0	20	118
08:00	86		66		0	0	152		20:00	17		17		0	0	34	
08:15	50		24		0	0	74		20:15	10		6		0	0	16	
08:30	19		14		0	0	33		20:30	12		15		0	0	27	
08:45	16	171	10	114	0	0	26	285	20:45	10	49	5	43	0	0	15	92
09:00	13		16		0	0	29		21:00	7		3		0	0	10	
09:15	10		11		0	0	21		21:15	4		3		0	0	7	
09:30	11		10		0	0	21		21:30	5		2		0	0	7	
09:45	14	48	20	57	0	0	34	105	21:45	2	18	3	11	0	0	5	29
10:00	18		12		0	0	30		22:00	4		4		0	0	8	
10:15	11		10		0	0	21		22:15	1		0		0	0	1	
10:30	15		14		0	0	29		22:30	2		2		0	0	4	
10:45	11	55	15	51	0	0	26	106	22:45	6	13	2	8	0	0	8	21
11:00	17		15		0	0	32		23:00	2		0		0	0	2	
11:15	15		13		0	0	28		23:15	1		2		0	0	3	
11:30	21		10		0	0	31		23:30	0		1		0	0	1	
11:45	16	69	11	49	0	0	27	118	23:45	1	4	1	4	0	0	2	8
TOTALS		736		658				**1394**	**TOTALS**		1120		807				**1927**
SPLIT %		52.8%		47.2%				**42.0%**	**SPLIT %**		58.1%		41.9%				**58.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	1,856	1,465	0	0	3,321

AM Peak Hour	07:15	07:15						**07:15**	**PM Peak Hour**	14:15	13:45							**14:00**
AM Pk Volume	424	356						**780**	**PM Pk Volume**	384	228							**565**
Pk Hr Factor	0.711	0.659						**0.789**	**Pk Hr Factor**	0.596	0.877							**0.639**
7 - 9 Volume	534	433	0	0				**967**	**4 - 6 Volume**	223	185	0	0					**408**
7 - 9 Peak Hour	07:15	07:15						**07:15**	**4 - 6 Peak Hour**	16:45	16:30							**16:30**
7 - 9 Pk Volume	424	356	0	0				**780**	**4 - 6 Pk Volume**	112	104	0	0					**206**
Pk Hr Factor	0.711	0.659	0.000	0.000				**0.789**	**Pk Hr Factor**	0.848	0.788	0.000	0.000					**0.792**

Prepared by National Data & Surveying Services

SPEED

Ambrosia Ln Bet. Poinsettia Ln & Aviara Pkwy

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_007

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
05:00	0	1	2	6	6	1	1	0	0	0	0	0	0	17
06:00	0	0	1	21	29	3	2	0	0	0	0	0	0	56
07:00	0	3	106	443	159	13	0	1	0	0	0	0	0	725
08:00	0	1	21	141	106	13	0	0	0	0	0	0	0	282
09:00	0	0	14	50	38	5	0	0	0	0	0	0	0	107
10:00	0	0	13	55	45	4	0	1	0	0	0	0	0	118
11:00	0	0	12	53	47	7	1	0	0	0	0	0	0	120
12:00 PM	0	0	4	50	45	10	2	0	0	0	0	0	0	111
13:00	0	4	18	111	80	6	0	0	0	0	0	0	0	219
14:00	2	27	138	262	108	10	1	1	0	0	0	0	0	549
15:00	0	3	6	99	98	18	0	0	0	0	0	0	0	224
16:00	0	2	9	64	69	16	0	0	0	0	0	0	0	160
17:00	0	0	6	81	96	13	3	1	0	0	0	0	0	200
18:00	0	1	12	71	76	12	0	0	0	0	0	0	0	172
19:00	0	0	7	42	47	4	1	0	0	0	0	0	0	101
20:00	0	0	8	20	31	5	0	0	0	0	0	0	0	64
21:00	0	1	6	9	10	3	0	1	0	0	0	0	0	30
22:00	0	0	3	6	6	0	0	0	0	0	0	0	0	15
23:00	0	0	0	5	4	3	0	0	0	0	0	0	0	12
Totals	2	43	387	1594	1100	146	11	5						3288
% of Totals	0%	1%	12%	48%	33%	4%	0%	0%						100%

AM Volumes	0	5	170	774	430	46	4	2	0	0	0	0	0	1431
% AM		0%	5%	24%	13%	1%	0%	0%						44%
AM Peak Hour		07:00	07:00	07:00	07:00	07:00	06:00	07:00						07:00
Volume		3	106	443	159	13	2	1						725
PM Volumes	2	38	217	820	670	100	7	3	0	0	0	0	0	1857
% PM	0%	1%	7%	25%	20%	3%	0%	0%						56%
PM Peak Hour	14:00	14:00	14:00	14:00	14:00	15:00	17:00	14:00						14:00
Volume	2	27	138	262	108	18	3	1						549

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1007 ⟷	31%	330 ⟷	10%	360 ⟷	11%	1591 ⟷	48%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Ambrosia Ln	Summary	25	29	29	33	35	3288

Prepared by National Data & Surveying Services

SPEED

Ambrosia Ln Bet. Poinsettia Ln & Aviara Pkwy

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_007

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	1	2	2	1	0	0	0	0	0	0	0	6
01:00	0	0	1	1	3	0	0	0	0	0	0	0	0	5
02:00	0	0	1	0	1	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	3	0	1	0	0	0	0	0	0	0	4
05:00	0	0	2	4	7	1	0	0	0	0	0	0	0	14
06:00	0	0	4	32	29	1	1	0	0	0	0	0	0	67
07:00	1	1	115	404	144	12	5	0	0	0	0	0	0	682
08:00	0	2	15	142	111	14	1	0	0	0	0	0	0	285
09:00	0	0	15	44	39	4	3	0	0	0	0	0	0	105
10:00	0	0	14	45	46	1	0	0	0	0	0	0	0	106
11:00	0	0	17	50	47	3	1	0	0	0	0	0	0	118
12:00 PM	0	1	7	42	54	6	1	0	0	0	0	0	0	111
13:00	0	1	15	104	84	17	1	0	0	0	0	0	0	222
14:00	8	17	145	258	124	11	2	0	0	0	0	0	0	565
15:00	0	0	9	76	94	16	2	0	0	0	0	0	0	197
16:00	0	1	6	68	109	20	1	0	0	0	0	0	0	205
17:00	0	1	10	79	100	11	2	0	0	0	0	0	0	203
18:00	0	1	7	67	67	12	2	0	0	0	0	0	0	156
19:00	0	1	7	57	46	7	0	0	0	0	0	0	0	118
20:00	0	1	9	38	39	4	1	0	0	0	0	0	0	92
21:00	0	0	4	14	7	3	1	0	0	0	0	0	0	29
22:00	0	0	1	10	7	3	0	0	0	0	0	0	0	21
23:00	0	1	0	3	4	0	0	0	0	0	0	0	0	8
Totals	9	28	405	1543	1164	148	24							3321
% of Totals	0%	1%	12%	46%	35%	4%	1%							100%

AM Volumes	1	3	185	727	429	38	11	0	0	0	0	0	0	1394
% AM	0%	0%	6%	22%	13%	1%	0%							42%
AM Peak Hour	07:00	08:00	07:00	07:00	07:00	08:00	07:00							07:00
Volume	1	2	115	404	144	14	5							682
PM Volumes	8	25	220	816	735	110	13	0	0	0	0	0	0	1927
% PM	0%	1%	7%	25%	22%	3%	0%							58%
PM Peak Hour	14:00	14:00	14:00	14:00	14:00	16:00	14:00							14:00
Volume	8	17	145	258	124	20	2							565

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	967 ⟷	29%	333 ⟷	10%	408 ⟷	12%	1613 ⟷	49%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Ambrosia Ln	Summary	25	29	29	34	35	3321

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Mimosa Dr Bet. Oriole Ct & Aviara Pkwy

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_008

DAILY TOTALS	NB	SB	EB	WB	Total
	309	356	0	0	665

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0			12:00	3		6		0	0	9	
00:15	0		0		0	0			12:15	4		3		0	0	7	
00:30	0		0		0	0			12:30	4		3		0	0	7	
00:45	0		0		0	0			12:45	3	14	4	16	0	0	7	30
01:00	0		0		0	0			13:00	6		10		0	0	16	
01:15	0		0		0	0			13:15	5		5		0	0	10	
01:30	0		0		0	0			13:30	6		3		0	0	9	
01:45	0		0		0	0			13:45	3	20	6	24	0	0	9	44
02:00	1		0		0	0	1		14:00	4		8		0	0	12	
02:15	0		0		0	0			14:15	11		9		0	0	20	
02:30	0		0		0	0			14:30	10		18		0	0	28	
02:45	0	1	0		0	0		1	14:45	14	39	9	44	0	0	23	83
03:00	1		0		0	0	1		15:00	6		11		0	0	17	
03:15	0		0		0	0			15:15	6		8		0	0	14	
03:30	0		0		0	0			15:30	2		5		0	0	7	
03:45	0	1	0		0	0		1	15:45	7	21	6	30	0	0	13	51
04:00	1		1		0	0	2		16:00	5		0		0	0	5	
04:15	0		0		0	0			16:15	7		8		0	0	15	
04:30	0		0		0	0			16:30	4		7		0	0	11	
04:45	1	2	0	1	0	0	1	3	16:45	8	24	4	19	0	0	12	43
05:00	0		2		0	0	2		17:00	4		5		0	0	9	
05:15	1		1		0	0	2		17:15	5		5		0	0	10	
05:30	0		0		0	0			17:30	8		6		0	0	14	
05:45	0	1	1	4	0	0	1	5	17:45	6	23	6	22	0	0	12	45
06:00	2		3		0	0	5		18:00	4		5		0	0	9	
06:15	2		4		0	0	6		18:15	6		3		0	0	9	
06:30	1		8		0	0	9		18:30	4		3		0	0	7	
06:45	2	7	4	19	0	0	6	26	18:45	4	18	3	14	0	0	7	32
07:00	1		5		0	0	6		19:00	6		1		0	0	7	
07:15	6		20		0	0	26		19:15	1		3		0	0	4	
07:30	6		16		0	0	22		19:30	2		2		0	0	4	
07:45	9	22	10	51	0	0	19	73	19:45	2	11	6	12	0	0	8	23
08:00	13		14		0	0	27		20:00	3		0		0	0	3	
08:15	0		3		0	0	3		20:15	1		2		0	0	3	
08:30	10		3		0	0	13		20:30	4		5		0	0	9	
08:45	3	26	4	24	0	0	7	50	20:45	1	9	1	8	0	0	2	17
09:00	7		3		0	0	10		21:00	0		2		0	0	2	
09:15	4		6		0	0	10		21:15	1		1		0	0	2	
09:30	5		4		0	0	9		21:30	1		0		0	0	1	
09:45	8	24	6	19	0	0	14	43	21:45	2	4	0	3	0	0	2	7
10:00	9		11		0	0	20		22:00	0		0		0	0		
10:15	7		4		0	0	11		22:15	1		1		0	0	2	
10:30	3		6		0	0	9		22:30	0		0		0	0		
10:45	3	22	5	26	0	0	8	48	22:45	1	2	0	1	0	0	1	3
11:00	4		6		0	0	10		23:00	0		0		0	0		
11:15	5		5		0	0	10		23:15	0		1		0	0	1	
11:30	4		6		0	0	10		23:30	1		0		0	0	1	
11:45	4	17	1	18	0	0	5	35	23:45	0	1	0	1	0	0		2
TOTALS		123		162				285	TOTALS		186		194				380
SPLIT %		43.2%		56.8%				42.9%	SPLIT %		48.9%		51.1%				57.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	309	356	0	0	665

AM Peak Hour	07:15	07:15			07:15	PM Peak Hour	14:15	14:15			14:15
AM Pk Volume	34	60			94	PM Pk Volume	41	47			88
Pk Hr Factor	0.654	0.750			0.870	Pk Hr Factor	0.732	0.653			0.786
7 - 9 Volume	48	75	0	0	123	4 - 6 Volume	47	41	0	0	88
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	16:45	16:15			16:15
7 - 9 Pk Volume	34	60	0	0	94	4 - 6 Pk Volume	25	24	0	0	47
Pk Hr Factor	0.654	0.750	0.000	0.000	0.870	Pk Hr Factor	0.781	0.750	0.000	0.000	0.783

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Mimosa Dr Bet. Oriole Ct & Aviara Pkwy

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_008

DAILY TOTALS	NB	SB	EB	WB	Total
	320	359	0	0	679

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0			12:00	6		8		0	0	14	
00:15	1		0		0	0	1		12:15	6		3		0	0	9	
00:30	0		0		0	0			12:30	3		7		0	0	10	
00:45	0	1	0		0	0		1	12:45	8	23	9	27	0	0	17	50
01:00	0		0		0	0			13:00	7		4		0	0	11	
01:15	0		0		0	0			13:15	6		6		0	0	12	
01:30	0		0		0	0			13:30	7		7		0	0	14	
01:45	0		0		0	0			13:45	4	24	10	27	0	0	14	51
02:00	0		0		0	0			14:00	2		9		0	0	11	
02:15	0		0		0	0			14:15	14		12		0	0	26	
02:30	0		0		0	0			14:30	12		15		0	0	27	
02:45	0		0		0	0			14:45	10	38	4	40	0	0	14	78
03:00	0		0		0	0			15:00	6		10		0	0	16	
03:15	0		0		0	0			15:15	5		5		0	0	10	
03:30	0		0		0	0			15:30	6		5		0	0	11	
03:45	1	1	0		0	0	1	1	15:45	5	22	5	25	0	0	10	47
04:00	0		1		0	0	1		16:00	8		7		0	0	15	
04:15	1		1		0	0	2		16:15	3		6		0	0	9	
04:30	0		0		0	0			16:30	8		4		0	0	12	
04:45	1	2	0	2	0	0	1	4	16:45	6	25	7	24	0	0	13	49
05:00	0		0		0	0			17:00	4		12		0	0	16	
05:15	2		1		0	0	3		17:15	6		10		0	0	16	
05:30	0		1		0	0	1		17:30	12		6		0	0	18	
05:45	0	2	1	3	0	0	1	5	17:45	4	26	6	34	0	0	10	60
06:00	0		2		0	0	2		18:00	8		4		0	0	12	
06:15	0		6		0	0	6		18:15	13		3		0	0	16	
06:30	1		1		0	0	2		18:30	3		4		0	0	7	
06:45	1	2	9	18	0	0	10	20	18:45	4	28	3	14	0	0	7	42
07:00	0		4		0	0	4		19:00	6		3		0	0	9	
07:15	5		24		0	0	29		19:15	3		4		0	0	7	
07:30	5		13		0	0	18		19:30	2		2		0	0	4	
07:45	8	18	10	51	0	0	18	69	19:45	3	14	2	11	0	0	5	25
08:00	8		9		0	0	17		20:00	5		1		0	0	6	
08:15	5		2		0	0	7		20:15	2		4		0	0	6	
08:30	4		3		0	0	7		20:30	6		3		0	0	9	
08:45	5	22	3	17	0	0	8	39	20:45	0	13	1	9	0	0	1	22
09:00	3		1		0	0	4		21:00	4		0		0	0	4	
09:15	5		3		0	0	8		21:15	2		5		0	0	7	
09:30	6		6		0	0	12		21:30	1		0		0	0	1	
09:45	4	18	8	18	0	0	12	36	21:45	2	9	2	7	0	0	4	16
10:00	3		2		0	0	5		22:00	1		1		0	0	2	
10:15	3		2		0	0	5		22:15	3		0		0	0	3	
10:30	1		3		0	0	4		22:30	1		0		0	0	1	
10:45	3	10	4	11	0	0	7	21	22:45	1	6	0	1	0	0	1	7
11:00	1		1		0	0	2		23:00	0		0		0	0		
11:15	3		5		0	0	8		23:15	0		0		0	0		
11:30	5		6		0	0	11		23:30	1		1		0	0	2	
11:45	6	15	7	19	0	0	13	34	23:45	0	1	0	1	0	0		2
TOTALS		91		139				230	TOTALS		229		220				449
SPLIT %		39.6%		60.4%				33.9%	SPLIT %		51.0%		49.0%				66.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	320	359	0	0	679

AM Peak Hour	07:15	07:15			07:15	PM Peak Hour	14:15	13:45			14:15
AM Pk Volume	26	56			82	PM Pk Volume	42	46			83
Pk Hr Factor	0.813	0.583			0.707	Pk Hr Factor	0.750	0.767			0.769
7 - 9 Volume	40	68	0	0	108	4 - 6 Volume	51	58	0	0	109
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	16:45	16:45			16:45
7 - 9 Pk Volume	26	56	0	0	82	4 - 6 Pk Volume	28	35	0	0	63
Pk Hr Factor	0.813	0.583	0.000	0.000	0.707	Pk Hr Factor	0.583	0.729	0.000	0.000	0.875

Prepared by National Data & Surveying Services

SPEED

Mimosa Dr Bet. Oriole Ct & Aviara Pkwy

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_008

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	2	0	0	0	1	0	0	0	0	0	0	0	0	3
05:00	1	1	2	1	0	0	0	0	0	0	0	0	0	5
06:00	3	14	6	2	1	0	0	0	0	0	0	0	0	26
07:00	6	17	38	12	0	0	0	0	0	0	0	0	0	73
08:00	3	18	21	8	0	0	0	0	0	0	0	0	0	50
09:00	6	18	17	2	0	0	0	0	0	0	0	0	0	43
10:00	7	20	18	2	1	0	0	0	0	0	0	0	0	48
11:00	6	11	16	2	0	0	0	0	0	0	0	0	0	35
12:00 PM	4	7	16	3	0	0	0	0	0	0	0	0	0	30
13:00	6	17	18	3	0	0	0	0	0	0	0	0	0	44
14:00	5	20	48	9	1	0	0	0	0	0	0	0	0	83
15:00	3	16	25	7	0	0	0	0	0	0	0	0	0	51
16:00	3	16	18	4	2	0	0	0	0	0	0	0	0	43
17:00	3	11	27	4	0	0	0	0	0	0	0	0	0	45
18:00	0	11	17	4	0	0	0	0	0	0	0	0	0	32
19:00	0	5	15	3	0	0	0	0	0	0	0	0	0	23
20:00	2	8	6	1	0	0	0	0	0	0	0	0	0	17
21:00	0	1	5	0	1	0	0	0	0	0	0	0	0	7
22:00	0	1	0	2	0	0	0	0	0	0	0	0	0	3
23:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Totals	60	213	316	69	7									665
% of Totals	9%	32%	48%	10%	1%									100%

AM Volumes	34	99	120	29	3	0	0	0	0	0	0	0	0	285
% AM	5%	15%	18%	4%	0%									43%
AM Peak Hour	10:00	10:00	07:00	07:00	04:00									07:00
Volume	7	20	38	12	1									73
PM Volumes	26	114	196	40	4	0	0	0	0	0	0	0	0	380
% PM	4%	17%	29%	6%	1%									57%
PM Peak Hour	13:00	14:00	14:00	14:00	16:00									14:00
Volume	6	20	48	9	2									83

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	123		18%	74		11%	88		13%	380		57%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Mimosa Dr	Summary	16	21	20	25	28	665

Prepared by National Data & Surveying Services

SPEED

Mimosa Dr Bet. Oriole Ct & Aviara Pkwy

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_008

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	2	1	0	1	0	0	0	0	0	0	0	0	0	4
05:00	2	2	0	1	0	0	0	0	0	0	0	0	0	5
06:00	1	5	10	4	0	0	0	0	0	0	0	0	0	20
07:00	2	19	38	10	0	0	0	0	0	0	0	0	0	69
08:00	1	11	19	7	1	0	0	0	0	0	0	0	0	39
09:00	2	11	15	8	0	0	0	0	0	0	0	0	0	36
10:00	1	8	9	3	0	0	0	0	0	0	0	0	0	21
11:00	3	9	17	5	0	0	0	0	0	0	0	0	0	34
12:00 PM	8	23	14	5	0	0	0	0	0	0	0	0	0	50
13:00	4	25	18	4	0	0	0	0	0	0	0	0	0	51
14:00	4	32	34	7	1	0	0	0	0	0	0	0	0	78
15:00	2	17	24	4	0	0	0	0	0	0	0	0	0	47
16:00	1	12	32	4	0	0	0	0	0	0	0	0	0	49
17:00	1	20	31	7	1	0	0	0	0	0	0	0	0	60
18:00	3	19	16	4	0	0	0	0	0	0	0	0	0	42
19:00	1	8	13	3	0	0	0	0	0	0	0	0	0	25
20:00	2	8	11	1	0	0	0	0	0	0	0	0	0	22
21:00	0	7	9	0	0	0	0	0	0	0	0	0	0	16
22:00	0	2	3	2	0	0	0	0	0	0	0	0	0	7
23:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Totals	40	240	316	80	3									679
% of Totals	6%	35%	47%	12%	0%									100%

AM Volumes	14	66	110	39	1	0	0	0	0	0	0	0	0	230
% AM	2%	10%	16%	6%	0%									34%
AM Peak Hour	11:00	07:00	07:00	07:00	08:00									07:00
Volume	3	19	38	10	1									69
PM Volumes	26	174	206	41	2	0	0	0	0	0	0	0	0	449
% PM	4%	26%	30%	6%	0%									66%
PM Peak Hour	12:00	14:00	14:00	14:00	14:00									14:00
Volume	8	32	34	7	1									78

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	108		16%	101		15%	109		16%	361		53%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Mimosa Dr	Summary	16	21	21	25	28	679

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Dove Ln Bet. Moorhen Pl & El Camino Real

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	186	167	353

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				12:00	0	0	2		6		8	
00:15	0	0	0		0				12:15	0	0	3		0		3	
00:30	0	0	0		0				12:30	0	0	2		3		5	
00:45	0	0	0		0				12:45	0	0	1	8	3	12	4	20
01:00	0	0	0		0				13:00	0	0	4		0		4	
01:15	0	0	0		0				13:15	0	0	6		4		10	
01:30	0	0	0		0				13:30	0	0	1		3		4	
01:45	0	0	0		0				13:45	0	0	1	12	2	9	3	21
02:00	0	0	1		0		1		14:00	0	0	1		3		4	
02:15	0	0	0		0				14:15	0	0	5		4		9	
02:30	0	0	0		0				14:30	0	0	1		3		4	
02:45	0	0	0	1	0			1	14:45	0	0	6	13	5	15	11	28
03:00	0	0	0		0				15:00	0	0	2		5		7	
03:15	0	0	1		0		1		15:15	0	0	3		4		7	
03:30	0	0	0		0				15:30	0	0	0		3		3	
03:45	0	0	0	1	0			1	15:45	0	0	2	7	2	14	4	21
04:00	0	0	1		1		2		16:00	0	0	7		7		14	
04:15	0	0	0		0				16:15	0	0	2		3		5	
04:30	0	0	0		0				16:30	0	0	2		3		5	
04:45	0	0	0	1	0	1		2	16:45	0	0	4	15	4	17	8	32
05:00	0	0	1		0		1		17:00	0	0	1		2		3	
05:15	0	0	0		0				17:15	0	0	2		6		8	
05:30	0	0	0		0				17:30	0	0	4		2		6	
05:45	0	0	1	2	0		1	2	17:45	0	0	7	14	3	13	10	27
06:00	0	0	3		1		4		18:00	0	0	3		3		6	
06:15	0	0	2		1		3		18:15	0	0	2		4		6	
06:30	0	0	3		2		5		18:30	0	0	2		3		5	
06:45	0	0	3	11	2	6	5	17	18:45	0	0	1	8	4	14	5	22
07:00	0	0	1		1		2		19:00	0	0	2		2		4	
07:15	0	0	4		3		7		19:15	0	0	2		4		6	
07:30	0	0	5		1		6		19:30	0	0	0		3		3	
07:45	0	0	5	15	0	5	5	20	19:45	0	0	0	4	3	12	3	16
08:00	0	0	8		3		11		20:00	0	0	1		3		4	
08:15	0	0	1		0		1		20:15	0	0	4		0		4	
08:30	0	0	5		3		8		20:30	0	0	0		0			
08:45	0	0	4	18	1	7	5	25	20:45	0	0	0	5	2	5	2	10
09:00	0	0	4		2		6		21:00	0	0	2		0		2	
09:15	0	0	1		1		2		21:15	0	0	1		1		2	
09:30	0	0	8		1		9		21:30	0	0	0		1		1	
09:45	0	0	3	16	3	7	6	23	21:45	0	0	0	3	1	3	1	6
10:00	0	0	5		5		10		22:00	0	0	0		0			
10:15	0	0	2		1		3		22:15	0	0	0		0			
10:30	0	0	2		0		2		22:30	0	0	0		1		1	
10:45	0	0	3	12	6	12	9	24	22:45	0	0	0		1	2	1	2
11:00	0	0	3		4		7		23:00	0	0	0		0			
11:15	0	0	2		1		3		23:15	0	0	2		2		4	
11:30	0	0	6		4		10		23:30	0	0	2		1		3	
11:45	0	0	5	16	1	10	6	26	23:45	0	0	0	4	0	3		7
TOTALS				93		48		141	TOTALS				93		119		212
SPLIT %				66.0%		34.0%		39.9%	SPLIT %				43.9%		56.1%		60.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	186	167	353

AM Peak Hour			07:15	10:45	07:15	PM Peak Hour			17:15	14:15	16:00
AM Pk Volume			22	15	29	PM Pk Volume			16	17	32
Pk Hr Factor			0.688	0.625	0.659	Pk Hr Factor			0.571	0.850	0.571
7 - 9 Volume	0	0	33	12	45	4 - 6 Volume	0	0	29	30	59
7 - 9 Peak Hour			07:15	07:15	07:15	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	22	7	29	4 - 6 Pk Volume	0	0	15	17	32
Pk Hr Factor	0.000	0.000	0.688	0.583	0.659	Pk Hr Factor	0.000	0.000	0.536	0.607	0.571

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Dove Ln Bet. Moorhen Pl & El Camino Real

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	188	180	368

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0		0		1		1	
00:15	0		0		1		0		1	
00:30	0		0		1		0		1	
00:45	0		0		0	2	0	1		3
01:00	0		0		0		0			
01:15	0		0		0		0			
01:30	0		0		0		0			
01:45	0		0		0		0			
02:00	0		0		0		0			
02:15	0		0		0		0			
02:30	0		0		0		0			
02:45	0		0		0		0			
03:00	0		0		0		0			
03:15	0		0		0		0			
03:30	0		0		0		0			
03:45	0		0		0		0			
04:00	0		0		0		0			
04:15	0		0		1		1		2	
04:30	0		0		0		0			
04:45	0		0		0	1	0	1		2
05:00	0		0		0		0			
05:15	0		0		0		1		1	
05:30	0		0		1		0		1	
05:45	0		0		1	2	0	1	1	3
06:00	0		0		0		1		1	
06:15	0		0		2		2		4	
06:30	0		0		3		1		4	
06:45	0		0		2	7	1	5	3	12
07:00	0		0		2		2		4	
07:15	0		0		3		4		7	
07:30	0		0		0		3		3	
07:45	0		0		4	9	2	11	6	20
08:00	0		0		7		3		10	
08:15	0		0		0		1		1	
08:30	0		0		3		2		5	
08:45	0		0		3	13	1	7	4	20
09:00	0		0		8		1		9	
09:15	0		0		2		1		3	
09:30	0		0		4		2		6	
09:45	0		0		8	22	3	7	11	29
10:00	0		0		3		2		5	
10:15	0		0		4		1		5	
10:30	0		0		1		1		2	
10:45	0		0		3	11	4	8	7	19
11:00	0		0		3		1		4	
11:15	0		0		2		2		4	
11:30	0		0		0		2		2	
11:45	0		0		1	6	2	7	3	13
TOTALS						73		48		**121**
SPLIT %						60.3%		39.7%		**32.9%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	0		0		2		2		4	
12:15	0		0		5		2		7	
12:30	0		0		1		1		2	
12:45	0		0		4	12	5	10	9	22
13:00	0		0		7		1		8	
13:15	0		0		3		3		6	
13:30	0		0		2		5		7	
13:45	0		0		7	19	5	14	12	33
14:00	0		0		3		2		5	
14:15	0		0		4		1		5	
14:30	0		0		0		0			
14:45	0		0		6	13	7	10	13	23
15:00	0		0		4		8		12	
15:15	0		0		4		1		5	
15:30	0		0		2		2		4	
15:45	0		0		4	14	3	14	7	28
16:00	0		0		3		5		8	
16:15	0		0		2		3		5	
16:30	0		0		3		5		8	
16:45	0		0		3	11	5	18	8	29
17:00	0		0		4		8		12	
17:15	0		0		4		5		9	
17:30	0		0		8		5		13	
17:45	0		0		5	21	2	20	7	41
18:00	0		0		2		5		7	
18:15	0		0		3		3		6	
18:30	0		0		2		5		7	
18:45	0		0		3	10	6	19	9	29
19:00	0		0		2		1		3	
19:15	0		0		0		5		5	
19:30	0		0		1		2		3	
19:45	0		0		2	5	1	9	3	14
20:00	0		0		0		3		3	
20:15	0		0		0		2		2	
20:30	0		0		2		4		6	
20:45	0		0		1	3	1	10	2	13
21:00	0		0		1		4		5	
21:15	0		0		1		0		1	
21:30	0		0		1		0		1	
21:45	0		0		1	4	1	5	2	9
22:00	0		0		0		0			
22:15	0		0		0		1		1	
22:30	0		0		1		1		2	
22:45	0		0		0	1	0	2		3
23:00	0		0		0		0			
23:15	0		0		0		0			
23:30	0		0		1		1		2	
23:45	0		0		1	2	0	1	1	3
TOTALS						115		132		**247**
SPLIT %						46.6%		53.4%		**67.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	188	180	368

AM Peak Hour			09:00	07:15	**09:00**
AM Pk Volume			22	12	**29**
Pk Hr Factor			0.688	0.750	**0.659**
7 - 9 Volume	0	0	22	18	**40**
7 - 9 Peak Hour			07:15	07:15	**07:15**
7 - 9 Pk Volume	0	0	14	12	**26**
Pk Hr Factor	0.000	0.000	0.500	0.750	**0.650**

PM Peak Hour			17:00	16:30	**16:45**
PM Pk Volume			21	23	**42**
Pk Hr Factor			0.656	0.719	**0.808**
4 - 6 Volume	0	0	32	38	**70**
4 - 6 Peak Hour			17:00	16:30	**16:45**
4 - 6 Pk Volume	0	0	21	23	**42**
Pk Hr Factor	0.000	0.000	0.656	0.719	**0.808**

SPEED

Dove Ln Bet. Moorhen Pl & El Camino Real

Day: Tuesday
Date: 5/22/2018

City: Carlsbad
Project #: CA18_4192_009

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	0	0	0	2	0	0	0	0	0	0	0	0	2
06:00	0	1	5	9	1	1	0	0	0	0	0	0	0	17
07:00	0	1	5	8	6	0	0	0	0	0	0	0	0	20
08:00	0	6	6	7	5	1	0	0	0	0	0	0	0	25
09:00	2	1	8	11	1	0	0	0	0	0	0	0	0	23
10:00	1	4	8	9	2	0	0	0	0	0	0	0	0	24
11:00	1	4	8	10	3	0	0	0	0	0	0	0	0	26
12:00 PM	0	2	10	7	1	0	0	0	0	0	0	0	0	20
13:00	1	2	10	6	2	0	0	0	0	0	0	0	0	21
14:00	1	2	9	13	3	0	0	0	0	0	0	0	0	28
15:00	0	1	7	12	1	0	0	0	0	0	0	0	0	21
16:00	2	1	14	12	3	0	0	0	0	0	0	0	0	32
17:00	0	2	12	11	2	0	0	0	0	0	0	0	0	27
18:00	0	3	6	11	2	0	0	0	0	0	0	0	0	22
19:00	1	2	9	4	0	0	0	0	0	0	0	0	0	16
20:00	0	2	3	5	0	0	0	0	0	0	0	0	0	10
21:00	0	1	2	1	1	1	0	0	0	0	0	0	0	6
22:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
23:00	0	1	4	2	0	0	0	0	0	0	0	0	0	7
Totals	10	38	126	141	35	3								353
% of Totals	3%	11%	36%	40%	10%	1%								100%

AM Volumes	5	19	40	55	20	2	0	0	0	0	0	0	0	141
% AM	1%	5%	11%	16%	6%	1%								40%
AM Peak Hour	09:00	08:00	09:00	09:00	07:00	06:00								11:00
Volume	2	6	8	11	6	1								26
PM Volumes	5	19	86	86	15	1	0	0	0	0	0	0	0	212
% PM	1%	5%	24%	24%	4%	0%								60%
PM Peak Hour	16:00	18:00	16:00	14:00	14:00	21:00								16:00
Volume	2	3	14	13	3	1								32

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	45	⟷	13%	41	⟷	12%	59	⟷	17%	208	⟷	59%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Dove Ln	Summary	20	25	25	29	33	353

Prepared by National Data & Surveying Services

SPEED

Dove Ln Bet. Moorhen Pl & El Camino Real

Day: Wednesday
Date: 5/23/2018

City: Carlsbad
Project #: CA18_4192_009

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	3
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	1	0	2	0	0	0	0	0	0	0	0	0	3
06:00	1	0	7	2	2	0	0	0	0	0	0	0	0	12
07:00	0	0	11	6	3	0	0	0	0	0	0	0	0	20
08:00	0	3	4	12	1	0	0	0	0	0	0	0	0	20
09:00	1	1	8	13	6	0	0	0	0	0	0	0	0	29
10:00	0	1	5	9	4	0	0	0	0	0	0	0	0	19
11:00	0	0	3	10	0	0	0	0	0	0	0	0	0	13
12:00 PM	2	1	8	8	2	1	0	0	0	0	0	0	0	22
13:00	3	7	5	15	3	0	0	0	0	0	0	0	0	33
14:00	0	4	4	12	3	0	0	0	0	0	0	0	0	23
15:00	0	1	10	10	6	1	0	0	0	0	0	0	0	28
16:00	0	6	11	12	0	0	0	0	0	0	0	0	0	29
17:00	0	2	15	20	4	0	0	0	0	0	0	0	0	41
18:00	0	1	11	15	2	0	0	0	0	0	0	0	0	29
19:00	1	2	7	3	1	0	0	0	0	0	0	0	0	14
20:00	0	4	3	5	1	0	0	0	0	0	0	0	0	13
21:00	0	1	4	2	2	0	0	0	0	0	0	0	0	9
22:00	0	0	3	0	0	0	0	0	0	0	0	0	0	3
23:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
Totals	8	38	120	159	41	2								368
% of Totals	2%	10%	33%	43%	11%	1%								100%

AM Volumes	2	8	38	57	16	0	0	0	0	0	0	0	0	121
% AM	1%	2%	10%	15%	4%									33%
AM Peak Hour	06:00	08:00	07:00	09:00	09:00									09:00
Volume	1	3	11	13	6									29
PM Volumes	6	30	82	102	25	2	0	0	0	0	0	0	0	247
% PM	2%	8%	22%	28%	7%	1%								67%
PM Peak Hour	13:00	13:00	17:00	17:00	15:00	12:00								17:00
Volume	3	7	15	20	6	1								41

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	40		11%	55		15%	70		19%	203		55%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Dove Ln	Summary	20	26	25	30	33	368

APPENDIX B

EXISTING INTERSECTION LEVEL OF SERVICE WORKSHEETS

APPENDIX B

EXISTING INTERSECTION LEVEL OF SERVICE WORKSHEETS

ICU Worksheets

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Ambrosia Ln / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Ambrosia Ln						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	364	5	216	22	9	14	6	267	184	168	239	9
Growth 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
Initial Bse:	364	5	216	22	9	14	6	267	184	168	239	9
User 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
PHF 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
PHF Volume:	364	5	216	22	9	14	6	267	184	168	239	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	364	5	216	22	9	14	6	267	184	168	239	9
PCE 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
MLF 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
FinalVolume:	364	5	216	22	9	14	6	267	184	168	239	9
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.62	0.01	0.37	0.49	0.20	0.31	1.00	1.18	0.82	1.00	1.93	0.07
Final Sat.:	996	14	591	782	320	498	1600	1894	1306	1600	3084	116
Capacity Analysis Module:												
Vol/Sat:	0.23	0.37	0.37	0.01	0.03	0.03	0.00	0.14	0.14	0.11	0.08	0.08
Crit Moves:		****			****				****		****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Ambrosia Ln / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Street Name:	Ambrosia Ln						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	0	1 0	1	1 0
Volume Module:												
Base Vol:	8	104	13	210	11	158	268	370	29	11	329	256
Growth 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
Initial Bse:	8	104	13	210	11	158	268	370	29	11	329	256
User 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
PHF 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
PHF Volume:	8	104	13	210	11	158	268	370	29	11	329	256
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	104	13	210	11	158	268	370	29	11	329	256
PCE 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
MLF 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
FinalVolume:	8	104	13	210	11	158	268	370	29	11	329	256
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.06	0.84	0.10	0.55	0.03	0.42	1.00	1.85	0.15	1.00	1.12	0.88
Final Sat.:	102	1331	166	887	46	667	1600	2967	233	1600	1800	1400
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.24	0.24	0.24	0.17	0.12	0.12	0.01	0.18	0.18
Crit Moves:	****			****			****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Mimosa Dr / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.299
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	17	Level Of Service:	A

Street Name:	Mimosa Dr						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	27	7	42	7	1	69	26	509	23	29	491	10
Growth 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
Initial Bse:	27	7	42	7	1	69	26	509	23	29	491	10
User 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
PHF 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
PHF Volume:	27	7	42	7	1	69	26	509	23	29	491	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	7	42	7	1	69	26	509	23	29	491	10
PCE 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
MLF 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
FinalVolume:	27	7	42	7	1	69	26	509	23	29	491	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.09	0.55	0.09	0.01	0.90	1.00	1.91	0.09	1.00	1.96	0.04
Final Sat.:	568	147	884	145	21	1434	1600	3062	138	1600	3136	64
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.00	0.05	0.05	0.02	0.17	0.17	0.02	0.16	0.16
Crit Moves:	****				****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 El Camino Real / Cassia Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.755
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Street Name:	El Camino Real						Cassia Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	143	1390	11	8	1304	190	418	4	187	17	4	3
Growth 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
Initial Bse:	143	1390	11	8	1304	190	418	4	187	17	4	3
User 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
PHF 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
PHF Volume:	143	1390	11	8	1304	190	418	4	187	17	4	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	143	1390	11	8	1304	190	418	4	187	17	4	3
PCE 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
MLF 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
FinalVolume:	143	1390	11	8	1304	190	418	4	187	17	4	3
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.62	0.38	1.00	0.02	0.98	1.00	0.57	0.43
Final Sat.:	1600	3200	1600	1600	4190	610	1600	34	1566	1600	914	686
Capacity Analysis Module:												
Vol/Sat:	0.09	0.43	0.01	0.01	0.31	0.31	0.26	0.12	0.12	0.01	0.00	0.00
Crit Moves:		****			****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.524
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	23	1326	446	149	1354	14	17	10	3	438	16	234
Growth 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
Initial Bse:	23	1326	446	149	1354	14	17	10	3	438	16	234
User 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
PHF 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
PHF Volume:	23	1326	446	149	1354	14	17	10	3	438	16	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	1326	446	149	1354	14	17	10	3	438	16	234
PCE 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
MLF 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
FinalVolume:	23	1326	446	149	1354	14	17	10	3	438	16	234
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.97	0.03	2.00	1.54	0.46	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4751	49	3200	2462	738	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.28	0.28	0.05	0.29	0.28	0.01	0.00	0.00	0.14	0.01	0.15
Crit Moves:		****			****			****				****

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 El Camino Real / Dove Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.478
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	A

Street Name:	El Camino Real						Dove Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	27	1623	26	50	1624	114	76	9	36	58	14	69
Growth 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
Initial Bse:	27	1623	26	50	1624	114	76	9	36	58	14	69
User 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
PHF 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
PHF Volume:	27	1623	26	50	1624	114	76	9	36	58	14	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1623	26	50	1624	114	76	9	36	58	14	69
PCE 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
MLF 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
FinalVolume:	27	1623	26	50	1624	114	76	9	36	58	14	69
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.95	0.05	1.00	2.80	0.20	1.00	0.20	0.80	1.00	0.17	0.83
Final Sat.:	1600	4724	76	1600	4485	315	1600	320	1280	1600	270	1330
Capacity Analysis Module:												
Vol/Sat:	0.02	0.34	0.34	0.03	0.36	0.36	0.05	0.03	0.03	0.04	0.05	0.05
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 El Camino Real / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.780
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Street Name:	El Camino Real						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	1	1 0
Volume Module:												
Base Vol:	137	1416	200	69	1564	102	178	167	280	664	290	103
Growth 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
Initial Bse:	137	1416	200	69	1564	102	178	167	280	664	290	103
User 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
PHF 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
PHF Volume:	137	1416	200	69	1564	102	178	167	280	664	290	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	1416	200	69	1564	102	178	167	280	664	290	103
PCE 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
MLF 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
FinalVolume:	137	1416	200	69	1564	102	178	167	280	664	290	103
OvlAdjVol:									211			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.63	0.37	2.00	2.82	0.18	2.00	2.00	1.00	2.00	1.48	0.52
Final Sat.:	3200	4206	594	3200	4506	294	3200	3200	1600	3200	2361	839
Capacity Analysis Module:												
Vol/Sat:	0.04	0.34	0.34	0.02	0.35	0.35	0.06	0.05	0.17	0.21	0.12	0.12
OvlAdjV/S:									0.13			
Crit Moves:	****			****					****	****		

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Ambrosia Ln / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.355
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	19	Level Of Service:	A

Street Name:	Ambrosia Ln						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	77	16	47	44	28	63	46	315	100	69	298	63
Growth 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
Initial Bse:	77	16	47	44	28	63	46	315	100	69	298	63
User 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
PHF 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
PHF Volume:	77	16	47	44	28	63	46	315	100	69	298	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	16	47	44	28	63	46	315	100	69	298	63
PCE 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
MLF 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
FinalVolume:	77	16	47	44	28	63	46	315	100	69	298	63
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.55	0.11	0.34	0.32	0.21	0.47	1.00	1.52	0.48	1.00	1.65	0.35
Final Sat.:	880	183	537	521	332	747	1600	2429	771	1600	2642	558
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.09	0.03	0.08	0.08	0.03	0.13	0.13	0.04	0.11	0.11
Crit Moves:	****			****			****			****		

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Ambrosia Ln / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.346
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	18	Level Of Service:	A

Street Name:	Ambrosia Ln						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 1! 0		0	0 1! 0		1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	10	6	10	68	5	16	22	603	17	49	568	68
Growth 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
Initial Bse:	10	6	10	68	5	16	22	603	17	49	568	68
User 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
PHF 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
PHF Volume:	10	6	10	68	5	16	22	603	17	49	568	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	6	10	68	5	16	22	603	17	49	568	68
PCE 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
MLF 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
FinalVolume:	10	6	10	68	5	16	22	603	17	49	568	68
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.23	0.38	0.76	0.06	0.18	1.00	1.95	0.05	1.00	1.79	0.21
Final Sat.:	615	369	615	1222	90	288	1600	3112	88	1600	2858	342
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.06	0.06	0.06	0.01	0.19	0.19	0.03	0.20	0.20
Crit Moves:	****			****			****			****		

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Mimosa Dr / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.343
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	18	Level Of Service:	A

Street Name:	Mimosa Dr						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	28	4	37	16	3	18	16	585	19	65	710	24
Growth 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
Initial Bse:	28	4	37	16	3	18	16	585	19	65	710	24
User 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
PHF 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
PHF Volume:	28	4	37	16	3	18	16	585	19	65	710	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	4	37	16	3	18	16	585	19	65	710	24
PCE 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
MLF 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
FinalVolume:	28	4	37	16	3	18	16	585	19	65	710	24
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.40	0.06	0.54	0.43	0.08	0.49	1.00	1.94	0.06	1.00	1.93	0.07
Final Sat.:	649	93	858	692	130	778	1600	3099	101	1600	3095	105
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.01	0.02	0.02	0.01	0.19	0.19	0.04	0.23	0.23
Crit Moves:	****			****			****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 El Camino Real / Cassia Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.772
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	C

Street Name:	El Camino Real						Cassia Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	198	1031	14	15	1680	404	234	2	185	11	10	19
Growth 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
Initial Bse:	198	1031	14	15	1680	404	234	2	185	11	10	19
User 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
PHF 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
PHF Volume:	198	1031	14	15	1680	404	234	2	185	11	10	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	1031	14	15	1680	404	234	2	185	11	10	19
PCE 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
MLF 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
FinalVolume:	198	1031	14	15	1680	404	234	2	185	11	10	19
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.42	0.58	1.00	0.01	0.99	1.00	0.34	0.66
Final Sat.:	1600	3200	1600	1600	3869	931	1600	17	1583	1600	552	1048
Capacity Analysis Module:												
Vol/Sat:	0.12	0.32	0.01	0.01	0.43	0.43	0.15	0.12	0.12	0.01	0.02	0.02
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.530
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	19	1089	492	243	1606	14	14	14	5	290	12	130
Growth 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
Initial Bse:	19	1089	492	243	1606	14	14	14	5	290	12	130
User 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
PHF 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
PHF Volume:	19	1089	492	243	1606	14	14	14	5	290	12	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	1089	492	243	1606	14	14	14	5	290	12	130
PCE 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
MLF 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
FinalVolume:	19	1089	492	243	1606	14	14	14	5	290	12	130
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.97	0.03	2.00	1.47	0.53	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4759	41	3200	2358	842	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.23	0.31	0.08	0.34	0.34	0.00	0.01	0.01	0.09	0.01	0.08
Crit Moves:			****	****				****		****		

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 El Camino Real / Dove Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.574
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	A

Street Name:	El Camino Real						Dove Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	90	1474	56	87	1538	225	156	24	79	72	29	55
Growth 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
Initial Bse:	90	1474	56	87	1538	225	156	24	79	72	29	55
User 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
PHF 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
PHF Volume:	90	1474	56	87	1538	225	156	24	79	72	29	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	1474	56	87	1538	225	156	24	79	72	29	55
PCE 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
MLF 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
FinalVolume:	90	1474	56	87	1538	225	156	24	79	72	29	55
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.89	0.11	1.00	2.62	0.38	1.00	0.23	0.77	1.00	0.35	0.65
Final Sat.:	1600	4624	176	1600	4187	613	1600	373	1227	1600	552	1048
Capacity Analysis Module:												
Vol/Sat:	0.06	0.32	0.32	0.05	0.37	0.37	0.10	0.06	0.06	0.05	0.05	0.05
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 El Camino Real / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Street Name:	El Camino Real						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	1	1 0
Volume Module:												
Base Vol:	450	1448	536	191	1395	131	144	342	330	294	283	86
Growth 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
Initial Bse:	450	1448	536	191	1395	131	144	342	330	294	283	86
User 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
PHF 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
PHF Volume:	450	1448	536	191	1395	131	144	342	330	294	283	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	450	1448	536	191	1395	131	144	342	330	294	283	86
PCE 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
MLF 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
FinalVolume:	450	1448	536	191	1395	131	144	342	330	294	283	86
OvlAdjVol:									105			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.19	0.81	2.00	2.74	0.26	2.00	2.00	1.00	2.00	1.53	0.47
Final Sat.:	3200	3503	1297	3200	4388	412	3200	3200	1600	3200	2454	746
Capacity Analysis Module:												
Vol/Sat:	0.14	0.41	0.41	0.06	0.32	0.32	0.05	0.11	0.21	0.09	0.12	0.12
OvlAdjV/S:									0.07			
Crit Moves:		****			****			****			****	

APPENDIX B

EXISTING INTERSECTION LEVEL OF SERVICE WORKSHEETS

HCM Worksheets

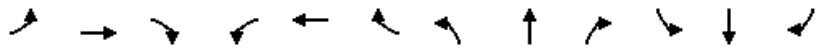
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	267	184	168	239	9	364	5	216	22	9	14
Future Volume (veh/h)	6	267	184	168	239	9	364	5	216	22	9	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	6	281	194	177	252	9	383	5	227	23	9	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	420	282	218	1124	40	507	6	253	380	154	216
Arrive On Green	0.01	0.21	0.21	0.12	0.32	0.32	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1781	2037	1364	1781	3500	125	914	12	542	657	330	463
Grp Volume(v), veh/h	6	244	231	177	128	133	615	0	0	47	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1625	1781	1777	1848	1468	0	0	1450	0	0
Q Serve(g_s), s	0.2	9.2	9.6	7.1	3.8	3.9	26.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	9.2	9.6	7.1	3.8	3.9	28.0	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.84	1.00		0.07	0.62		0.37	0.49		0.32
Lane Grp Cap(c), veh/h	14	367	335	218	570	593	766	0	0	751	0	0
V/C Ratio(X)	0.43	0.67	0.69	0.81	0.22	0.22	0.80	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	122	367	335	295	570	593	1039	0	0	1008	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.1	26.7	26.9	31.3	18.2	18.2	17.7	0.0	0.0	10.7	0.0	0.0
Incr Delay (d2), s/veh	19.5	9.2	11.0	11.7	0.9	0.9	3.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.7	4.6	3.6	1.6	1.7	9.1	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	35.9	37.9	42.9	19.1	19.1	21.0	0.0	0.0	10.7	0.0	0.0
LnGrp LOS	E	D	D	D	B	B	C	A	A	B	A	A
Approach Vol, veh/h		481			438			615			47	
Approach Delay, s/veh		37.1			28.7			21.0			10.7	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	38.7	13.2	21.3	38.7	4.8	29.7
Change Period (Y+Rc), s	4.5	* 4.2	6.2	4.5	* 4.2	* 6.2
Max Green Setting (Gmax), s	47.9	* 12	15.1	47.9	* 5	* 23
Max Q Clear Time (g_c+I1), s	30.0	9.1	11.6	3.1	2.2	5.9
Green Ext Time (p_c), s	4.2	0.1	1.0	0.3	0.0	1.3

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

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	370	29	11	329	256	8	104	13	210	11	158
Future Volume (veh/h)	268	370	29	11	329	256	8	104	13	210	11	158
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	357	493	39	15	439	341	11	139	17	280	15	211
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	1401	111	29	423	327	13	167	20	286	15	215
Arrive On Green	0.21	0.42	0.42	0.02	0.22	0.22	0.11	0.11	0.11	0.30	0.30	0.30
Sat Flow, veh/h	1781	3337	263	1781	1908	1474	121	1524	186	939	50	707
Grp Volume(v), veh/h	357	262	270	15	409	371	167	0	0	506	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1823	1781	1777	1605	1831	0	0	1696	0	0
Q Serve(g_s), s	25.7	13.1	13.2	1.1	29.0	29.0	11.7	0.0	0.0	38.7	0.0	0.0
Cycle Q Clear(g_c), s	25.7	13.1	13.2	1.1	29.0	29.0	11.7	0.0	0.0	38.7	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.92	0.07		0.10	0.55		0.42
Lane Grp Cap(c), veh/h	381	746	765	29	394	356	201	0	0	516	0	0
V/C Ratio(X)	0.94	0.35	0.35	0.52	1.04	1.04	0.83	0.00	0.00	0.98	0.00	0.00
Avail Cap(c_a), veh/h	403	746	765	75	394	356	378	0	0	516	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.5	25.8	25.8	63.8	50.9	50.9	57.0	0.0	0.0	45.1	0.0	0.0
Incr Delay (d2), s/veh	28.5	0.3	0.3	14.1	55.2	59.2	8.6	0.0	0.0	34.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.6	5.8	0.6	18.9	17.5	5.9	0.0	0.0	21.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.0	26.1	26.1	77.9	106.0	110.1	65.6	0.0	0.0	79.3	0.0	0.0
LnGrp LOS	E	C	C	E	F	F	E	A	A	E	A	A
Approach Vol, veh/h		889			795			167			506	
Approach Delay, s/veh		47.3			107.4			65.6			79.3	
Approach LOS		D			F			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	18.9	6.3	61.1	44.4	32.2	35.2
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	27.0	* 5.5	53.1	39.8	* 30	29.0
Max Q Clear Time (g_c+I1), s	13.7	3.1	15.2	40.7	27.7	31.0
Green Ext Time (p_c), s	0.7	0.0	3.6	0.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	75.8
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	39	0	3	0	5	27	5	8	0
Future Volume (Veh/h)	0	0	0	39	0	3	0	5	27	5	8	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	41	0	3	0	5	28	5	8	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3			0			86	85	0	112	82	0
vC1, stage 1 conf vol							0	0		82	82	
vC2, stage 2 conf vol							86	85		30	0	
vCu, unblocked vol	3			0			86	85	0	112	82	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	99	97	99	99	100
cM capacity (veh/h)	1619			1623			811	731	1085	790	732	1085

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	41	3	33	13
Volume Left	41	0	0	5
Volume Right	0	3	28	0
cSH	1623	1700	1011	753
Volume to Capacity	0.03	0.00	0.03	0.02
Queue Length 95th (ft)	2	0	3	1
Control Delay (s)	7.3	0.0	8.7	9.9
Lane LOS	A		A	A
Approach Delay (s)	6.8		8.7	9.9
Approach LOS			A	A

Intersection Summary				
Average Delay	7.9			
Intersection Capacity Utilization	14.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	4	23	9	7	39
Future Vol, veh/h	10	4	23	9	7	39
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	4	24	9	7	41

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	84	29	0	0	33	0
Stage 1	29	-	-	-	-	-
Stage 2	55	-	-	-	-	-
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	918	1046	-	-	1579	-
Stage 1	994	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	913	1046	-	-	1579	-
Mov Cap-2 Maneuver	913	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	947	1579	-
HCM Lane V/C Ratio	-	-	0.016	0.005	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	16	6	6	7	1
Future Vol, veh/h	4	16	6	6	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	17	6	6	7	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	21	0	31	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1595	-	983	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1005	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1595	-	979	1067
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	989	-	-	1595	-
HCM Lane V/C Ratio	0.009	-	-	0.004	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

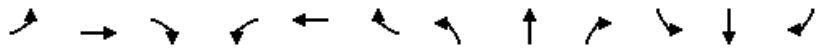
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	509	23	29	491	10	27	7	42	7	1	69
Future Volume (veh/h)	26	509	23	29	491	10	27	7	42	7	1	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	27	536	24	31	517	11	28	7	44	7	1	73
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	1573	70	66	1631	35	181	27	98	114	7	155
Arrive On Green	0.03	0.45	0.45	0.04	0.46	0.46	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3464	155	1781	3558	76	467	252	904	88	69	1433
Grp Volume(v), veh/h	27	275	285	31	258	270	79	0	0	81	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1842	1781	1777	1857	1622	0	0	1590	0	0
Q Serve(g_s), s	0.6	3.7	3.7	0.6	3.4	3.5	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.6	3.7	3.7	0.6	3.4	3.5	1.6	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.04	0.35		0.56	0.09		0.90
Lane Grp Cap(c), veh/h	58	807	837	66	814	851	306	0	0	277	0	0
V/C Ratio(X)	0.46	0.34	0.34	0.47	0.32	0.32	0.26	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	257	807	837	257	814	851	1250	0	0	1261	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.8	6.6	6.6	17.7	6.4	6.4	15.6	0.0	0.0	15.7	0.0	0.0
Incr Delay (d2), s/veh	5.6	1.1	1.1	5.2	1.0	1.0	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	1.2	0.3	1.1	1.1	0.6	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	7.7	7.7	22.9	7.4	7.4	16.0	0.0	0.0	16.2	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		587			559			79			81	
Approach Delay, s/veh		8.4			8.3			16.0			16.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.7	5.6	23.2	8.7	5.4	23.4
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	27.6	* 5.4	17.0	27.6	* 5.4	17.0
Max Q Clear Time (g_c+I1), s	3.6	2.6	5.7	3.8	2.6	5.5
Green Ext Time (p_c), s	0.4	0.0	2.6	0.4	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	418	4	187	17	4	3	143	1390	11	8	1304	190
Future Volume (veh/h)	418	4	187	17	4	3	143	1390	11	8	1304	190
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	440	4	197	18	4	3	151	1463	12	8	1373	200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	9	419	43	24	18	180	1833	818	18	1913	279
Arrive On Green	0.27	0.27	0.27	0.02	0.02	0.02	0.10	0.52	0.52	0.01	0.42	0.42
Sat Flow, veh/h	1781	32	1558	1781	992	744	1781	3554	1585	1781	4501	655
Grp Volume(v), veh/h	440	0	201	18	0	7	151	1463	12	8	1038	535
Grp Sat Flow(s),veh/h/ln	1781	0	1590	1781	0	1736	1781	1777	1585	1781	1702	1752
Q Serve(g_s), s	27.0	0.0	11.9	1.1	0.0	0.4	9.4	38.2	0.4	0.5	28.5	28.5
Cycle Q Clear(g_c), s	27.0	0.0	11.9	1.1	0.0	0.4	9.4	38.2	0.4	0.5	28.5	28.5
Prop In Lane	1.00		0.98	1.00		0.43	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	480	0	428	43	0	42	180	1833	818	18	1446	745
V/C Ratio(X)	0.92	0.00	0.47	0.42	0.00	0.17	0.84	0.80	0.01	0.46	0.72	0.72
Avail Cap(c_a), veh/h	537	0	480	537	0	524	216	1833	818	79	1446	745
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	40.0	0.0	34.5	54.2	0.0	53.9	49.8	22.4	13.3	55.5	26.8	26.8
Incr Delay (d2), s/veh	19.6	0.0	0.8	6.4	0.0	1.9	21.4	3.7	0.0	17.4	3.1	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	0.0	4.7	0.6	0.0	0.2	5.2	16.2	0.2	0.3	11.9	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	0.0	35.3	60.6	0.0	55.8	71.2	26.2	13.3	73.0	29.9	32.7
LnGrp LOS	E	A	D	E	A	E	E	C	B	E	C	C
Approach Vol, veh/h		641			25			1626			1581	
Approach Delay, s/veh		51.9			59.3			30.3			31.1	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.3	64.7		35.4	15.6	54.4		7.3
Change Period (Y+Rc), s	* 4.2	6.5		5.1	* 4.2	6.5		4.6
Max Green Setting (Gmax), s	* 5	56.6		34.0	* 14	47.9		34.0
Max Q Clear Time (g_c+I1), s	2.5	40.2		29.0	11.4	30.5		3.1
Green Ext Time (p_c), s	0.0	10.0		1.3	0.1	10.4		0.1

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	10	3	438	16	234	23	1326	446	149	1354	14
Future Volume (veh/h)	17	10	3	438	16	234	23	1326	446	149	1354	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	18	11	3	461	17	246	24	1396	469	157	1425	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	219	57	497	358	319	93	2032	631	241	2297	24
Arrive On Green	0.02	0.08	0.08	0.14	0.20	0.20	0.03	0.40	0.40	0.07	0.44	0.44
Sat Flow, veh/h	3456	2789	728	3456	1777	1585	3456	5106	1585	3456	5210	55
Grp Volume(v), veh/h	18	7	7	461	17	246	24	1396	469	157	931	509
Grp Sat Flow(s),veh/h/ln	1728	1777	1739	1728	1777	1585	1728	1702	1585	1728	1702	1860
Q Serve(g_s), s	0.3	0.2	0.3	9.0	0.5	10.0	0.5	15.4	17.2	3.0	14.3	14.3
Cycle Q Clear(g_c), s	0.3	0.2	0.3	9.0	0.5	10.0	0.5	15.4	17.2	3.0	14.3	14.3
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	73	140	137	497	358	319	93	2032	631	241	1501	820
V/C Ratio(X)	0.25	0.05	0.05	0.93	0.05	0.77	0.26	0.69	0.74	0.65	0.62	0.62
Avail Cap(c_a), veh/h	254	835	817	497	960	856	254	2032	631	254	1501	820
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	29.0	29.0	28.8	21.9	25.7	32.5	17.0	17.5	30.9	14.7	14.7
Incr Delay (d2), s/veh	1.7	0.1	0.2	23.7	0.1	4.0	1.5	1.9	7.8	5.4	1.9	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.1	5.2	0.2	3.9	0.2	5.8	7.0	1.4	5.3	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	29.2	29.2	52.5	22.0	29.7	33.9	18.9	25.3	36.3	16.6	18.2
LnGrp LOS	C	C	C	D	C	C	C	B	C	D	B	B
Approach Vol, veh/h		32			724			1889			1597	
Approach Delay, s/veh		32.2			44.0			20.7			19.0	
Approach LOS		C			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	33.6	14.0	11.6	6.0	36.5	5.6	19.9
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 5	27.1	* 9.8	32.0	* 5	27.1	* 5	36.8
Max Q Clear Time (g_c+I1), s	5.0	19.2	11.0	2.3	2.5	16.3	2.3	12.0
Green Ext Time (p_c), s	0.0	6.0	0.0	0.0	0.0	6.8	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	9	36	58	14	69	27	1623	26	50	1624	114
Future Volume (veh/h)	76	9	36	58	14	69	27	1623	26	50	1624	114
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	80	9	38	61	15	73	28	1708	27	53	1709	120
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	29	124	88	24	116	53	2714	43	82	2471	173
Arrive On Green	0.06	0.09	0.09	0.05	0.09	0.09	0.03	0.52	0.52	0.05	0.51	0.51
Sat Flow, veh/h	1781	313	1320	1781	277	1350	1781	5178	82	1781	4871	342
Grp Volume(v), veh/h	80	0	47	61	0	88	28	1123	612	53	1193	636
Grp Sat Flow(s),veh/h/ln	1781	0	1633	1781	0	1627	1781	1702	1856	1781	1702	1809
Q Serve(g_s), s	3.1	0.0	1.9	2.4	0.0	3.6	1.1	16.3	16.4	2.0	18.6	18.6
Cycle Q Clear(g_c), s	3.1	0.0	1.9	2.4	0.0	3.6	1.1	16.3	16.4	2.0	18.6	18.6
Prop In Lane	1.00		0.81	1.00		0.83	1.00		0.04	1.00		0.19
Lane Grp Cap(c), veh/h	103	0	153	88	0	140	53	1784	973	82	1726	917
V/C Ratio(X)	0.78	0.00	0.31	0.69	0.00	0.63	0.52	0.63	0.63	0.65	0.69	0.69
Avail Cap(c_a), veh/h	143	0	805	133	0	793	128	1784	973	133	1726	917
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	32.5	0.0	29.5	32.6	0.0	30.8	33.4	11.8	11.8	32.7	13.1	13.1
Incr Delay (d2), s/veh	16.5	0.0	1.1	9.1	0.0	4.6	7.7	1.7	3.1	8.3	2.3	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.8	1.2	0.0	1.6	0.6	5.7	6.6	1.0	6.7	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	0.0	30.6	41.8	0.0	35.5	41.1	13.5	14.9	41.0	15.3	17.4
LnGrp LOS	D	A	C	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		127			149			1763			1882	
Approach Delay, s/veh		42.2			38.1			14.4			16.7	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	43.1	7.7	11.6	8.6	41.9	8.2	11.1
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	5.1	6.5	* 6.5	* 4.2	5.1
Max Green Setting (Gmax), s	* 5.2	35.2	* 5.2	34.4	5.0	* 35	* 5.6	34.0
Max Q Clear Time (g_c+I1), s	4.6	18.4	4.4	3.9	3.1	20.6	5.1	5.6
Green Ext Time (p_c), s	0.0	11.1	0.0	0.2	0.0	10.6	0.0	0.5

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	167	280	664	290	103	137	1416	200	69	1564	102
Future Volume (veh/h)	178	167	280	664	290	103	137	1416	200	69	1564	102
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	187	176	295	699	305	108	144	1491	0	73	1646	107
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	703	397	742	885	307	181	1861		127	1797	117
Arrive On Green	0.07	0.20	0.20	0.21	0.34	0.34	0.05	0.36	0.00	0.04	0.37	0.37
Sat Flow, veh/h	3456	3554	1585	3456	2587	898	3456	5274	0	3456	4899	318
Grp Volume(v), veh/h	187	176	295	699	208	205	144	1491	0	73	1143	610
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1709	1728	1702	0	1728	1702	1813
Q Serve(g_s), s	6.7	5.3	21.5	25.0	10.9	11.3	5.2	32.9	0.0	2.6	40.2	40.3
Cycle Q Clear(g_c), s	6.7	5.3	21.5	25.0	10.9	11.3	5.2	32.9	0.0	2.6	40.2	40.3
Prop In Lane	1.00		1.00	1.00		0.53	1.00		0.00	1.00		0.18
Lane Grp Cap(c), veh/h	244	703	397	742	608	585	181	1861		127	1249	665
V/C Ratio(X)	0.77	0.25	0.74	0.94	0.34	0.35	0.79	0.80		0.58	0.92	0.92
Avail Cap(c_a), veh/h	344	877	474	742	643	619	181	1861		140	1249	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	42.5	43.4	48.6	30.8	30.9	58.9	35.8	0.0	59.6	37.9	37.9
Incr Delay (d2), s/veh	6.5	0.2	5.1	20.1	0.3	0.4	21.0	3.7	0.0	4.7	11.9	19.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	2.3	9.0	12.8	4.8	4.7	2.8	14.2	0.0	1.2	18.6	21.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	42.7	48.5	68.7	31.1	31.3	79.9	39.6	0.0	64.2	49.8	57.5
LnGrp LOS	E	D	D	E	C	C	E	D		E	D	E
Approach Vol, veh/h		658			1112			1635	A		1826	
Approach Delay, s/veh		51.3			54.7			43.1			52.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	52.3	31.2	31.1	10.8	52.6	13.1	49.2
Change Period (Y+Rc), s	6.5	* 6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	5.5	* 46	* 27	31.0	* 6.6	44.3	* 13	45.5
Max Q Clear Time (g_c+I1), s	4.6	34.9	27.0	23.5	7.2	42.3	8.7	13.3
Green Ext Time (p_c), s	0.0	7.3	0.0	1.3	0.0	1.7	0.2	2.7

Intersection Summary	
HCM 6th Ctrl Delay	50.1
HCM 6th LOS	D

Notes

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

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

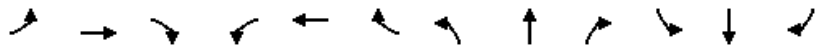
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	315	100	69	298	63	77	16	47	44	28	63
Future Volume (veh/h)	46	315	100	69	298	63	77	16	47	44	28	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	48	332	105	73	314	66	81	17	49	46	29	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	1429	445	109	1610	334	209	36	71	143	61	102
Arrive On Green	0.05	0.54	0.54	0.06	0.55	0.55	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	2668	830	1781	2930	608	821	280	551	430	472	794
Grp Volume(v), veh/h	48	219	218	73	189	191	147	0	0	141	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1721	1781	1777	1761	1652	0	0	1695	0	0
Q Serve(g_s), s	1.4	3.6	3.7	2.2	2.9	3.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.4	3.6	3.7	2.2	2.9	3.0	4.2	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.48	1.00		0.35	0.55		0.33	0.33		0.47
Lane Grp Cap(c), veh/h	84	952	922	109	977	968	316	0	0	307	0	0
V/C Ratio(X)	0.57	0.23	0.24	0.67	0.19	0.20	0.47	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	354	952	922	452	977	968	1068	0	0	1113	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.4	6.7	6.7	25.0	6.2	6.2	22.5	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	5.9	0.6	0.6	6.8	0.4	0.5	1.1	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.2	1.2	1.1	0.9	1.0	1.7	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	7.3	7.3	31.8	6.6	6.6	23.5	0.0	0.0	23.5	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	C	A	A	C	A	A
Approach Vol, veh/h		485			453			147			141	
Approach Delay, s/veh		9.7			10.7			23.5			23.5	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	11.5	7.5	35.3	11.5	6.8	36.1
Change Period (Y+Rc), s	4.5	* 4.2	6.2	4.5	* 4.2	* 6.2
Max Green Setting (Gmax), s	35.5	* 14	25.8	35.5	* 11	* 30
Max Q Clear Time (g_c+I1), s	6.2	4.2	5.7	6.0	3.4	5.0
Green Ext Time (p_c), s	0.9	0.1	2.6	0.8	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	603	17	49	568	68	10	6	10	68	5	16
Future Volume (veh/h)	22	603	17	49	568	68	10	6	10	68	5	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	23	635	18	52	598	72	11	6	11	72	5	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	1025	29	100	1015	122	23	12	23	112	8	27
Arrive On Green	0.03	0.29	0.29	0.06	0.32	0.32	0.03	0.03	0.03	0.08	0.08	0.08
Sat Flow, veh/h	1781	3529	100	1781	3194	384	674	368	674	1338	93	316
Grp Volume(v), veh/h	23	320	333	52	332	338	28	0	0	94	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1801	1715	0	0	1747	0	0
Q Serve(g_s), s	0.5	5.7	5.7	1.0	5.7	5.8	0.6	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	0.5	5.7	5.7	1.0	5.7	5.8	0.6	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.21	0.39		0.39	0.77		0.18
Lane Grp Cap(c), veh/h	51	516	538	100	565	573	58	0	0	147	0	0
V/C Ratio(X)	0.45	0.62	0.62	0.52	0.59	0.59	0.48	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	243	874	911	248	879	891	1233	0	0	1241	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.5	11.2	11.2	16.8	10.5	10.5	17.4	0.0	0.0	16.2	0.0	0.0
Incr Delay (d2), s/veh	6.2	1.2	1.2	4.1	1.0	1.0	6.1	0.0	0.0	4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.9	1.9	0.5	1.8	1.8	0.3	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	12.5	12.4	20.9	11.4	11.4	23.4	0.0	0.0	20.8	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		676			722			28			94	
Approach Delay, s/veh		12.8			12.1			23.4			20.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	5.8	6.3	16.8	7.7	5.2	17.8
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	26.3	* 5.1	18.0	26.0	* 5	18.1
Max Q Clear Time (g_c+I1), s	2.6	3.0	7.7	3.9	2.5	7.8
Green Ext Time (p_c), s	0.1	0.0	2.9	0.4	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	30	0	13	0	3	19	6	4	0
Future Volume (Veh/h)	0	0	0	30	0	13	0	3	19	6	4	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	32	0	14	0	3	20	6	4	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	14			0			66	78	0	86	64	0
vC1, stage 1 conf vol							0	0		64	64	
vC2, stage 2 conf vol							66	78		22	0	
vCu, unblocked vol	14			0			66	78	0	86	64	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	98	99	99	100
cM capacity (veh/h)	1604			1623			840	740	1085	823	750	1085

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	32	14	23	10
Volume Left	32	0	0	6
Volume Right	0	14	20	0
cSH	1623	1700	1023	792
Volume to Capacity	0.02	0.01	0.02	0.01
Queue Length 95th (ft)	2	0	2	1
Control Delay (s)	7.3	0.0	8.6	9.6
Lane LOS	A		A	A
Approach Delay (s)	5.1		8.6	9.6
Approach LOS			A	A

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	15.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	5	20	8	5	15
Future Vol, veh/h	8	5	20	8	5	15
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	5	21	8	5	16

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	51	25	0	0	29	0
Stage 1	25	-	-	-	-	-
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	958	1051	-	-	1584	-
Stage 1	998	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	955	1051	-	-	1584	-
Mov Cap-2 Maneuver	955	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	997	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	990	1584	-
HCM Lane V/C Ratio	-	-	0.014	0.003	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	9	6	3	9	4
Future Vol, veh/h	3	9	6	3	9	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	9	6	3	9	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	12	0	23	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1607	-	993	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1607	-	989	1074
Mov Cap-2 Maneuver	-	-	-	-	989	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1008	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1014	-	-	1607	-
HCM Lane V/C Ratio	0.013	-	-	0.004	-
HCM Control Delay (s)	8.6	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	585	19	65	710	24	28	4	37	16	3	18
Future Volume (veh/h)	16	585	19	65	710	24	28	4	37	16	3	18
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	17	616	20	68	747	25	29	4	39	17	3	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	1603	52	119	1760	59	182	13	77	186	23	72
Arrive On Green	0.02	0.46	0.46	0.07	0.50	0.50	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	3513	114	1781	3509	117	574	148	853	584	253	795
Grp Volume(v), veh/h	17	311	325	68	378	394	72	0	0	39	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1850	1781	1777	1849	1575	0	0	1632	0	0
Q Serve(g_s), s	0.4	4.5	4.5	1.4	5.2	5.2	0.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.5	4.5	1.4	5.2	5.2	1.6	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.06	0.40		0.54	0.44		0.49
Lane Grp Cap(c), veh/h	38	811	844	119	892	928	272	0	0	280	0	0
V/C Ratio(X)	0.44	0.38	0.38	0.57	0.42	0.42	0.26	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	230	811	844	234	892	928	1196	0	0	1195	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.7	6.9	7.0	17.6	6.1	6.1	16.8	0.0	0.0	16.4	0.0	0.0
Incr Delay (d2), s/veh	7.8	1.4	1.3	4.2	1.5	1.4	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	1.5	0.6	1.6	1.6	0.6	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	8.3	8.3	21.8	7.6	7.5	17.3	0.0	0.0	16.7	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		653			840			72			39	
Approach Delay, s/veh		8.8			8.7			17.3			16.7	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.1	6.8	23.9	8.1	5.0	25.7
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	27.2	* 5.1	17.7	27.2	* 5	17.8
Max Q Clear Time (g_c+I1), s	3.6	3.4	6.5	2.8	2.4	7.2
Green Ext Time (p_c), s	0.3	0.0	3.0	0.1	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	2	185	11	10	19	198	1031	14	15	1680	404
Future Volume (veh/h)	234	2	185	11	10	19	198	1031	14	15	1680	404
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	246	2	195	12	11	20	208	1085	15	16	1768	425
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	3	268	61	20	37	221	2060	919	32	1953	460
Arrive On Green	0.17	0.17	0.17	0.03	0.03	0.03	0.12	0.58	0.58	0.02	0.47	0.47
Sat Flow, veh/h	1781	16	1571	1781	595	1081	1781	3554	1585	1781	4127	973
Grp Volume(v), veh/h	246	0	197	12	0	31	208	1085	15	16	1452	741
Grp Sat Flow(s),veh/h/ln	1781	0	1588	1781	0	1676	1781	1777	1585	1781	1702	1695
Q Serve(g_s), s	13.7	0.0	12.1	0.7	0.0	1.9	11.9	19.1	0.4	0.9	40.4	42.2
Cycle Q Clear(g_c), s	13.7	0.0	12.1	0.7	0.0	1.9	11.9	19.1	0.4	0.9	40.4	42.2
Prop In Lane	1.00		0.99	1.00		0.65	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	304	0	271	61	0	58	221	2060	919	32	1611	802
V/C Ratio(X)	0.81	0.00	0.73	0.20	0.00	0.54	0.94	0.53	0.02	0.50	0.90	0.92
Avail Cap(c_a), veh/h	587	0	523	587	0	553	221	2060	919	86	1611	802
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	41.2	0.0	40.5	48.4	0.0	49.0	44.8	13.1	9.2	50.2	24.9	25.4
Incr Delay (d2), s/veh	5.2	0.0	3.7	1.5	0.0	7.6	44.1	1.0	0.0	11.8	8.6	17.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	5.0	0.3	0.0	0.9	7.9	7.4	0.1	0.5	17.4	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	0.0	44.2	49.9	0.0	56.6	88.9	14.1	9.2	62.0	33.5	43.2
LnGrp LOS	D	A	D	D	A	E	F	B	A	E	C	D
Approach Vol, veh/h		443			43			1308			2209	
Approach Delay, s/veh		45.4			54.7			25.9			37.0	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	66.3		22.7	17.0	55.3		8.1				
Change Period (Y+Rc), s	* 4.2	6.5		5.1	* 4.2	6.5		4.6				
Max Green Setting (Gmax), s	* 5	56.6		34.0	* 13	48.8		34.0				
Max Q Clear Time (g_c+I1), s	2.9	21.1		15.7	13.9	44.2		3.9				
Green Ext Time (p_c), s	0.0	10.0		1.9	0.0	4.2		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	14	5	290	12	130	19	1089	492	243	1606	14
Future Volume (veh/h)	14	14	5	290	12	130	19	1089	492	243	1606	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	15	5	305	13	137	20	1146	518	256	1691	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	178	56	401	294	262	79	2167	673	354	2631	23
Arrive On Green	0.02	0.07	0.07	0.12	0.17	0.17	0.02	0.42	0.42	0.10	0.50	0.50
Sat Flow, veh/h	3456	2656	840	3456	1777	1585	3456	5106	1585	3456	5220	46
Grp Volume(v), veh/h	15	10	10	305	13	137	20	1146	518	256	1103	603
Grp Sat Flow(s),veh/h/ln	1728	1777	1719	1728	1777	1585	1728	1702	1585	1728	1702	1862
Q Serve(g_s), s	0.3	0.4	0.4	6.2	0.4	5.7	0.4	12.1	20.3	5.2	17.3	17.3
Cycle Q Clear(g_c), s	0.3	0.4	0.4	6.2	0.4	5.7	0.4	12.1	20.3	5.2	17.3	17.3
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	62	119	115	401	294	262	79	2167	673	354	1716	939
V/C Ratio(X)	0.24	0.08	0.09	0.76	0.04	0.52	0.25	0.53	0.77	0.72	0.64	0.64
Avail Cap(c_a), veh/h	237	781	756	494	913	814	237	2167	673	503	1716	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	31.9	31.9	31.2	25.6	27.8	35.0	15.5	17.9	31.7	13.2	13.2
Incr Delay (d2), s/veh	2.0	0.3	0.3	5.4	0.1	1.6	1.7	0.9	8.3	3.0	1.9	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	2.8	0.2	2.2	0.2	4.5	8.3	2.3	6.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	32.1	32.2	36.6	25.6	29.4	36.6	16.5	26.2	34.6	15.1	16.6
LnGrp LOS	D	C	C	D	C	C	D	B	C	C	B	B
Approach Vol, veh/h		35			455			1684			1962	
Approach Delay, s/veh		34.3			34.1			19.7			18.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	37.4	12.7	11.1	5.9	43.2	5.5	18.2
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 7	30.9	* 10	32.0	* 5	36.5	* 5	37.4
Max Q Clear Time (g_c+I1), s	7.3	22.3	8.2	2.4	2.4	19.3	2.3	7.7
Green Ext Time (p_c), s	0.3	5.9	0.2	0.1	0.0	11.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	24	79	72	29	55	90	1474	56	87	1538	225
Future Volume (veh/h)	156	24	79	72	29	55	90	1474	56	87	1538	225
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	164	25	83	76	31	58	95	1552	59	92	1619	237
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	33	108	153	42	79	457	2976	113	115	1702	248
Arrive On Green	0.11	0.09	0.09	0.09	0.07	0.07	0.26	0.59	0.59	0.06	0.38	0.38
Sat Flow, veh/h	1781	380	1263	1781	583	1091	1781	5048	192	1781	4500	656
Grp Volume(v), veh/h	164	0	108	76	0	89	95	1047	564	92	1223	633
Grp Sat Flow(s),veh/h/ln	1781	0	1643	1781	0	1674	1781	1702	1836	1781	1702	1752
Q Serve(g_s), s	10.9	0.0	7.7	4.9	0.0	6.2	5.0	21.9	21.9	6.1	41.8	42.2
Cycle Q Clear(g_c), s	10.9	0.0	7.7	4.9	0.0	6.2	5.0	21.9	21.9	6.1	41.8	42.2
Prop In Lane	1.00		0.77	1.00		0.65	1.00		0.10	1.00		0.37
Lane Grp Cap(c), veh/h	190	0	141	153	0	121	457	2007	1082	115	1288	663
V/C Ratio(X)	0.86	0.00	0.77	0.50	0.00	0.73	0.21	0.52	0.52	0.80	0.95	0.95
Avail Cap(c_a), veh/h	190	0	496	157	0	474	457	2007	1082	140	1288	663
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	0.36	0.36	0.36	0.79	0.79	0.79
Uniform Delay (d), s/veh	52.7	0.0	53.7	52.4	0.0	54.5	35.0	14.6	14.6	55.4	36.2	36.3
Incr Delay (d2), s/veh	31.2	0.0	8.3	2.5	0.0	8.3	0.1	0.4	0.7	18.9	13.2	21.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	3.5	2.3	0.0	2.9	2.2	8.3	9.0	3.4	19.4	21.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.9	0.0	62.0	54.9	0.0	62.8	35.1	14.9	15.2	74.3	49.4	58.1
LnGrp LOS	F	A	E	D	A	E	D	B	B	E	D	E
Approach Vol, veh/h		272			165			1706			1948	
Approach Delay, s/veh		75.2			59.1			16.2			53.4	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	77.2	15.4	15.4	37.3	51.9	17.0	13.8
Change Period (Y+Rc), s	* 4.2	6.5	5.1	* 5.1	6.5	* 6.5	* 4.2	5.1
Max Green Setting (Gmax), s	* 9.4	43.8	10.6	* 36	7.8	* 45	* 13	34.0
Max Q Clear Time (g_c+I1), s	8.1	23.9	6.9	9.7	7.0	44.2	12.9	8.2
Green Ext Time (p_c), s	0.0	11.6	0.0	0.6	0.0	1.1	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	342	330	294	283	86	450	1448	536	191	1395	131
Future Volume (veh/h)	144	342	330	294	283	86	450	1448	536	191	1395	131
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	360	347	309	298	91	474	1524	0	201	1468	138
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	531	766	579	344	389	117	517	2123		235	1681	158
Arrive On Green	0.15	0.22	0.22	0.10	0.14	0.14	0.15	0.42	0.00	0.07	0.35	0.35
Sat Flow, veh/h	3456	3554	1585	3456	2694	808	3456	5274	0	3456	4748	446
Grp Volume(v), veh/h	152	360	347	309	195	194	474	1524	0	201	1052	554
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1725	1728	1702	0	1728	1702	1790
Q Serve(g_s), s	4.5	10.3	20.7	10.3	12.2	12.6	15.7	28.9	0.0	6.7	33.6	33.7
Cycle Q Clear(g_c), s	4.5	10.3	20.7	10.3	12.2	12.6	15.7	28.9	0.0	6.7	33.6	33.7
Prop In Lane	1.00		1.00	1.00		0.47	1.00		0.00	1.00		0.25
Lane Grp Cap(c), veh/h	531	766	579	344	257	249	517	2123		235	1205	634
V/C Ratio(X)	0.29	0.47	0.60	0.90	0.76	0.78	0.92	0.72		0.86	0.87	0.87
Avail Cap(c_a), veh/h	531	947	659	344	499	485	517	2123		235	1205	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	39.8	30.0	51.8	47.8	48.0	48.8	28.3	0.0	53.7	35.2	35.2
Incr Delay (d2), s/veh	0.3	0.4	1.2	24.9	4.6	5.3	21.4	2.1	0.0	25.5	8.9	15.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.5	8.0	5.6	5.7	5.8	8.3	12.0	0.0	3.7	15.2	17.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	40.3	31.2	76.7	52.4	53.3	70.2	30.4	0.0	79.2	44.1	50.6
LnGrp LOS	D	D	C	E	D	D	E	C		E	D	D
Approach Vol, veh/h		859			698			1998	A		1807	
Approach Delay, s/veh		37.3			63.4			39.9			50.0	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	54.9	15.8	31.3	21.6	47.7	24.1	23.0
Change Period (Y+Rc), s	6.5	* 6.5	* 4.2	6.2	* 4.2	6.5	6.2	* 6.2
Max Green Setting (Gmax), s	7.9	* 48	* 12	31.0	* 17	38.9	9.9	* 33
Max Q Clear Time (g_c+I1), s	8.7	30.9	12.3	22.7	17.7	35.7	6.5	14.6
Green Ext Time (p_c), s	0.0	10.4	0.0	2.4	0.0	2.6	0.1	2.2

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

Notes

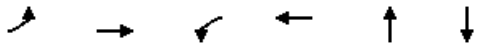
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

APPENDIX B

EXISTING INTERSECTION LEVEL OF SERVICE WORKSHEETS

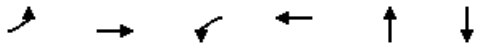
Signal Queueing



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	6	475	177	261	615	47
v/c Ratio	0.05	0.61	0.71	0.19	0.90	0.07
Control Delay	41.0	24.3	52.3	19.7	35.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	24.3	52.3	19.7	35.3	8.2
Queue Length 50th (ft)	3	76	88	44	251	8
Queue Length 95th (ft)	16	140	#197	95	#471	24
Internal Link Dist (ft)		509		264	1550	354
Turn Bay Length (ft)	260		250			
Base Capacity (vph)	113	778	274	1349	871	834
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.61	0.65	0.19	0.71	0.06

Intersection Summary

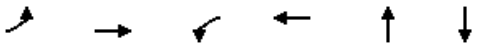
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	357	532	15	780	167	506
v/c Ratio	0.92	0.35	0.21	0.97	0.70	0.97
Control Delay	82.2	27.3	71.9	69.9	71.7	78.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.2	27.3	71.9	69.9	71.7	78.8
Queue Length 50th (ft)	310	150	13	312	140	424
Queue Length 95th (ft)	#386	192	32	320	178	#504
Internal Link Dist (ft)		346		1948	136	1460
Turn Bay Length (ft)	130		125			
Base Capacity (vph)	387	1530	71	804	367	520
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.35	0.21	0.97	0.46	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	560	31	528	79	81
v/c Ratio	0.10	0.21	0.11	0.19	0.24	0.23
Control Delay	16.0	5.1	16.1	5.1	9.8	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	5.1	16.1	5.1	9.8	7.4
Queue Length 50th (ft)	3	0	3	0	3	1
Queue Length 95th (ft)	24	88	26	84	34	28
Internal Link Dist (ft)		1948		1135	222	1401
Turn Bay Length (ft)	130		200			
Base Capacity (vph)	270	2710	270	2718	1244	1220
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.21	0.11	0.19	0.06	0.07

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	440	201	18	7	151	1463	12	8	1573
v/c Ratio	0.87	0.34	0.18	0.07	0.74	0.76	0.01	0.11	0.77
Control Delay	59.3	6.8	59.1	45.6	74.1	26.2	0.0	60.6	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	6.8	59.1	45.6	74.1	26.2	0.0	60.6	34.1
Queue Length 50th (ft)	336	2	14	3	118	463	0	6	397
Queue Length 95th (ft)	#538	60	39	19	#229	#686	0	24	470
Internal Link Dist (ft)		870		249		1330			311
Turn Bay Length (ft)	270		100		250		185	260	
Base Capacity (vph)	508	597	508	503	204	1913	892	74	2031
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.34	0.04	0.01	0.74	0.76	0.01	0.11	0.77

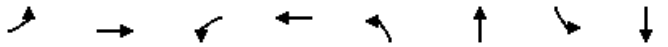
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	18	14	461	263	24	1396	469	157	1440
v/c Ratio	0.06	0.04	0.81	0.41	0.08	0.60	0.48	0.54	0.48
Control Delay	27.5	24.0	38.4	7.2	27.6	13.9	3.3	35.2	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	24.0	38.4	7.2	27.6	13.9	3.3	35.2	9.3
Queue Length 50th (ft)	3	2	78	3	4	116	0	26	73
Queue Length 95th (ft)	12	10	#187	33	15	225	52	#70	234
Internal Link Dist (ft)		1388		764		1747			298
Turn Bay Length (ft)	315		380		250		240	250	
Base Capacity (vph)	291	1862	571	1992	291	2339	981	291	2993
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.01	0.81	0.13	0.08	0.60	0.48	0.54	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	47	61	88	28	1735	53	1829
v/c Ratio	0.55	0.24	0.31	0.39	0.22	0.62	0.40	0.63
Control Delay	48.9	16.5	37.2	16.7	37.1	13.8	42.1	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	16.5	37.2	16.7	37.1	13.8	42.1	12.8
Queue Length 50th (ft)	35	4	27	6	12	206	23	155
Queue Length 95th (ft)	#98	33	#74	46	37	284	#59	306
Internal Link Dist (ft)		345		406		1002		1747
Turn Bay Length (ft)	60		80		190		240	
Base Capacity (vph)	146	825	194	832	126	2790	131	2908
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.06	0.31	0.11	0.22	0.62	0.40	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	187	176	295	699	413	144	1702	73	1753
v/c Ratio	0.55	0.51	0.64	0.83	0.48	0.70	0.78	0.46	0.86
Control Delay	53.5	52.1	25.1	49.6	34.1	69.3	30.0	61.2	35.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	52.1	25.1	49.6	34.1	69.3	30.0	61.2	35.2
Queue Length 50th (ft)	65	63	89	241	118	52	375	26	404
Queue Length 95th (ft)	104	98	184	#342	169	#101	460	52	493
Internal Link Dist (ft)		1135			601		320		1002
Turn Bay Length (ft)	150		130	200		260		310	
Base Capacity (vph)	391	1001	461	846	1437	207	2186	159	2043
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.18	0.64	0.83	0.29	0.70	0.78	0.46	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	48	437	73	380	147	141
v/c Ratio	0.23	0.24	0.31	0.20	0.55	0.45
Control Delay	28.3	9.7	28.5	8.7	26.3	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	9.7	28.5	8.7	26.3	18.9
Queue Length 50th (ft)	17	43	25	35	39	27
Queue Length 95th (ft)	47	88	63	74	91	74
Internal Link Dist (ft)		509		264	1550	354
Turn Bay Length (ft)	260		250			
Base Capacity (vph)	324	1795	414	1902	829	932
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.24	0.18	0.20	0.18	0.15

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	23	653	52	670	28	94
v/c Ratio	0.09	0.38	0.21	0.34	0.10	0.27
Control Delay	25.5	13.6	26.1	10.5	18.7	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	13.6	26.1	10.5	18.7	20.2
Queue Length 50th (ft)	6	63	13	36	4	19
Queue Length 95th (ft)	28	157	48	160	26	63
Internal Link Dist (ft)		346		1948	136	1460
Turn Bay Length (ft)	130		125			
Base Capacity (vph)	243	1748	248	1983	1129	1133
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.37	0.21	0.34	0.02	0.08

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	17	636	68	772	72	39
v/c Ratio	0.08	0.28	0.32	0.30	0.28	0.16
Control Delay	19.4	8.3	23.0	5.9	13.0	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	8.3	23.0	5.9	13.0	13.1
Queue Length 50th (ft)	4	57	16	40	7	4
Queue Length 95th (ft)	18	100	46	124	33	23
Internal Link Dist (ft)		1948		1135	222	1401
Turn Bay Length (ft)	130		200			
Base Capacity (vph)	208	2238	212	2533	954	925
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.28	0.32	0.30	0.08	0.04

Intersection Summary

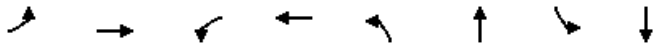
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	246	197	12	31	208	1085	15	16	2193
v/c Ratio	0.73	0.43	0.11	0.25	0.95	0.51	0.02	0.19	0.94
Control Delay	53.7	8.5	52.9	33.0	98.8	16.1	0.0	58.4	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	8.5	52.9	33.0	98.8	16.1	0.0	58.4	36.5
Queue Length 50th (ft)	163	1	8	7	147	208	0	11	526
Queue Length 95th (ft)	255	61	29	40	#337	401	0	37	#783
Internal Link Dist (ft)		870		249		1330			311
Turn Bay Length (ft)	270		100		250		185	260	
Base Capacity (vph)	580	651	580	564	218	2133	985	85	2344
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.30	0.02	0.05	0.95	0.51	0.02	0.19	0.94

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	15	20	305	150	20	1146	518	256	1706
v/c Ratio	0.06	0.07	0.61	0.25	0.08	0.51	0.53	0.54	0.57
Control Delay	34.6	28.5	35.6	8.0	34.7	16.4	3.9	34.1	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	28.5	35.6	8.0	34.7	16.4	3.9	34.1	12.1
Queue Length 50th (ft)	3	3	60	2	4	111	0	49	98
Queue Length 95th (ft)	12	14	116	28	15	203	58	98	297
Internal Link Dist (ft)		1388		764		1747			298
Turn Bay Length (ft)	315		380		250		240	250	
Base Capacity (vph)	244	1553	508	1689	244	2235	986	517	3007
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.01	0.60	0.09	0.08	0.51	0.53	0.50	0.57

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	164	108	76	89	95	1611	92	1856
v/c Ratio	0.88	0.47	0.43	0.51	0.83	0.57	0.53	0.63
Control Delay	94.1	23.7	57.7	32.0	102.6	19.2	61.9	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.1	23.7	57.7	32.0	102.6	19.2	61.9	17.4
Queue Length 50th (ft)	127	19	56	23	74	277	69	313
Queue Length 95th (ft)	#252	74	105	73	#173	397	120	419
Internal Link Dist (ft)		345		406		1002		1747
Turn Bay Length (ft)	60		80		190		240	
Base Capacity (vph)	188	555	189	517	115	2822	179	2957
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.19	0.40	0.17	0.83	0.57	0.51	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	152	360	347	309	389	474	2088	201	1606
v/c Ratio	0.41	0.67	0.51	0.82	0.69	0.84	0.91	0.78	0.86
Control Delay	48.5	48.4	18.1	64.2	45.1	57.3	32.6	69.5	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	48.4	18.1	64.2	45.1	57.3	32.6	69.5	36.4
Queue Length 50th (ft)	50	121	108	106	120	160	444	69	356
Queue Length 95th (ft)	86	170	193	#187	170	#259	#618	#135	#459
Internal Link Dist (ft)		1135			601		320		1002
Turn Bay Length (ft)	150		130	200		260		310	
Base Capacity (vph)	367	1044	677	379	1086	568	2298	258	1871
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.34	0.51	0.82	0.36	0.83	0.91	0.78	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX B

EXISTING INTERSECTION LEVEL OF SERVICE WORKSHEETS

With Southbound Right-Turn at El Camino Real/Poinsettia Lane

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.524
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	23	1326	446	149	1354	14	17	10	3	438	16	234
Growth 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
Initial Bse:	23	1326	446	149	1354	14	17	10	3	438	16	234
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	1326	446	149	1354	14	17	10	3	438	16	234
User 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
PHF 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
PHF Volume:	23	1326	446	149	1354	14	17	10	3	438	16	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	1326	446	149	1354	14	17	10	3	438	16	234
PCE 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
MLF 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
FinalVolume:	23	1326	446	149	1354	14	17	10	3	438	16	234
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.54	0.46	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4800	1600	3200	2462	738	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.28	0.28	0.05	0.28	0.01	0.01	0.00	0.00	0.14	0.01	0.15
Crit Moves:		****			****			****				****

Poinsettia Reach E (LSA Project No. HCR1803)
Existing
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.530
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	19	1089	492	243	1606	14	14	14	5	290	12	130
Growth 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
Initial Bse:	19	1089	492	243	1606	14	14	14	5	290	12	130
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	1089	492	243	1606	14	14	14	5	290	12	130
User 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
PHF 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
PHF Volume:	19	1089	492	243	1606	14	14	14	5	290	12	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	1089	492	243	1606	14	14	14	5	290	12	130
PCE 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
MLF 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
FinalVolume:	19	1089	492	243	1606	14	14	14	5	290	12	130
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.47	0.53	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4800	1600	3200	2358	842	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.23	0.31	0.08	0.33	0.01	0.00	0.01	0.01	0.09	0.01	0.08
Crit Moves:			****	****				****		****		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	10	3	438	16	234	23	1326	446	149	1354	14
Future Volume (veh/h)	17	10	3	438	16	234	23	1326	446	149	1354	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	18	11	3	461	17	246	24	1396	469	157	1425	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	219	57	497	358	319	93	2032	631	241	2251	699
Arrive On Green	0.02	0.08	0.08	0.14	0.20	0.20	0.03	0.40	0.40	0.07	0.44	0.44
Sat Flow, veh/h	3456	2789	728	3456	1777	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	18	7	7	461	17	246	24	1396	469	157	1425	15
Grp Sat Flow(s),veh/h/ln	1728	1777	1739	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	0.3	0.2	0.3	9.0	0.5	10.0	0.5	15.4	17.2	3.0	14.7	0.4
Cycle Q Clear(g_c), s	0.3	0.2	0.3	9.0	0.5	10.0	0.5	15.4	17.2	3.0	14.7	0.4
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	140	137	497	358	319	93	2032	631	241	2251	699
V/C Ratio(X)	0.25	0.05	0.05	0.93	0.05	0.77	0.26	0.69	0.74	0.65	0.63	0.02
Avail Cap(c_a), veh/h	254	835	817	497	960	856	254	2032	631	254	2251	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	29.0	29.0	28.8	21.9	25.7	32.5	17.0	17.5	30.9	14.8	10.7
Incr Delay (d2), s/veh	1.7	0.1	0.2	23.7	0.1	4.0	1.5	1.9	7.8	5.4	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	0.2	0.1	0.1	5.2	0.2	3.9	0.2	5.8	7.0	1.4	5.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	29.2	29.2	52.5	22.0	29.7	33.9	18.9	25.3	36.3	16.1	10.8
LnGrp LOS	C	C	C	D	C	C	C	B	C	D	B	B
Approach Vol, veh/h		32			724			1889			1597	
Approach Delay, s/veh		32.2			44.0			20.7			18.1	
Approach LOS		C			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	33.6	14.0	11.6	6.0	36.5	5.6	19.9
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 5	27.1	* 9.8	32.0	* 5	27.1	* 5	36.8
Max Q Clear Time (g_c+I1), s	5.0	19.2	11.0	2.3	2.5	16.7	2.3	12.0
Green Ext Time (p_c), s	0.0	6.0	0.0	0.0	0.0	6.8	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	14	461	263	24	1396	469	157	1425	15
v/c Ratio	0.06	0.04	0.81	0.41	0.08	0.60	0.48	0.54	0.48	0.01
Control Delay	27.5	24.0	38.4	7.2	27.6	13.9	3.3	35.2	9.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	24.0	38.4	7.2	27.6	13.9	3.3	35.2	9.2	0.0
Queue Length 50th (ft)	3	2	78	3	4	116	0	26	72	0
Queue Length 95th (ft)	12	10	#187	33	15	225	52	#70	231	0
Internal Link Dist (ft)		1388		764		1747			298	
Turn Bay Length (ft)	315		380		250		240	250		
Base Capacity (vph)	291	1862	571	1992	291	2339	981	291	2997	1007
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.01	0.81	0.13	0.08	0.60	0.48	0.54	0.48	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	14	5	290	12	130	19	1089	492	243	1606	14
Future Volume (veh/h)	14	14	5	290	12	130	19	1089	492	243	1606	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	15	5	305	13	137	20	1146	518	256	1691	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	178	56	401	294	262	79	2167	673	354	2574	799
Arrive On Green	0.02	0.07	0.07	0.12	0.17	0.17	0.02	0.42	0.42	0.10	0.50	0.50
Sat Flow, veh/h	3456	2656	840	3456	1777	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	15	10	10	305	13	137	20	1146	518	256	1691	15
Grp Sat Flow(s),veh/h/ln	1728	1777	1719	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	0.3	0.4	0.4	6.2	0.4	5.7	0.4	12.1	20.3	5.2	17.9	0.3
Cycle Q Clear(g_c), s	0.3	0.4	0.4	6.2	0.4	5.7	0.4	12.1	20.3	5.2	17.9	0.3
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	119	115	401	294	262	79	2167	673	354	2574	799
V/C Ratio(X)	0.24	0.08	0.09	0.76	0.04	0.52	0.25	0.53	0.77	0.72	0.66	0.02
Avail Cap(c_a), veh/h	237	781	756	494	913	814	237	2167	673	503	2574	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	31.9	31.9	31.2	25.6	27.8	35.0	15.5	17.9	31.7	13.4	9.0
Incr Delay (d2), s/veh	2.0	0.3	0.3	5.4	0.1	1.6	1.7	0.9	8.3	3.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	2.8	0.2	2.2	0.2	4.5	8.3	2.3	6.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	32.1	32.2	36.6	25.6	29.4	36.6	16.5	26.2	34.6	14.7	9.1
LnGrp LOS	D	C	C	D	C	C	D	B	C	C	B	A
Approach Vol, veh/h		35			455			1684			1962	
Approach Delay, s/veh		34.3			34.1			19.7			17.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	37.4	12.7	11.1	5.9	43.2	5.5	18.2
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 11	30.9	* 10	32.0	* 5	36.5	* 5	37.4
Max Q Clear Time (g_c+I1), s	7.2	22.3	8.2	2.4	2.4	19.9	2.3	7.7
Green Ext Time (p_c), s	0.3	5.9	0.2	0.1	0.0	11.2	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	15	20	305	150	20	1146	518	256	1691	15
v/c Ratio	0.06	0.07	0.61	0.25	0.08	0.51	0.53	0.54	0.56	0.01
Control Delay	34.6	28.5	35.6	8.0	34.7	16.4	3.9	34.1	12.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	28.5	35.6	8.0	34.7	16.4	3.9	34.1	12.0	0.0
Queue Length 50th (ft)	3	3	60	2	4	111	0	49	97	0
Queue Length 95th (ft)	12	14	116	28	15	203	58	98	293	0
Internal Link Dist (ft)		1388		764		1747			298	
Turn Bay Length (ft)	315		380		250		240	250		
Base Capacity (vph)	244	1553	508	1689	244	2235	986	517	3010	1004
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.01	0.60	0.09	0.08	0.51	0.53	0.50	0.56	0.01

Intersection Summary

APPENDIX C

MULTIMODAL LEVEL OF SERVICE WORKSHEETS

ROADWAY INFO

Roadway Name	Poinsettia Lane
From	Aviara Parkway
To	Ambrosia Lane
Street Typology from Mobility Element	Arterial Connector
Average Daily Traffic (ADT) volume (2-way total)	

PEDESTRIAN

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	WB
* Are crosswalks marked per CA MUTCD standards?	Yes	Yes
* Minimum Sidewalk Unobstructed Width in Feet (Minimum ADA unobstructed width requirement is 4'):	10	10
* Do sidewalks meet ADA requirements (e.g., cross-slope and trip hazards)?	Yes	Yes
* Do ramps and landings meet ADA requirements?	Yes	Yes
* Do the street light locations appear adequate?	Yes	Yes
Speed limit (miles per hour - mph):	higher than 35 mph	higher than 35 mph
Number of Through Lanes:	2	2
Are there 3 lanes or less to be crossed without pedestrian refuge? (Include turn lanes in count)	Yes	Yes
Width (ft.) of landscaped buffer between pedestrian facility and vehicle travel way:	0' to 2'	0' to 2'
Does on-street parking or a bike lane provide 6' or more buffer between pedestrians and vehicle travel way?	No	No
Any apparent sight distance issues at intersections and pedestrian crossings?	No	No
Are there any permanent speed control devices installed?	No	No
Are there traffic calming measures that reduce crossing width (e.g., bulbouts, chokers, right-turn median island)?	No	No
Are crosswalks high visibility?	Yes	Yes
Are there intersection enhancements provided for pedestrians (e.g., pedestrian signal phasing, countdown heads)?	Yes	Yes
Are there Rectangular Rapid Flashing Beacons (RRFBs) at street crossings?	No	No
Is there pedestrian scale lighting?	No	No
Are there active building frontages on 80% of street curb line?	No	No
Is the street furniture oriented towards businesses or attractions?	No	No
Do the street trees provide shade over more than 50% of the sidewalk length?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Poinsettia Lane
From	Aviara Parkway
To	Ambrosia Lane
Street Typology from Mobility Element	Arterial Connector
Average Daily Traffic (ADT) volume (2-way total)	

BICYCLE

EB SCORE | LOS	WB SCORE | LOS
80 | B	80 | B

	Roadway Direction	
	EB	**WB**
* Are the roadway pavement conditions good (e.g., no pot holes)?	Yes	Yes
* Is bike facility on roadway free of obstructions (e.g., drainage grates)?	Yes	Yes
* Does the bicycle facility meet MUTCD signing and striping design guidelines?	Yes	Yes
Is on-street parking provided?	No	No
Speed limit (miles per hour - mph):	higher than 35 mph	higher than 35 mph
Does the bikeway on the study segment and side streets meet and/or exceed the Bicycle Master Plan?	Both	Both
Is there enhanced bicycle detection or video detection provided at intersections?	Yes	Yes
Any bicycle racks are provided along segment?	No	No
Bicycle Facility Provided:	Bike Lane	Bike Lane
	Lane Width (ft)	Lane Width (ft)
	5	5
	Bicycle Buffer Width (ft)	Bicycle Buffer Width (ft)
	0	0
	Bike lanes are striped continuously through the study segment?	Bike lanes are striped continuously through the study segment?
	Yes	Yes

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Poinsettia Lane
From	Ambrosia Lane
To	Cassia Road
Street Typology from Mobility Element	Arterial Connector
Average Daily Traffic (ADT) volume (2-way total)	

PEDESTRIAN

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	WB
* Are crosswalks marked per CA MUTCD standards?	Yes	Yes
* Minimum Sidewalk Unobstructed Width in Feet (Minimum ADA unobstructed width requirement is 4'):	10	10
* Do sidewalks meet ADA requirements (e.g., cross-slope and trip hazards)?	Yes	Yes
* Do ramps and landings meet ADA requirements?	Yes	Yes
* Do the street light locations appear adequate?	Yes	Yes
Speed limit (miles per hour - mph):	25 mph or lower	25 mph or lower
Number of Through Lanes:	1	2
Are there 3 lanes or less to be crossed without pedestrian refuge? (Include turn lanes in count)	No	No
Width (ft.) of landscaped buffer between pedestrian facility and vehicle travel way:	0' to 2'	0' to 2'
Does on-street parking or a bike lane provide 6' or more buffer between pedestrians and vehicle travel way?	No	No
Any apparent sight distance issues at intersections and pedestrian crossings?	No	No
Are there any permanent speed control devices installed?	No	No
Are there traffic calming measures that reduce crossing width (e.g., bulbouts, chokers, right-turn median island)?	No	No
Are crosswalks high visibility?	Yes	Yes
Are there intersection enhancements provided for pedestrians (e.g., pedestrian signal phasing, countdown heads)?	Yes	Yes
Are there Rectangular Rapid Flashing Beacons (RRFBs) at street crossings?	No	No
Is there pedestrian scale lighting?	No	No
Are there active building frontages on 80% of street curb line?	No	No
Is the street furniture oriented towards businesses or attractions?	No	No
Do the street trees provide shade over more than 50% of the sidewalk length?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Poinsettia Lane
From	Aviara Parkway
To	Ambrosia Lane
Street Typology from Mobility Element	Arterial Connector
Average Daily Traffic (ADT) volume (2-way total)	

BICYCLE

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	**WB**
* Are the roadway pavement conditions good (e.g., no pot holes)?	Yes	Yes
* Is bike facility on roadway free of obstructions (e.g., drainage grates)?	Yes	Yes
* Does the bicycle facility meet MUTCD signing and striping design guidelines?	Yes	Yes
Is on-street parking provided?	No	No
Speed limit (miles per hour - mph):	25 mph or lower	25 mph or lower
Does the bikeway on the study segment and side streets meet and/or exceed the Bicycle Master Plan?	Both	Both
Is there enhanced bicycle detection or video detection provided at intersections?	Yes	Yes
Any bicycle racks are provided along segment?	No	No
Bicycle Facility Provided:	Bike Lane	Bike Lane
	Lane Width (ft): 5	Lane Width (ft): 5
	Bicycle Buffer Width (ft): 0	Bicycle Buffer Width (ft): 0
	Bike lanes are striped continuously through the study segment? Yes	Bike lanes are striped continuously through the study segment? Yes

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Poinsettia Lane
From	Cassia Road
To	El Camino Real
Street Typology from Mobility Element	Arterial Connector
Average Daily Traffic (ADT) volume (2-way total)	

PEDESTRIAN

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	**WB**
* Are crosswalks marked per CA MUTCD standards?	Yes	Yes
* Minimum Sidewalk Unobstructed Width in Feet (Minimum ADA unobstructed width requirement is 4'):	10	10
* Do sidewalks meet ADA requirements (e.g., cross-slope and trip hazards)?	Yes	Yes
* Do ramps and landings meet ADA requirements?	Yes	Yes
* Do the street light locations appear adequate?	Yes	Yes
Speed limit (miles per hour - mph):	higher than 35 mph	higher than 35 mph
Number of Through Lanes:	2	2
Are there 3 lanes or less to be crossed without pedestrian refuge? (Include turn lanes in count)	No	No
Width (ft.) of landscaped buffer between pedestrian facility and vehicle travel way:	0' to 2'	0' to 2'
Does on-street parking or a bike lane provide 6' or more buffer between pedestrians and vehicle travel way?	No	No
Any apparent sight distance issues at intersections and pedestrian crossings?	No	No
Are there any permanent speed control devices installed?	No	No
Are there traffic calming measures that reduce crossing width (e.g., bulbouts, chokers, right-turn median island)?	Yes	No
Are crosswalks high visibility?	Yes	Yes
Are there intersection enhancements provided for pedestrians (e.g., pedestrian signal phasing, countdown heads)?	Yes	Yes
Are there Rectangular Rapid Flashing Beacons (RRFBs) at street crossings?	No	No
Is there pedestrian scale lighting?	No	No
Are there active building frontages on 80% of street curb line?	No	No
Is the street furniture oriented towards businesses or attractions?	No	No
Do the street trees provide shade over more than 50% of the sidewalk length?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Poinsettia Lane
From	Aviara Parkway
To	Ambrosia Lane
Street Typology from Mobility Element	Arterial Connector
Average Daily Traffic (ADT) volume (2-way total)	

BICYCLE

	EB SCORE | LOS	WB SCORE | LOS
	80 | B	80 | B

	Roadway Direction	
	EB	**WB**
* Are the roadway pavement conditions good (e.g., no pot holes)?	Yes	Yes
* Is bike facility on roadway free of obstructions (e.g., drainage grates)?	Yes	Yes
* Does the bicycle facility meet MUTCD signing and striping design guidelines?	Yes	Yes
Is on-street parking provided?	No	No
Speed limit (miles per hour - mph):	higher than 35 mph	higher than 35 mph
Does the bikeway on the study segment and side streets meet and/or exceed the Bicycle Master Plan?	Both	Both
Is there enhanced bicycle detection or video detection provided at intersections?	Yes	Yes
Any bicycle racks are provided along segment?	No	No
Bicycle Facility Provided:	Bike Lane	Bike Lane
	Lane Width (ft)	Lane Width (ft)
	5	5
	Bicycle Buffer Width (ft)	Bicycle Buffer Width (ft)
	0	0
	Bike lanes are striped continuously through the study segment?	Bike lanes are striped continuously through the study segment?
	Yes	Yes

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	El Camino Real
From	Cassia Road
To	Poinsettia Lane
Street Typology from Mobility Element	Arterial
Average Daily Traffic (ADT) volume (2-way total)	

TRANSIT

NB SCORE | LOS	SB SCORE | LOS
72 | C	77 | C

	Roadway Direction	
	NB	**SB**
* **Transit amenities available:**	☑ Bench ☑ Trash Cans ☐ Covered Bus Stop ☐ Well-lit Stops ☐ Stop located within a	☑ Bench ☑ Trash Cans ☑ Covered Bus Stop ☐ Well-lit Stops ☐ Stop located within a
Are the sidewalks or path to the transit stop ADA compliant?	Yes	Yes
Do multiple transit routes stop on the study segment?	No	No
Do any of the routes provide a direct link to a COASTER station or mobility hub?	Yes	Yes
Do any of the routes provide a single transfer to reach a COASTER station or mobility hub?	No	No
Closest distance to existing transit stop:	<= 1/4 mile walk to bus only	<= 1/4 mile walk to bus only
What type of transit priority is present?	None present	None present
Headways between 6:30-8:30 am and 4-6 pm on weekdays:	30 minutes	30 minutes
Is there commute shuttle service provided during the morning and afternoon commute periods?	No	No
On weekends, are the headways no more than 1 hour headways between 9 am-5 pm?	Yes	Yes
Is there bike parking available at the bus stop?	No	No
Is the bus stop within 1/4 mile of a bike repair shop?	No	No
Will there be TDM measures that result in a trip reduction of at least 15%?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

X

Roadway Name	El Camino Real
From	Poinsettia Lane
To	Aviara Parkway
Street Typology from Mobility Element	Arterial
Average Daily Traffic (ADT) volume (2-way total)	

TRANSIT

NB SCORE | LOS	SB SCORE | LOS
77 | C	77 | C

	Roadway Direction	
	NB	**SB**
* **Transit amenities available:**	☑ Bench ☑ Trash Cans ☐ Covered Bus Stop ☐ Well-lit Stops ☑ Stop located within a	☑ Bench ☑ Trash Cans ☐ Covered Bus Stop ☐ Well-lit Stops ☑ Stop located within a
Are the sidewalks or path to the transit stop ADA compliant?	Yes	Yes
Do multiple transit routes stop on the study segment?	No	No
Do any of the routes provide a direct link to a COASTER station or mobility hub?	Yes	Yes
Do any of the routes provide a single transfer to reach a COASTER station or mobility hub?	No	No
Closest distance to existing transit stop:	<= 1/4 mile walk to bus only	<= 1/4 mile walk to bus only
What type of transit priority is present?	None present	None present
Headways between 6:30-8:30 am and 4-6 pm on weekdays:	30 minutes	30 minutes
Is there commute shuttle service provided during the morning and afternoon commute periods?	No	No
On weekends, are the headways no more than 1 hour headways between 9 am-5 pm?	Yes	Yes
Is there bike parking available at the bus stop?	No	No
Is the bus stop within 1/4 mile of a bike repair shop?	No	No
Will there be TDM measures that result in a trip reduction of at least 15%?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Cassia Road
From	Poinsettia Lane
To	El Camino Real
Street Typology from Mobility Element	Local/Neighborhood
Average Daily Traffic (ADT) volume (2-way total)	

PEDESTRIAN

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	WB
* Are crosswalks marked per CA MUTCD standards?	Yes	Yes
* Minimum Sidewalk Unobstructed Width in Feet (Minimum ADA unobstructed width requirement is 4'):	8	8
* Do sidewalks meet ADA requirements (e.g., cross-slope and trip hazards)?	Yes	Yes
* Do ramps and landings meet ADA requirements?	Yes	Yes
* Do the street light locations appear adequate?	Yes	Yes
Speed limit (miles per hour - mph):	35 mph	35 mph
Number of Through Lanes:	1	1
Are there 3 lanes or less to be crossed without pedestrian refuge? (Include turn lanes in count)	Yes	Yes
Width (ft.) of landscaped buffer between pedestrian facility and vehicle travel way:	0' to 2'	0' to 2'
Does on-street parking or a bike lane provide 6' or more buffer between pedestrians and vehicle travel way?	Yes	Yes
Any apparent sight distance issues at intersections and pedestrian crossings?	No	No
Are there any permanent speed control devices installed?	Yes	Yes
Are there traffic calming measures that reduce crossing width (e.g., bulbouts, chokers, right-turn median island)?	No	No
Are crosswalks high visibility?	Yes	Yes
Are there intersection enhancements provided for pedestrians (e.g., pedestrian signal phasing, countdown heads)?	Yes	Yes
Are there Rectangular Rapid Flashing Beacons (RRFBs) at street crossings?	No	No
Is there pedestrian scale lighting?	No	No
Are there active building frontages on 80% of street curb line?	No	No
Is the street furniture oriented towards businesses or attractions?	No	No
Do the street trees provide shade over more than 50% of the sidewalk length?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Cassia Road
From	Poinsettia Lane
To	El Camino Real
Street Typology from Mobility Element	Local/Neighborhood
Average Daily Traffic (ADT) volume (2-way total)	

BICYCLE

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	**WB**
* Are the roadway pavement conditions good (e.g., no pot holes)?	Yes	Yes
* Is bike facility on roadway free of obstructions (e.g., drainage grates)?	Yes	Yes
* Does the bicycle facility meet MUTCD signing and striping design guidelines?	Yes	Yes
Is on-street parking provided?	No	No
Speed limit (miles per hour - mph):	35 mph	35 mph
Does the bikeway on the study segment and side streets meet and/or exceed the Bicycle Master Plan?	Both	Both
Is there enhanced bicycle detection or video detection provided at intersections?	Yes	Yes
Any bicycle racks are provided along segment?	No	No
Bicycle Facility Provided:	Bike Lane	Bike Lane
	Lane Width (ft)	Lane Width (ft)
	6	6
	Bicycle Buffer Width (ft)	Bicycle Buffer Width (ft)
	0	0
	Bike lanes are striped continuously through the study segment?	Bike lanes are striped continuously through the study segment?
	Yes	Yes

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Ambrosia Lane
From	Poinsettia Lane
To	Aviara Parkway
Street Typology from Mobility Element	Schools
Average Daily Traffic (ADT) volume (2-way total)	

PEDESTRIAN

NB SCORE | LOS	SB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	NB	**SB**
* Are crosswalks marked per CA MUTCD standards?	Yes	Yes
* Minimum Sidewalk Unobstructed Width in Feet (Minimum ADA unobstructed width requirement is 4'):	10	10
* Do sidewalks meet ADA requirements (e.g., cross-slope and trip hazards)?	Yes	Yes
* Do ramps and landings meet ADA requirements?	Yes	Yes
* Do the street light locations appear adequate?	Yes	Yes
Speed limit (miles per hour - mph):	35 mph	35 mph
Number of Through Lanes:	1	1
Are there 3 lanes or less to be crossed without pedestrian refuge? (Include turn lanes in count)	Yes	Yes
Width (ft.) of landscaped buffer between pedestrian facility and vehicle travel way:	0' to 2'	0' to 2'
Does on-street parking or a bike lane provide 6' or more buffer between pedestrians and vehicle travel way?	Yes	Yes
Any apparent sight distance issues at intersections and pedestrian crossings?	No	No
Are there any permanent speed control devices installed?	No	No
Are there traffic calming measures that reduce crossing width (e.g., bulbouts, chokers, right-turn median island)?	No	No
Are crosswalks high visibility?	Yes	Yes
Are there intersection enhancements provided for pedestrians (e.g., pedestrian signal phasing, countdown heads)?	Yes	Yes
Are there Rectangular Rapid Flashing Beacons (RRFBs) at street crossings?	No	No
Is there pedestrian scale lighting?	No	No
Are there active building frontages on 80% of street curb line?	No	No
Is the street furniture oriented towards businesses or attractions?	No	No
Do the street trees provide shade over more than 50% of the sidewalk length?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Ambrosia Lane
From	Poinsettia Lane
To	Aviara Parkway
Street Typology from Mobility Element	Schools
Average Daily Traffic (ADT) volume (2-way total)	

BICYCLE

NB SCORE | LOS	SB SCORE | LOS
70 | C	70 | C

	Roadway Direction	
	NB	SB
* Are the roadway pavement conditions good (e.g., no pot holes)?	Yes	Yes
* Is bike facility on roadway free of obstructions (e.g., drainage grates)?	Yes	Yes
* Does the bicycle facility meet MUTCD signing and striping design guidelines?	Yes	Yes
Is on-street parking provided?	Parallel parking	Parallel parking
Speed limit (miles per hour - mph):	35 mph	35 mph
Does the bikeway on the study segment and side streets meet and/or exceed the Bicycle Master Plan?	Both	Both
Is there enhanced bicycle detection or video detection provided at intersections?	Yes	Yes
Any bicycle racks are provided along segment?	No	No
Bicycle Facility Provided:		

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Mimosa Drive
From	Oriole Court
To	Aviara Parkway
Street Typology from Mobility Element	Local/Neighborhood
Average Daily Traffic (ADT) volume (2-way total)	

PEDESTRIAN

NB SCORE | LOS	SB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	NB	**SB**
* Are crosswalks marked per CA MUTCD standards?	Yes	Yes
* Minimum Sidewalk Unobstructed Width in Feet (Minimum ADA unobstructed width requirement is 4'):	9	9
* Do sidewalks meet ADA requirements (e.g., cross-slope and trip hazards)?	Yes	Yes
* Do ramps and landings meet ADA requirements?	Yes	Yes
* Do the street light locations appear adequate?	Yes	Yes
Speed limit (miles per hour - mph):	25 mph or lower	25 mph or lower
Number of Through Lanes:	1	1
Are there 3 lanes or less to be crossed without pedestrian refuge? (Include turn lanes in count)	Yes	Yes
Width (ft.) of landscaped buffer between pedestrian facility and vehicle travel way:	0' to 2'	0' to 2'
Does on-street parking or a bike lane provide 6' or more buffer between pedestrians and vehicle travel way?	Yes	Yes
Any apparent sight distance issues at intersections and pedestrian crossings?	No	No
Are there any permanent speed control devices installed?	No	No
Are there traffic calming measures that reduce crossing width (e.g., bulbouts, chokers, right-turn median island)?	No	No
Are crosswalks high visibility?	Yes	Yes
Are there intersection enhancements provided for pedestrians (e.g., pedestrian signal phasing, countdown heads)?	Yes	Yes
Are there Rectangular Rapid Flashing Beacons (RRFBs) at street crossings?	No	No
Is there pedestrian scale lighting?	No	No
Are there active building frontages on 80% of street curb line?	No	No
Is the street furniture oriented towards businesses or attractions?	No	No
Do the street trees provide shade over more than 50% of the sidewalk length?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Mimosa Drive
From	Oriole Court
To	Aviara Parkway
Street Typology from Mobility Element	Local/Neighborhood
Average Daily Traffic (ADT) volume (2-way total)	

BICYCLE

NB SCORE | LOS	SB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	NB	**SB**
* Are the roadway pavement conditions good (e.g., no pot holes)?	Yes	Yes
* Is bike facility on roadway free of obstructions (e.g., drainage grates)?	Yes	Yes
* Does the bicycle facility meet MUTCD signing and striping design guidelines?	Yes	Yes
Is on-street parking provided?	Parallel parking	Parallel parking
Speed limit (miles per hour - mph):	25 mph or lower	25 mph or lower
Does the bikeway on the study segment and side streets meet and/or exceed the Bicycle Master Plan?	Both	Both
Is there enhanced bicycle detection or video detection provided at intersections?	Yes	Yes
Any bicycle racks are provided along segment?	No	No
Bicycle Facility Provided:		

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Dove Lane
From	Moorhen Place
To	El Camino Real
Street Typology from Mobility Element	Local/Neighborhood
Average Daily Traffic (ADT) volume (2-way total)	

PEDESTRIAN

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	**WB**
* Are crosswalks marked per CA MUTCD standards?	Yes	Yes
* Minimum Sidewalk Unobstructed Width in Feet (Minimum ADA unobstructed width requirement is 4'):	10	10
* Do sidewalks meet ADA requirements (e.g., cross-slope and trip hazards)?	Yes	Yes
* Do ramps and landings meet ADA requirements?	Yes	Yes
* Do the street light locations appear adequate?	Yes	Yes
Speed limit (miles per hour - mph):	35 mph	35 mph
Number of Through Lanes:	1	1
Are there 3 lanes or less to be crossed without pedestrian refuge? (Include turn lanes in count)	Yes	Yes
Width (ft.) of landscaped buffer between pedestrian facility and vehicle travel way:	0' to 2'	0' to 2'
Does on-street parking or a bike lane provide 6' or more buffer between pedestrians and vehicle travel way?	Yes	Yes
Any apparent sight distance issues at intersections and pedestrian crossings?	No	No
Are there any permanent speed control devices installed?	No	No
Are there traffic calming measures that reduce crossing width (e.g., bulbouts, chokers, right-turn median island)?	No	No
Are crosswalks high visibility?	Yes	Yes
Are there intersection enhancements provided for pedestrians (e.g., pedestrian signal phasing, countdown heads)?	Yes	Yes
Are there Rectangular Rapid Flashing Beacons (RRFBs) at street crossings?	No	No
Is there pedestrian scale lighting?	No	No
Are there active building frontages on 80% of street curb line?	No	No
Is the street furniture oriented towards businesses or attractions?	No	No
Do the street trees provide shade over more than 50% of the sidewalk length?	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

ROADWAY INFO

Roadway Name	Dove Lane
From	Moorhen Place
To	El Camino Real
Street Typology from Mobility Element	Local/Neighborhood
Average Daily Traffic (ADT) volume (2-way total)	

BICYCLE

EB SCORE | LOS	WB SCORE | LOS
100 | A	100 | A

	Roadway Direction	
	EB	**WB**
* Are the roadway pavement conditions good (e.g., no pot holes)?	Yes	Yes
* Is bike facility on roadway free of obstructions (e.g., drainage grates)?	Yes	Yes
* Does the bicycle facility meet MUTCD signing and striping design guidelines?	Yes	Yes
Is on-street parking provided?	Parallel parking	Parallel parking
Speed limit (miles per hour - mph):	35 mph	35 mph
Does the bikeway on the study segment and side streets meet and/or exceed the Bicycle Master Plan?	Both	Both
Is there enhanced bicycle detection or video detection provided at intersections?	Yes	Yes
Any bicycle racks are provided along segment?	No	No
Bicycle Facility Provided:	Bike Lane	Bike Lane
	Lane Width (ft)	Lane Width (ft)
	5	5
	Bicycle Buffer Width (ft)	Bicycle Buffer Width (ft)
	0	0
	Bike lanes are striped continuously through the study segment?	Bike lanes are striped continuously through the study segment?
	No	No

* *Indicates an item that strongly supports and promotes the goals identifed in the Climate Action Plan (CAP).*

APPENDIX D

2035 WITHOUT POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

APPENDIX D

2035 WITHOUT POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

ICU Worksheets

Poinsettia Reach E (LSA Project No. HCR1803)
Future
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Ambrosia Ln / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.778
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Street Name:	Ambrosia Ln						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	414	6	245	22	9	14	7	308	212	217	308	12
Growth 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
Initial Bse:	414	6	245	22	9	14	7	308	212	217	308	12
User 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
PHF 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
PHF Volume:	414	6	245	22	9	14	7	308	212	217	308	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	414	6	245	22	9	14	7	308	212	217	308	12
PCE 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
MLF 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
FinalVolume:	414	6	245	22	9	14	7	308	212	217	308	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.62	0.01	0.37	0.49	0.20	0.31	1.00	1.18	0.82	1.00	1.92	0.08
Final Sat.:	996	14	589	782	320	498	1600	1895	1305	1600	3080	120
Capacity Analysis Module:												
Vol/Sat:	0.26	0.42	0.42	0.01	0.03	0.03	0.00	0.16	0.16	0.14	0.10	0.10
Crit Moves:	****			****				****		****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Ambrosia Ln / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.786
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Street Name:	Ambrosia Ln						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 1! 0		0	0 1! 0		1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	8	104	13	239	12	179	300	414	32	12	363	282
Growth 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
Initial Bse:	8	104	13	239	12	179	300	414	32	12	363	282
User 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
PHF 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
PHF Volume:	8	104	13	239	12	179	300	414	32	12	363	282
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	104	13	239	12	179	300	414	32	12	363	282
PCE 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
MLF 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
FinalVolume:	8	104	13	239	12	179	300	414	32	12	363	282
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.06	0.84	0.10	0.55	0.03	0.42	1.00	1.86	0.14	1.00	1.13	0.87
Final Sat.:	102	1331	166	889	45	666	1600	2970	230	1600	1801	1399
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.27	0.27	0.27	0.19	0.14	0.14	0.01	0.20	0.20
Crit Moves:	****			****			****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Mimosa Dr / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.332
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	18	Level Of Service:	A

Street Name:	Mimosa Dr						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	30	8	46	9	1	87	29	561	25	32	541	11
Growth 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
Initial Bse:	30	8	46	9	1	87	29	561	25	32	541	11
User 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
PHF 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
PHF Volume:	30	8	46	9	1	87	29	561	25	32	541	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	8	46	9	1	87	29	561	25	32	541	11
PCE 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
MLF 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
FinalVolume:	30	8	46	9	1	87	29	561	25	32	541	11
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.09	0.55	0.09	0.01	0.90	1.00	1.91	0.09	1.00	1.96	0.04
Final Sat.:	571	152	876	148	16	1435	1600	3063	137	1600	3136	64
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.01	0.06	0.06	0.02	0.18	0.18	0.02	0.17	0.17
Crit Moves:	****				****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 El Camino Real / Cassia Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.836
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	D

Street Name:	El Camino Real						Cassia Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	158	1532	12	9	1437	209	475	5	212	17	4	3
Growth 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
Initial Bse:	158	1532	12	9	1437	209	475	5	212	17	4	3
User 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
PHF 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
PHF Volume:	158	1532	12	9	1437	209	475	5	212	17	4	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	1532	12	9	1437	209	475	5	212	17	4	3
PCE 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
MLF 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
FinalVolume:	158	1532	12	9	1437	209	475	5	212	17	4	3
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.62	0.38	1.00	0.02	0.98	1.00	0.57	0.43
Final Sat.:	1600	3200	1600	1600	4191	609	1600	37	1563	1600	914	686
Capacity Analysis Module:												
Vol/Sat:	0.10	0.48	0.01	0.01	0.34	0.34	0.30	0.14	0.14	0.01	0.00	0.00
Crit Moves:		****		****			****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.614
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	27	1574	529	164	1492	15	21	12	4	535	20	286
Growth 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
Initial Bse:	27	1574	529	164	1492	15	21	12	4	535	20	286
User 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
PHF 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
PHF Volume:	27	1574	529	164	1492	15	21	12	4	535	20	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1574	529	164	1492	15	21	12	4	535	20	286
PCE 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
MLF 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
FinalVolume:	27	1574	529	164	1492	15	21	12	4	535	20	286
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.97	0.03	2.00	1.50	0.50	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4752	48	3200	2400	800	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.33	0.33	0.05	0.31	0.31	0.01	0.01	0.01	0.17	0.01	0.18
Crit Moves:		****			****			****				****

Poinsettia Reach E (LSA Project No. HCR1803)
Future
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 El Camino Real / Dove Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.574
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	A

Street Name:	El Camino Real						Dove Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	32	1927	31	59	1928	135	116	14	55	58	14	69
Growth 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
Initial Bse:	32	1927	31	59	1928	135	116	14	55	58	14	69
User 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
PHF 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
PHF Volume:	32	1927	31	59	1928	135	116	14	55	58	14	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	1927	31	59	1928	135	116	14	55	58	14	69
PCE 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
MLF 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
FinalVolume:	32	1927	31	59	1928	135	116	14	55	58	14	69
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.95	0.05	1.00	2.80	0.20	1.00	0.20	0.80	1.00	0.17	0.83
Final Sat.:	1600	4724	76	1600	4486	314	1600	325	1275	1600	270	1330
Capacity Analysis Module:												
Vol/Sat:	0.02	0.41	0.41	0.04	0.43	0.43	0.07	0.04	0.04	0.04	0.05	0.05
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 El Camino Real / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.884
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	78	Level Of Service:	D

Street Name:	El Camino Real						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	1	1 0
Volume Module:												
Base Vol:	163	1681	237	82	1856	121	196	184	309	732	320	114
Growth 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
Initial Bse:	163	1681	237	82	1856	121	196	184	309	732	320	114
User 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
PHF 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
PHF Volume:	163	1681	237	82	1856	121	196	184	309	732	320	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	1681	237	82	1856	121	196	184	309	732	320	114
PCE 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
MLF 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
FinalVolume:	163	1681	237	82	1856	121	196	184	309	732	320	114
OvlAdjVol:									228			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.63	0.37	2.00	2.82	0.18	2.00	2.00	1.00	2.00	1.47	0.53
Final Sat.:	3200	4207	593	3200	4506	294	3200	3200	1600	3200	2359	841
Capacity Analysis Module:												
Vol/Sat:	0.05	0.40	0.40	0.03	0.41	0.41	0.06	0.06	0.19	0.23	0.14	0.14
OvlAdjV/S:									0.14			
Crit Moves:	****				****				****	****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Ambrosia Ln / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.394
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	20	Level Of Service:	A

Street Name:	Ambrosia Ln						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 1! 0		0	0 1! 0		1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	87	18	53	44	28	63	53	363	115	89	384	81
Growth 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
Initial Bse:	87	18	53	44	28	63	53	363	115	89	384	81
User 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
PHF 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
PHF Volume:	87	18	53	44	28	63	53	363	115	89	384	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	18	53	44	28	63	53	363	115	89	384	81
PCE 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
MLF 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
FinalVolume:	87	18	53	44	28	63	53	363	115	89	384	81
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.55	0.11	0.34	0.32	0.21	0.47	1.00	1.52	0.48	1.00	1.65	0.35
Final Sat.:	881	182	537	521	332	747	1600	2430	770	1600	2643	557
Capacity Analysis Module:												
Vol/Sat:	0.05	0.10	0.10	0.03	0.08	0.08	0.03	0.15	0.15	0.06	0.15	0.15
Crit Moves:	****			****			****			****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Ambrosia Ln / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.380
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	19	Level Of Service:	A

Street Name:	Ambrosia Ln						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	1	0	1 1	0	1	0 1 1 0
Volume Module:												
Base Vol:	10	6	10	77	6	18	25	675	19	54	626	75
Growth 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
Initial Bse:	10	6	10	77	6	18	25	675	19	54	626	75
User 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
PHF 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
PHF Volume:	10	6	10	77	6	18	25	675	19	54	626	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	6	10	77	6	18	25	675	19	54	626	75
PCE 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
MLF 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
FinalVolume:	10	6	10	77	6	18	25	675	19	54	626	75
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.23	0.38	0.76	0.06	0.18	1.00	1.95	0.05	1.00	1.79	0.21
Final Sat.:	615	369	615	1220	95	285	1600	3112	88	1600	2858	342
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.06	0.06	0.06	0.02	0.22	0.22	0.03	0.22	0.22
Crit Moves:	****			****			****			****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Mimosa Dr / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.374
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	19	Level Of Service:	A

Street Name:	Mimosa Dr						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	31	4	41	20	4	23	18	645	21	72	782	26
Growth 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
Initial Bse:	31	4	41	20	4	23	18	645	21	72	782	26
User 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
PHF 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
PHF Volume:	31	4	41	20	4	23	18	645	21	72	782	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	4	41	20	4	23	18	645	21	72	782	26
PCE 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
MLF 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
FinalVolume:	31	4	41	20	4	23	18	645	21	72	782	26
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.41	0.05	0.54	0.43	0.08	0.49	1.00	1.94	0.06	1.00	1.94	0.06
Final Sat.:	653	84	863	681	136	783	1600	3099	101	1600	3097	103
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.01	0.03	0.03	0.01	0.21	0.21	0.05	0.25	0.25
Crit Moves:		****			****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 El Camino Real / Cassia Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.849
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	65	Level Of Service:	D

Street Name:	El Camino Real						Cassia Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	218	1136	15	17	1851	445	266	2	210	11	10	19
Growth 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
Initial Bse:	218	1136	15	17	1851	445	266	2	210	11	10	19
User 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
PHF 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
PHF Volume:	218	1136	15	17	1851	445	266	2	210	11	10	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	218	1136	15	17	1851	445	266	2	210	11	10	19
PCE 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
MLF 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
FinalVolume:	218	1136	15	17	1851	445	266	2	210	11	10	19
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.42	0.58	1.00	0.01	0.99	1.00	0.34	0.66
Final Sat.:	1600	3200	1600	1600	3870	930	1600	15	1585	1600	552	1048
Capacity Analysis Module:												
Vol/Sat:	0.14	0.36	0.01	0.01	0.48	0.48	0.17	0.13	0.13	0.01	0.02	0.02
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.617
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	23	1293	584	268	1770	15	17	17	6	354	15	159
Growth 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
Initial Bse:	23	1293	584	268	1770	15	17	17	6	354	15	159
User 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
PHF 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
PHF Volume:	23	1293	584	268	1770	15	17	17	6	354	15	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	1293	584	268	1770	15	17	17	6	354	15	159
PCE 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
MLF 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
FinalVolume:	23	1293	584	268	1770	15	17	17	6	354	15	159
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.97	0.03	2.00	1.48	0.52	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4760	40	3200	2365	835	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.27	0.37	0.08	0.37	0.37	0.01	0.01	0.01	0.11	0.01	0.10
Crit Moves:			****	****				****		****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 El Camino Real / Dove Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.704
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	C

Street Name:	El Camino Real						Dove Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	107	1750	66	103	1826	267	238	37	121	72	29	55
Growth 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
Initial Bse:	107	1750	66	103	1826	267	238	37	121	72	29	55
User 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
PHF 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
PHF Volume:	107	1750	66	103	1826	267	238	37	121	72	29	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	1750	66	103	1826	267	238	37	121	72	29	55
PCE 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
MLF 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
FinalVolume:	107	1750	66	103	1826	267	238	37	121	72	29	55
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.89	0.11	1.00	2.62	0.38	1.00	0.23	0.77	1.00	0.35	0.65
Final Sat.:	1600	4626	174	1600	4188	612	1600	375	1225	1600	552	1048
Capacity Analysis Module:												
Vol/Sat:	0.07	0.38	0.38	0.06	0.44	0.44	0.15	0.10	0.10	0.05	0.05	0.05
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 El Camino Real / Aviara Pkwy

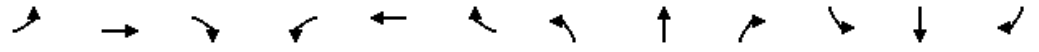
Cycle (sec):	100	Critical Vol./Cap.(X):	0.831
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Street Name:	El Camino Real						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	1	1 0
Volume Module:												
Base Vol:	534	1719	636	227	1656	155	159	377	364	324	312	95
Growth 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
Initial Bse:	534	1719	636	227	1656	155	159	377	364	324	312	95
User 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
PHF 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
PHF Volume:	534	1719	636	227	1656	155	159	377	364	324	312	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	534	1719	636	227	1656	155	159	377	364	324	312	95
PCE 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
MLF 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
FinalVolume:	534	1719	636	227	1656	155	159	377	364	324	312	95
OvlAdjVol:									97			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.19	0.81	2.00	2.74	0.26	2.00	2.00	1.00	2.00	1.53	0.47
Final Sat.:	3200	3504	1296	3200	4389	411	3200	3200	1600	3200	2453	747
Capacity Analysis Module:												
Vol/Sat:	0.17	0.49	0.49	0.07	0.38	0.38	0.05	0.12	0.23	0.10	0.13	0.13
OvlAdjV/S:									0.06			
Crit Moves:		****			****			****			****	

APPENDIX D

2035 WITHOUT POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

HCM Worksheets



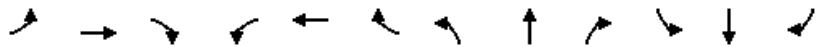
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	308	212	217	308	12	414	6	245	22	9	14
Future Volume (veh/h)	7	308	212	217	308	12	414	6	245	22	9	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	324	223	228	324	13	436	6	258	23	9	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	356	240	264	1094	44	528	6	272	398	161	233
Arrive On Green	0.01	0.18	0.18	0.15	0.31	0.31	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1781	2033	1368	1781	3483	139	914	13	541	667	319	462
Grp Volume(v), veh/h	7	282	265	228	165	172	700	0	0	47	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1624	1781	1777	1845	1467	0	0	1449	0	0
Q Serve(g_s), s	0.3	13.4	13.8	10.8	6.0	6.1	37.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	13.4	13.8	10.8	6.0	6.1	39.0	0.0	0.0	1.2	0.0	0.0
Prop In Lane	1.00		0.84	1.00		0.08	0.62		0.37	0.49		0.32
Lane Grp Cap(c), veh/h	16	311	285	264	558	580	807	0	0	792	0	0
V/C Ratio(X)	0.44	0.91	0.93	0.86	0.30	0.30	0.87	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	103	311	285	273	558	580	864	0	0	845	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	34.8	35.0	35.9	22.3	22.3	20.1	0.0	0.0	10.9	0.0	0.0
Incr Delay (d2), s/veh	17.8	31.9	38.1	23.4	1.3	1.3	8.9	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	8.4	8.3	6.3	2.7	2.8	14.0	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	66.8	73.1	59.3	23.7	23.7	29.1	0.0	0.0	10.9	0.0	0.0
LnGrp LOS	E	E	E	E	C	C	C	A	A	B	A	A
Approach Vol, veh/h		554			565			700			47	
Approach Delay, s/veh		69.7			38.0			29.1			10.9	
Approach LOS		E			D			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	47.9	17.0	21.3	47.9	5.0	33.3
Change Period (Y+Rc), s	4.5	* 4.2	6.2	4.5	* 4.2	* 6.2
Max Green Setting (Gmax), s	46.8	* 13	15.1	46.8	* 5	* 24
Max Q Clear Time (g_c+I1), s	41.0	12.8	15.8	3.2	2.3	8.1
Green Ext Time (p_c), s	2.5	0.0	0.0	0.3	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	414	32	12	363	282	8	104	13	239	12	179
Future Volume (veh/h)	300	414	32	12	363	282	8	104	13	239	12	179
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	400	552	43	16	484	376	11	139	17	319	16	239
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	1281	100	32	362	281	14	176	21	269	14	202
Arrive On Green	0.21	0.38	0.38	0.02	0.19	0.19	0.12	0.12	0.12	0.29	0.29	0.29
Sat Flow, veh/h	1781	3341	260	1781	1904	1477	121	1524	186	943	47	706
Grp Volume(v), veh/h	400	293	302	16	452	408	167	0	0	574	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1824	1781	1777	1605	1831	0	0	1696	0	0
Q Serve(g_s), s	21.0	12.1	12.2	0.9	18.9	18.9	8.8	0.0	0.0	28.4	0.0	0.0
Cycle Q Clear(g_c), s	21.0	12.1	12.2	0.9	18.9	18.9	8.8	0.0	0.0	28.4	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.92	0.07		0.10	0.56		0.42
Lane Grp Cap(c), veh/h	376	682	700	32	338	305	211	0	0	485	0	0
V/C Ratio(X)	1.06	0.43	0.43	0.50	1.34	1.34	0.79	0.00	0.00	1.18	0.00	0.00
Avail Cap(c_a), veh/h	376	682	700	90	338	305	499	0	0	485	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.2	22.6	22.6	48.3	40.2	40.2	42.8	0.0	0.0	35.5	0.0	0.0
Incr Delay (d2), s/veh	63.9	0.4	0.4	11.6	170.0	172.9	6.5	0.0	0.0	102.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.0	5.2	0.5	24.1	22.0	4.3	0.0	0.0	25.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.1	23.0	23.0	59.9	210.2	213.1	49.3	0.0	0.0	137.7	0.0	0.0
LnGrp LOS	F	C	C	E	F	F	D	A	A	F	A	A
Approach Vol, veh/h		995			876			167			574	
Approach Delay, s/veh		55.2			208.8			49.3			137.7	
Approach LOS		E			F			D			F	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	16.1	6.0	44.3	33.0	25.2	25.1
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	27.1	* 5	34.9	28.4	* 21	18.9
Max Q Clear Time (g_c+I1), s	10.8	2.9	14.2	30.4	23.0	20.9
Green Ext Time (p_c), s	0.8	0.0	3.6	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	124.5
HCM 6th LOS	F

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	48	0	4	0	6	34	5	8	0
Future Volume (Veh/h)	0	0	0	48	0	4	0	6	34	5	8	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	51	0	4	0	6	36	5	8	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	4			0			106	106	0	141	102	0
vC1, stage 1 conf vol							0	0		102	102	
vC2, stage 2 conf vol							106	106		39	0	
vCu, unblocked vol	4			0			106	106	0	141	102	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	99	97	99	99	100
cM capacity (veh/h)	1618			1623			786	711	1085	757	712	1085

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	51	4	42	13
Volume Left	51	0	0	5
Volume Right	0	4	36	0
cSH	1623	1700	1009	729
Volume to Capacity	0.03	0.00	0.04	0.02
Queue Length 95th (ft)	2	0	3	1
Control Delay (s)	7.3	0.0	8.7	10.0
Lane LOS	A		A	B
Approach Delay (s)	6.8		8.7	10.0
Approach LOS			A	B

Intersection Summary				
Average Delay	7.9			
Intersection Capacity Utilization	14.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	5	29	11	14	49
Future Vol, veh/h	13	5	29	11	14	49
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	5	31	12	15	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	119	37	0	0	43	0
Stage 1	37	-	-	-	-	-
Stage 2	82	-	-	-	-	-
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	877	1035	-	-	1566	-
Stage 1	985	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	868	1035	-	-	1566	-
Mov Cap-2 Maneuver	868	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	909	1566	-
HCM Lane V/C Ratio	-	-	0.021	0.009	-
HCM Control Delay (s)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	20	8	8	9	1
Future Vol, veh/h	5	20	8	8	9	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	21	8	8	9	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	40	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1588	-	972	1063
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1588	-	967	1063
Mov Cap-2 Maneuver	-	-	-	-	967	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	999	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	976	-	-	1588	-
HCM Lane V/C Ratio	0.011	-	-	0.005	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	561	25	32	541	11	30	8	46	9	1	87
Future Volume (veh/h)	29	561	25	32	541	11	30	8	46	9	1	87
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	31	591	26	34	569	12	32	8	48	9	1	92
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1500	66	71	1550	33	191	31	105	118	8	168
Arrive On Green	0.04	0.43	0.43	0.04	0.44	0.44	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3467	152	1781	3559	75	481	265	895	89	66	1434
Grp Volume(v), veh/h	31	303	314	34	284	297	88	0	0	102	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1857	1641	0	0	1590	0	0
Q Serve(g_s), s	0.6	4.3	4.3	0.7	3.9	3.9	0.0	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	0.6	4.3	4.3	0.7	3.9	3.9	1.7	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.04	0.36		0.55	0.09		0.90
Lane Grp Cap(c), veh/h	66	768	797	71	774	809	326	0	0	293	0	0
V/C Ratio(X)	0.47	0.39	0.39	0.48	0.37	0.37	0.27	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	244	768	797	244	774	809	1342	0	0	1360	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.2	7.1	7.1	17.2	6.9	6.9	15.0	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	5.2	1.5	1.5	4.9	1.3	1.3	0.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.4	0.3	1.3	1.3	0.6	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	8.6	8.6	22.1	8.3	8.2	15.4	0.0	0.0	15.9	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		648			615			88			102	
Approach Delay, s/veh		9.2			9.0			15.4			15.9	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.9	5.7	22.0		8.9	5.5	22.1				
Change Period (Y+Rc), s		4.6	* 4.2	6.2		4.6	* 4.2	6.2				
Max Green Setting (Gmax), s		29.2	* 5	15.8		29.2	* 5	15.8				
Max Q Clear Time (g_c+I1), s		3.7	2.7	6.3		4.2	2.6	5.9				
Green Ext Time (p_c), s		0.4	0.0	2.6		0.5	0.0	2.5				

Intersection Summary	
HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	5	212	17	4	3	158	1532	12	9	1437	209
Future Volume (veh/h)	475	5	212	17	4	3	158	1532	12	9	1437	209
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	500	5	223	18	4	3	166	1613	13	9	1513	220
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	11	469	42	24	18	182	1732	773	19	1785	259
Arrive On Green	0.30	0.30	0.30	0.02	0.02	0.02	0.10	0.49	0.49	0.01	0.40	0.40
Sat Flow, veh/h	1781	35	1555	1781	992	744	1781	3554	1585	1781	4503	654
Grp Volume(v), veh/h	500	0	228	18	0	7	166	1613	13	9	1143	590
Grp Sat Flow(s),veh/h/ln	1781	0	1590	1781	0	1736	1781	1777	1585	1781	1702	1753
Q Serve(g_s), s	31.6	0.0	13.5	1.2	0.0	0.5	10.7	49.3	0.5	0.6	35.3	35.5
Cycle Q Clear(g_c), s	31.6	0.0	13.5	1.2	0.0	0.5	10.7	49.3	0.5	0.6	35.3	35.5
Prop In Lane	1.00		0.98	1.00		0.43	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	537	0	480	42	0	41	182	1732	773	19	1349	695
V/C Ratio(X)	0.93	0.00	0.48	0.42	0.00	0.17	0.91	0.93	0.02	0.47	0.85	0.85
Avail Cap(c_a), veh/h	583	0	521	523	0	510	182	1732	773	77	1349	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	39.3	0.0	33.0	55.7	0.0	55.4	51.5	27.9	15.3	56.9	31.8	31.8
Incr Delay (d2), s/veh	20.9	0.0	0.7	6.6	0.0	1.9	43.2	10.5	0.0	16.4	6.7	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.7	0.0	5.3	0.6	0.0	0.2	6.9	22.6	0.2	0.3	15.5	17.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	0.0	33.7	62.3	0.0	57.3	94.7	38.4	15.4	73.3	38.5	44.1
LnGrp LOS	E	A	C	E	A	E	F	D	B	E	D	D
Approach Vol, veh/h		728			25			1792			1742	
Approach Delay, s/veh		51.8			60.9			43.4			40.6	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	62.9		40.0	16.0	52.4		7.4
Change Period (Y+Rc), s	* 4.2	6.5		5.1	* 4.2	6.5		4.6
Max Green Setting (Gmax), s	* 5	52.7		37.9	* 12	45.9		34.0
Max Q Clear Time (g_c+I1), s	12.6	51.3		33.6	12.7	37.5		3.2
Green Ext Time (p_c), s	0.0	1.2		1.4	0.0	6.5		0.1

Intersection Summary	
HCM 6th Ctrl Delay	43.8
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	12	4	535	20	286	27	1574	529	164	1492	15
Future Volume (veh/h)	21	12	4	535	20	286	27	1574	529	164	1492	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	22	13	4	563	21	301	28	1657	557	173	1571	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	174	51	656	409	365	98	2188	679	246	2457	25
Arrive On Green	0.02	0.06	0.06	0.19	0.23	0.23	0.03	0.43	0.43	0.07	0.47	0.47
Sat Flow, veh/h	3456	2711	794	3456	1777	1585	3456	5106	1585	3456	5212	53
Grp Volume(v), veh/h	22	8	9	563	21	301	28	1657	557	173	1026	561
Grp Sat Flow(s),veh/h/ln	1728	1777	1727	1728	1777	1585	1728	1702	1585	1728	1702	1861
Q Serve(g_s), s	0.5	0.4	0.4	13.5	0.8	15.5	0.7	23.5	26.5	4.2	19.5	19.5
Cycle Q Clear(g_c), s	0.5	0.4	0.4	13.5	0.8	15.5	0.7	23.5	26.5	4.2	19.5	19.5
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	82	114	111	656	409	365	98	2188	679	246	1604	877
V/C Ratio(X)	0.27	0.07	0.08	0.86	0.05	0.83	0.29	0.76	0.82	0.70	0.64	0.64
Avail Cap(c_a), veh/h	202	664	645	759	950	848	202	2188	679	258	1604	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	37.7	37.7	33.6	25.7	31.3	40.8	20.7	21.6	38.9	17.1	17.1
Incr Delay (d2), s/veh	1.7	0.3	0.3	8.7	0.1	4.7	1.6	2.5	10.7	7.9	2.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	6.3	0.3	6.2	0.3	9.3	11.2	2.0	7.5	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	38.0	38.0	42.3	25.7	36.1	42.3	23.2	32.2	46.8	19.1	20.7
LnGrp LOS	D	D	D	D	C	D	D	C	C	D	B	C
Approach Vol, veh/h		39			885			2242			1760	
Approach Delay, s/veh		40.7			39.8			25.7			22.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	43.2	20.5	11.7	6.6	46.9	6.2	25.9
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 6.4	36.7	* 19	32.0	* 5	38.1	* 5	45.8
Max Q Clear Time (g_c+I1), s	6.2	28.5	15.5	2.4	2.7	21.5	2.5	17.5
Green Ext Time (p_c), s	0.0	6.8	0.8	0.0	0.0	10.1	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	14	55	58	14	69	32	1927	31	59	1928	135
Future Volume (veh/h)	116	14	55	58	14	69	32	1927	31	59	1928	135
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	122	15	58	61	15	73	34	2028	33	62	2029	142
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	36	140	78	20	99	417	3297	54	80	2088	145
Arrive On Green	0.08	0.11	0.11	0.04	0.07	0.07	0.23	0.64	0.64	0.04	0.43	0.43
Sat Flow, veh/h	1781	336	1300	1781	277	1350	1781	5175	84	1781	4874	339
Grp Volume(v), veh/h	122	0	73	61	0	88	34	1333	728	62	1414	757
Grp Sat Flow(s),veh/h/ln	1781	0	1636	1781	0	1627	1781	1702	1855	1781	1702	1809
Q Serve(g_s), s	8.1	0.0	5.0	4.1	0.0	6.4	1.8	28.0	28.1	4.1	48.7	49.4
Cycle Q Clear(g_c), s	8.1	0.0	5.0	4.1	0.0	6.4	1.8	28.0	28.1	4.1	48.7	49.4
Prop In Lane	1.00		0.79	1.00		0.83	1.00		0.05	1.00		0.19
Lane Grp Cap(c), veh/h	140	0	176	78	0	119	417	2168	1182	80	1458	775
V/C Ratio(X)	0.87	0.00	0.41	0.78	0.00	0.74	0.08	0.61	0.62	0.78	0.97	0.98
Avail Cap(c_a), veh/h	140	0	496	104	0	461	417	2168	1182	83	1458	775
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	0.42	0.42	0.42	0.77	0.77	0.77
Uniform Delay (d), s/veh	54.7	0.0	50.0	56.8	0.0	54.5	35.9	13.0	13.0	56.7	33.5	33.7
Incr Delay (d2), s/veh	41.5	0.0	1.6	23.1	0.0	8.5	0.0	0.6	1.0	28.7	14.6	23.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.1	2.3	0.0	2.9	0.8	10.3	11.4	2.5	22.5	26.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.3	0.0	51.6	79.9	0.0	63.0	35.9	13.6	14.0	85.5	48.2	57.1
LnGrp LOS	F	A	D	E	A	E	D	B	B	F	D	E
Approach Vol, veh/h		195			149			2095			2233	
Approach Delay, s/veh		79.5			69.9			14.1			52.2	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	82.9	9.5	18.0	34.6	57.9	13.6	13.9
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	5.1	6.5	* 6.5	* 4.2	5.1
Max Green Setting (Gmax), s	* 5.6	51.0	* 7	36.4	5.2	* 51	* 9.4	34.0
Max Q Clear Time (g_c+I1), s	6.1	30.1	6.1	7.0	3.8	51.4	10.1	8.4
Green Ext Time (p_c), s	0.0	15.2	0.0	0.4	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	184	309	732	320	114	163	1681	237	82	1856	121
Future Volume (veh/h)	196	184	309	732	320	114	163	1681	237	82	1856	121
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	206	194	325	771	337	120	172	1769	0	86	1954	127
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	723	414	722	875	306	200	2042		118	1918	124
Arrive On Green	0.07	0.20	0.20	0.21	0.34	0.34	0.06	0.40	0.00	0.03	0.39	0.39
Sat Flow, veh/h	3456	3554	1585	3456	2581	904	3456	5274	0	3456	4900	317
Grp Volume(v), veh/h	206	194	325	771	230	227	172	1769	0	86	1355	726
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1708	1728	1702	0	1728	1702	1813
Q Serve(g_s), s	8.9	7.0	29.0	31.8	15.0	15.4	7.5	48.5	0.0	3.8	59.6	59.6
Cycle Q Clear(g_c), s	8.9	7.0	29.0	31.8	15.0	15.4	7.5	48.5	0.0	3.8	59.6	59.6
Prop In Lane	1.00		1.00	1.00		0.53	1.00		0.00	1.00		0.17
Lane Grp Cap(c), veh/h	254	723	414	722	602	579	200	2042		118	1332	710
V/C Ratio(X)	0.81	0.27	0.78	1.07	0.38	0.39	0.86	0.87		0.73	1.02	1.02
Avail Cap(c_a), veh/h	340	723	414	722	602	579	200	2042		118	1332	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.5	51.1	52.3	60.2	38.2	38.4	71.1	42.0	0.0	72.9	46.4	46.4
Incr Delay (d2), s/veh	10.4	0.2	9.5	53.3	0.4	0.4	29.7	5.3	0.0	20.2	29.1	39.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.2	12.7	19.3	6.7	6.6	4.2	21.3	0.0	2.0	30.4	34.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.9	51.3	61.8	113.6	38.6	38.8	100.9	47.2	0.0	93.1	75.4	86.1
LnGrp LOS	E	D	E	F	D	D	F	D		F	F	F
Approach Vol, veh/h		725			1228			1941	A		2167	
Approach Delay, s/veh		64.1			85.7			52.0			79.7	
Approach LOS		E			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	67.4	36.0	37.2	13.0	66.1	15.4	57.8
Change Period (Y+Rc), s	6.5	* 6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	5.2	* 61	* 32	31.0	* 8.8	57.3	* 15	47.8
Max Q Clear Time (g_c+I1), s	5.8	50.5	33.8	31.0	9.5	61.6	10.9	17.4
Green Ext Time (p_c), s	0.0	8.0	0.0	0.0	0.0	0.0	0.2	3.0

Intersection Summary	
HCM 6th Ctrl Delay	70.2
HCM 6th LOS	E

Notes

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

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

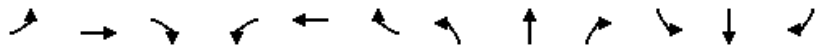
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	363	115	89	384	81	87	18	53	44	28	63
Future Volume (veh/h)	53	363	115	89	384	81	87	18	53	44	28	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	56	382	121	94	404	85	92	19	56	46	29	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	1020	319	145	1189	248	266	44	85	185	76	124
Arrive On Green	0.06	0.38	0.38	0.08	0.41	0.41	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	2664	833	1781	2927	610	790	279	539	408	486	786
Grp Volume(v), veh/h	56	253	250	94	244	245	167	0	0	141	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1720	1781	1777	1760	1608	0	0	1680	0	0
Q Serve(g_s), s	1.2	4.0	4.1	2.0	3.7	3.8	0.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	4.0	4.1	2.0	3.7	3.8	3.5	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.48	1.00		0.35	0.55		0.34	0.33		0.47
Lane Grp Cap(c), veh/h	104	680	659	145	722	715	395	0	0	385	0	0
V/C Ratio(X)	0.54	0.37	0.38	0.65	0.34	0.34	0.42	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	231	680	659	226	722	715	1084	0	0	1122	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.0	8.7	8.8	17.5	8.0	8.1	15.4	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	4.3	1.6	1.7	4.8	1.3	1.3	0.7	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.4	1.4	0.9	1.3	1.3	1.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	10.3	10.4	22.3	9.3	9.4	16.1	0.0	0.0	15.8	0.0	0.0
LnGrp LOS	C	B	B	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		559			583			167			141	
Approach Delay, s/veh		11.6			11.4			16.1			15.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	10.7	7.4	21.3	10.7	6.5	22.2
Change Period (Y+Rc), s	4.5	* 4.2	6.2	4.5	* 4.2	* 6.2
Max Green Setting (Gmax), s	25.1	* 5	15.0	25.1	* 5.1	* 16
Max Q Clear Time (g_c+I1), s	5.5	4.0	6.1	4.9	3.2	5.8
Green Ext Time (p_c), s	0.9	0.0	2.0	0.7	0.0	2.1

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

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	675	19	54	626	75	10	6	10	77	6	18
Future Volume (veh/h)	25	675	19	54	626	75	10	6	10	77	6	18
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	26	711	20	57	659	79	11	6	11	81	6	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	1070	30	106	1058	127	23	12	23	118	9	28
Arrive On Green	0.03	0.30	0.30	0.06	0.33	0.33	0.03	0.03	0.03	0.09	0.09	0.09
Sat Flow, veh/h	1781	3530	99	1781	3196	383	674	368	674	1335	99	313
Grp Volume(v), veh/h	26	358	373	57	366	372	28	0	0	106	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1801	1715	0	0	1747	0	0
Q Serve(g_s), s	0.5	6.7	6.7	1.2	6.6	6.6	0.6	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	0.5	6.7	6.7	1.2	6.6	6.6	0.6	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.21	0.39		0.39	0.76		0.18
Lane Grp Cap(c), veh/h	56	539	562	106	588	596	58	0	0	155	0	0
V/C Ratio(X)	0.46	0.66	0.66	0.54	0.62	0.62	0.48	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	234	785	818	234	785	795	1244	0	0	1194	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.1	11.6	11.6	17.4	10.7	10.7	18.1	0.0	0.0	16.8	0.0	0.0
Incr Delay (d2), s/veh	5.8	1.4	1.4	4.2	1.1	1.1	6.2	0.0	0.0	5.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.2	2.3	0.5	2.1	2.1	0.3	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	13.0	12.9	21.6	11.8	11.8	24.2	0.0	0.0	22.1	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		757			795			28			106	
Approach Delay, s/veh		13.3			12.5			24.2			22.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	5.9	6.5	17.7	8.0	5.4	18.8
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	27.6	* 5	16.8	26.0	* 5	16.8
Max Q Clear Time (g_c+I1), s	2.6	3.2	8.7	4.2	2.5	8.6
Green Ext Time (p_c), s	0.1	0.0	2.8	0.5	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	37	0	16	0	4	24	6	4	0
Future Volume (Veh/h)	0	0	0	37	0	16	0	4	24	6	4	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	39	0	17	0	4	25	6	4	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	17			0			80	95	0	105	78	0
vC1, stage 1 conf vol							0	0		78	78	
vC2, stage 2 conf vol							80	95		27	0	
vCu, unblocked vol	17			0			80	95	0	105	78	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	99	98	99	99	100
cM capacity (veh/h)	1600			1623			822	724	1085	799	736	1085

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	39	17	29	10
Volume Left	39	0	0	6
Volume Right	0	17	25	0
cSH	1623	1700	1015	773
Volume to Capacity	0.02	0.01	0.03	0.01
Queue Length 95th (ft)	2	0	2	1
Control Delay (s)	7.3	0.0	8.7	9.7
Lane LOS	A		A	A
Approach Delay (s)	5.1		8.7	9.7
Approach LOS			A	A

Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	15.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	6	25	10	6	19
Future Vol, veh/h	10	6	25	10	6	19
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	6	26	11	6	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	64	32	0	0	37	0
Stage 1	32	-	-	-	-	-
Stage 2	32	-	-	-	-	-
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	942	1042	-	-	1574	-
Stage 1	991	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	938	1042	-	-	1574	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	991	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	974	1574	-
HCM Lane V/C Ratio	-	-	0.017	0.004	-
HCM Control Delay (s)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	11	8	4	11	5
Future Vol, veh/h	4	11	8	4	11	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	12	8	4	12	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	30	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1602	-	984	1071
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	1003	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	979	1071
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	1003	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1006	-	-	1602	-
HCM Lane V/C Ratio	0.017	-	-	0.005	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

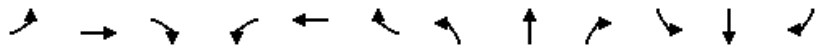
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	645	21	72	782	26	31	4	41	20	4	23
Future Volume (veh/h)	18	645	21	72	782	26	31	4	41	20	4	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	19	679	22	76	823	27	33	4	43	21	4	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	1536	50	129	1706	56	190	15	83	190	26	78
Arrive On Green	0.02	0.44	0.44	0.07	0.49	0.49	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	3513	114	1781	3511	115	578	153	849	568	265	800
Grp Volume(v), veh/h	19	343	358	76	416	434	80	0	0	49	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1850	1781	1777	1850	1579	0	0	1633	0	0
Q Serve(g_s), s	0.4	5.1	5.2	1.6	6.0	6.0	0.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	5.1	5.2	1.6	6.0	6.0	1.7	0.0	0.0	1.0	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.06	0.41		0.54	0.43		0.49
Lane Grp Cap(c), veh/h	43	777	809	129	863	899	287	0	0	294	0	0
V/C Ratio(X)	0.45	0.44	0.44	0.59	0.48	0.48	0.28	0.00	0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	233	777	809	238	863	899	1252	0	0	1253	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.4	7.5	7.5	17.2	6.6	6.6	16.3	0.0	0.0	16.0	0.0	0.0
Incr Delay (d2), s/veh	7.2	1.8	1.8	4.2	1.9	1.9	0.5	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.7	1.8	0.7	1.9	1.9	0.6	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	9.3	9.3	21.4	8.5	8.4	16.8	0.0	0.0	16.3	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		720			926			80			49	
Approach Delay, s/veh		9.7			9.5			16.8			16.3	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.3	7.0	22.9	8.3	5.1	24.8
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	28.2	* 5.1	16.7	28.2	* 5	16.8
Max Q Clear Time (g_c+I1), s	3.7	3.6	7.2	3.0	2.4	8.0
Green Ext Time (p_c), s	0.4	0.0	3.0	0.2	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	2	210	11	10	19	218	1136	15	17	1851	445
Future Volume (veh/h)	266	2	210	11	10	19	218	1136	15	17	1851	445
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	280	2	221	12	11	20	229	1196	16	18	1948	468
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	3	298	60	20	37	216	2004	894	35	1913	444
Arrive On Green	0.19	0.19	0.19	0.03	0.03	0.03	0.12	0.56	0.56	0.02	0.46	0.46
Sat Flow, veh/h	1781	14	1573	1781	595	1081	1781	3554	1585	1781	4139	962
Grp Volume(v), veh/h	280	0	223	12	0	31	229	1196	16	18	1590	826
Grp Sat Flow(s),veh/h/ln	1781	0	1587	1781	0	1676	1781	1777	1585	1781	1702	1697
Q Serve(g_s), s	16.0	0.0	14.0	0.7	0.0	1.9	12.8	23.4	0.5	1.1	48.8	48.8
Cycle Q Clear(g_c), s	16.0	0.0	14.0	0.7	0.0	1.9	12.8	23.4	0.5	1.1	48.8	48.8
Prop In Lane	1.00		0.99	1.00		0.65	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	338	0	301	60	0	57	216	2004	894	35	1573	784
V/C Ratio(X)	0.83	0.00	0.74	0.20	0.00	0.55	1.06	0.60	0.02	0.52	1.01	1.05
Avail Cap(c_a), veh/h	573	0	511	573	0	539	216	2004	894	84	1573	784
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	41.1	0.0	40.3	49.6	0.0	50.2	46.4	15.1	10.2	51.3	28.4	28.4
Incr Delay (d2), s/veh	5.2	0.0	3.6	1.6	0.0	7.9	78.2	1.3	0.0	11.6	25.5	47.0
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	7.4	0.0	5.7	0.3	0.0	0.9	10.3	9.3	0.2	0.6	24.4	29.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	0.0	43.9	51.2	0.0	58.1	124.6	16.5	10.2	62.9	53.9	75.4
LnGrp LOS	D	A	D	D	A	E	F	B	B	E	F	F
Approach Vol, veh/h		503			43			1441			2434	
Approach Delay, s/veh		45.3			56.2			33.6			61.2	
Approach LOS		D			E			C			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	66.0		25.1	17.0	55.3		8.2				
Change Period (Y+Rc), s	* 4.2	6.5		5.1	* 4.2	6.5		4.6				
Max Green Setting (Gmax), s	* 5	56.6		34.0	* 13	48.8		34.0				
Max Q Clear Time (g_c+I1), s	3.1	25.4		18.0	14.8	50.8		3.9				
Green Ext Time (p_c), s	0.0	11.0		2.1	0.0	0.0		0.2				

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	17	6	354	15	159	23	1293	584	268	1770	15
Future Volume (veh/h)	17	17	6	354	15	159	23	1293	584	268	1770	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	18	18	6	373	16	167	24	1361	615	282	1863	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	159	50	459	306	273	88	2279	707	371	2757	24
Arrive On Green	0.02	0.06	0.06	0.13	0.17	0.17	0.03	0.45	0.45	0.11	0.53	0.53
Sat Flow, veh/h	3456	2656	840	3456	1777	1585	3456	5106	1585	3456	5222	45
Grp Volume(v), veh/h	18	12	12	373	16	167	24	1361	615	282	1214	665
Grp Sat Flow(s),veh/h/ln	1728	1777	1719	1728	1777	1585	1728	1702	1585	1728	1702	1862
Q Serve(g_s), s	0.4	0.5	0.6	8.7	0.6	8.1	0.6	16.7	29.2	6.6	21.8	21.8
Cycle Q Clear(g_c), s	0.4	0.5	0.6	8.7	0.6	8.1	0.6	16.7	29.2	6.6	21.8	21.8
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	71	106	103	459	306	273	88	2279	707	371	1797	983
V/C Ratio(X)	0.25	0.11	0.12	0.81	0.05	0.61	0.27	0.60	0.87	0.76	0.68	0.68
Avail Cap(c_a), veh/h	208	684	662	540	855	762	208	2279	707	507	1797	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	37.0	37.0	35.0	28.7	31.8	39.8	17.4	20.8	36.1	14.4	14.4
Incr Delay (d2), s/veh	1.9	0.5	0.5	8.0	0.1	2.2	1.6	1.2	13.7	4.5	2.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	4.1	0.3	3.2	0.3	6.4	12.7	3.0	8.1	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	37.5	37.5	43.0	28.8	34.1	41.4	18.5	34.6	40.6	16.5	18.1
LnGrp LOS	D	D	D	D	C	C	D	B	C	D	B	B
Approach Vol, veh/h		42			556			2000			2161	
Approach Delay, s/veh		39.4			39.9			23.7			20.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	43.6	15.3	11.2	6.3	50.4	5.9	20.5
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 8	36.7	* 13	32.0	* 5	43.9	* 5	40.0
Max Q Clear Time (g_c+I1), s	8.6	31.2	10.7	2.6	2.6	23.8	2.4	10.1
Green Ext Time (p_c), s	0.3	4.5	0.3	0.1	0.0	13.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	37	121	72	29	55	107	1750	66	103	1826	267
Future Volume (veh/h)	238	37	121	72	29	55	107	1750	66	103	1826	267
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	251	39	127	76	31	58	113	1842	69	108	1922	281
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	46	150	161	40	75	380	2930	110	127	1905	275
Arrive On Green	0.15	0.12	0.12	0.09	0.07	0.07	0.21	0.58	0.58	0.07	0.42	0.42
Sat Flow, veh/h	1781	386	1258	1781	583	1091	1781	5051	189	1781	4507	651
Grp Volume(v), veh/h	251	0	166	76	0	89	113	1241	670	108	1446	757
Grp Sat Flow(s),veh/h/ln	1781	0	1644	1781	0	1674	1781	1702	1836	1781	1702	1753
Q Serve(g_s), s	21.0	0.0	14.8	6.1	0.0	7.8	8.0	36.1	36.2	9.0	63.4	63.4
Cycle Q Clear(g_c), s	21.0	0.0	14.8	6.1	0.0	7.8	8.0	36.1	36.2	9.0	63.4	63.4
Prop In Lane	1.00		0.77	1.00		0.65	1.00		0.10	1.00		0.37
Lane Grp Cap(c), veh/h	261	0	196	161	0	115	380	1975	1065	127	1439	741
V/C Ratio(X)	0.96	0.00	0.85	0.47	0.00	0.78	0.30	0.63	0.63	0.85	1.00	1.02
Avail Cap(c_a), veh/h	261	0	472	161	0	379	380	1975	1065	127	1439	741
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	0.21	0.21	0.21	0.75	0.75	0.75
Uniform Delay (d), s/veh	63.6	0.0	64.8	64.8	0.0	68.7	49.5	20.8	20.8	68.9	43.3	43.3
Incr Delay (d2), s/veh	44.8	0.0	9.8	2.1	0.0	10.6	0.1	0.3	0.6	31.4	21.8	34.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	0.0	6.8	2.9	0.0	3.7	3.6	14.3	15.6	5.2	30.7	34.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.3	0.0	74.5	67.0	0.0	79.3	49.6	21.1	21.4	100.3	65.1	77.5
LnGrp LOS	F	A	E	E	A	E	D	C	C	F	F	F
Approach Vol, veh/h		417			165			2024			2311	
Approach Delay, s/veh		94.9			73.6			22.8			70.8	
Approach LOS		F			E			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	93.5	18.6	22.9	38.5	69.9	26.2	15.4
Change Period (Y+Rc), s	* 4.2	6.5	5.1	* 5.1	6.5	* 6.5	* 4.2	5.1
Max Green Setting (Gmax), s	* 11	63.3	12.9	* 43	10.6	* 63	* 22	34.0
Max Q Clear Time (g_c+I1), s	11.0	38.2	8.1	16.8	10.0	65.4	23.0	9.8
Green Ext Time (p_c), s	0.0	16.1	0.1	1.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	377	364	324	312	95	534	1719	636	227	1656	155
Future Volume (veh/h)	159	377	364	324	312	95	534	1719	636	227	1656	155
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	167	397	383	341	328	100	562	1809	0	239	1743	163
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	502	723	583	354	397	119	567	2384		254	1859	173
Arrive On Green	0.15	0.20	0.20	0.10	0.15	0.15	0.16	0.47	0.00	0.07	0.39	0.39
Sat Flow, veh/h	3456	3554	1585	3456	2694	808	3456	5274	0	3456	4752	443
Grp Volume(v), veh/h	167	397	383	341	215	213	562	1809	0	239	1247	659
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1725	1728	1702	0	1728	1702	1791
Q Serve(g_s), s	6.6	15.3	30.7	15.0	17.8	18.3	24.7	44.6	0.0	10.5	53.6	53.9
Cycle Q Clear(g_c), s	6.6	15.3	30.7	15.0	17.8	18.3	24.7	44.6	0.0	10.5	53.6	53.9
Prop In Lane	1.00		1.00	1.00		0.47	1.00		0.00	1.00		0.25
Lane Grp Cap(c), veh/h	502	723	583	354	262	254	567	2384		254	1332	701
V/C Ratio(X)	0.33	0.55	0.66	0.96	0.82	0.84	0.99	0.76		0.94	0.94	0.94
Avail Cap(c_a), veh/h	502	723	583	354	396	384	567	2384		254	1332	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	54.4	40.1	68.1	62.9	63.2	63.5	33.5	0.0	70.2	44.5	44.6
Incr Delay (d2), s/veh	0.4	0.9	2.7	38.1	8.0	9.8	35.3	2.3	0.0	40.4	13.5	22.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.0	12.5	8.5	8.7	8.8	13.7	18.9	0.0	6.1	25.0	28.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	55.3	42.8	106.1	70.9	73.0	98.8	35.8	0.0	110.6	58.0	66.8
LnGrp LOS	E	E	D	F	E	E	F	D		F	E	E
Approach Vol, veh/h		947			769			2371	A		2145	
Approach Delay, s/veh		50.9			87.1			50.8			66.6	
Approach LOS		D			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	77.6	19.8	37.2	29.2	66.1	28.3	28.7
Change Period (Y+Rc), s	6.5	* 6.5	* 4.2	6.2	* 4.2	6.5	6.2	* 6.2
Max Green Setting (Gmax), s	11.2	* 71	* 16	31.0	* 25	57.3	12.7	* 34
Max Q Clear Time (g_c+I1), s	12.5	46.6	17.0	32.7	26.7	55.9	8.6	20.3
Green Ext Time (p_c), s	0.0	15.6	0.0	0.0	0.0	1.2	0.2	2.1

Intersection Summary	
HCM 6th Ctrl Delay	60.7
HCM 6th LOS	E

Notes

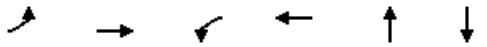
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

APPENDIX D

2035 WITHOUT POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

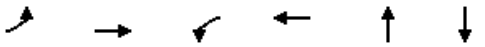
Signal Queueing



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	7	547	228	337	700	47
v/c Ratio	0.07	0.77	0.87	0.27	0.96	0.07
Control Delay	42.0	32.9	70.2	21.6	45.7	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	32.9	70.2	21.6	45.7	8.4
Queue Length 50th (ft)	4	111	129	67	336	9
Queue Length 95th (ft)	18	#177	#260	118	#594	25
Internal Link Dist (ft)		509		264	1550	354
Turn Bay Length (ft)	260		250			
Base Capacity (vph)	101	709	266	1270	764	711
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.77	0.86	0.27	0.92	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	400	595	16	860	167	574
v/c Ratio	1.10	0.43	0.19	1.18	0.64	1.15
Control Delay	116.7	24.8	53.6	125.3	52.0	124.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.7	24.8	53.6	125.3	52.0	124.2
Queue Length 50th (ft)	~298	134	10	~312	101	~431
Queue Length 95th (ft)	#392	182	28	#337	137	#516
Internal Link Dist (ft)		346		1948	136	1460
Turn Bay Length (ft)	130		125			
Base Capacity (vph)	363	1393	86	731	489	497
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.43	0.19	1.18	0.34	1.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	31	617	34	581	88	102
v/c Ratio	0.12	0.27	0.14	0.25	0.27	0.28
Control Delay	16.7	6.5	16.8	6.5	10.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	6.5	16.8	6.5	10.2	7.1
Queue Length 50th (ft)	5	30	5	27	6	2
Queue Length 95th (ft)	26	98	27	92	36	30
Internal Link Dist (ft)		1948		1135	222	1401
Turn Bay Length (ft)	130		200			
Base Capacity (vph)	249	2321	249	2328	1262	1303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.27	0.14	0.25	0.07	0.08

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	500	228	18	7	166	1613	13	9	1733
v/c Ratio	0.88	0.35	0.18	0.07	0.94	0.90	0.02	0.12	0.89
Control Delay	57.7	6.0	59.1	45.6	108.7	35.5	0.0	61.1	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	6.0	59.1	45.6	108.7	35.5	0.0	61.1	41.2
Queue Length 50th (ft)	381	3	14	3	133	594	0	7	472
Queue Length 95th (ft)	#600	62	39	19	#282	#900	0	26	#589
Internal Link Dist (ft)		870		249		1330			311
Turn Bay Length (ft)	270		100		250		185	260	
Base Capacity (vph)	566	660	508	503	176	1798	843	74	1945
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.35	0.04	0.01	0.94	0.90	0.02	0.12	0.89

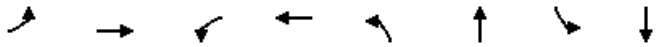
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	22	17	563	322	28	1657	557	173	1587
v/c Ratio	0.10	0.07	0.67	0.42	0.13	0.71	0.57	0.63	0.57
Control Delay	38.5	32.1	32.8	14.7	38.7	20.0	6.3	48.0	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	32.1	32.8	14.7	38.7	20.0	6.3	48.0	14.4
Queue Length 50th (ft)	5	3	125	30	6	213	28	42	138
Queue Length 95th (ft)	18	14	#218	71	21	353	131	#95	323
Internal Link Dist (ft)		1388		764		1747			298
Turn Bay Length (ft)	315		380		250		240	250	
Base Capacity (vph)	215	1374	836	1825	215	2341	969	275	2792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.01	0.67	0.18	0.13	0.71	0.57	0.63	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	73	61	88	34	2061	62	2171
v/c Ratio	0.88	0.33	0.61	0.51	0.45	0.65	0.41	0.63
Control Delay	105.8	21.9	80.4	27.1	74.5	16.6	59.7	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.8	21.9	80.4	27.1	74.5	16.6	59.7	12.7
Queue Length 50th (ft)	95	11	47	11	26	356	46	339
Queue Length 95th (ft)	#211	56	#107	62	#63	485	90	442
Internal Link Dist (ft)		345		406		1002		1747
Turn Bay Length (ft)	60		80		190		240	
Base Capacity (vph)	138	538	103	514	76	3175	150	3426
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.14	0.59	0.17	0.45	0.65	0.41	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	206	194	325	771	457	172	2018	86	2081
v/c Ratio	0.62	0.58	0.75	0.93	0.54	0.75	0.87	0.64	0.95
Control Delay	65.5	64.1	39.4	67.1	43.2	80.8	36.7	83.5	45.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	64.1	39.4	67.1	43.2	80.8	36.7	83.5	45.9
Queue Length 50th (ft)	88	84	157	333	167	75	550	38	612
Queue Length 95th (ft)	131	126	269	#470	227	#134	652	#77	#764
Internal Link Dist (ft)		1135			601		320		1002
Turn Bay Length (ft)	150		130	200		260		310	
Base Capacity (vph)	391	834	436	830	1258	229	2321	135	2201
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.23	0.75	0.93	0.36	0.75	0.87	0.64	0.95

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

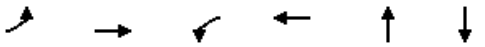
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	56	503	94	489	167	141
v/c Ratio	0.27	0.31	0.46	0.25	0.48	0.38
Control Delay	22.6	10.4	28.6	8.2	16.0	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	10.4	28.6	8.2	16.0	12.1
Queue Length 50th (ft)	13	41	23	23	25	16
Queue Length 95th (ft)	42	84	#73	82	65	50
Internal Link Dist (ft)		509		264	1550	354
Turn Bay Length (ft)	260		250			
Base Capacity (vph)	210	1628	206	1986	872	909
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.31	0.46	0.25	0.19	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	26	731	57	738	28	106
v/c Ratio	0.11	0.41	0.24	0.36	0.10	0.29
Control Delay	23.4	12.9	24.6	10.0	17.1	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	12.9	24.6	10.0	17.1	18.7
Queue Length 50th (ft)	6	73	14	41	4	22
Queue Length 95th (ft)	29	182	51	182	25	68
Internal Link Dist (ft)		346		1948	136	1460
Turn Bay Length (ft)	130		125			
Base Capacity (vph)	235	1768	235	2033	1206	1170
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.41	0.24	0.36	0.02	0.09

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	19	701	76	850	80	49
v/c Ratio	0.09	0.32	0.35	0.34	0.30	0.19
Control Delay	19.1	8.7	22.9	6.3	12.7	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	8.7	22.9	6.3	12.7	12.7
Queue Length 50th (ft)	4	65	18	45	8	5
Queue Length 95th (ft)	19	113	49	142	35	26
Internal Link Dist (ft)		1948		1135	222	1401
Turn Bay Length (ft)	130		200			
Base Capacity (vph)	214	2206	218	2507	1009	992
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.32	0.35	0.34	0.08	0.05

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	280	223	12	31	229	1196	16	18	2416
v/c Ratio	0.75	0.44	0.11	0.25	1.08	0.57	0.02	0.22	1.06
Control Delay	53.6	7.8	54.8	34.1	130.5	18.7	0.0	61.3	65.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	7.8	54.8	34.1	130.5	18.7	0.0	61.3	65.4
Queue Length 50th (ft)	190	1	8	8	~191	263	0	13	~723
Queue Length 95th (ft)	290	62	30	41	#394	492	0	40	#967
Internal Link Dist (ft)		870		249		1330			311
Turn Bay Length (ft)	270		100		250		185	260	
Base Capacity (vph)	566	657	566	551	213	2082	963	83	2288
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.34	0.02	0.06	1.08	0.57	0.02	0.22	1.06

Intersection Summary

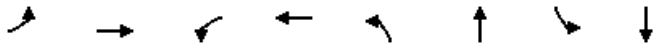
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	18	24	373	183	24	1361	615	282	1879
v/c Ratio	0.08	0.09	0.67	0.30	0.11	0.59	0.59	0.59	0.61
Control Delay	39.8	31.9	40.1	8.5	40.0	18.6	4.4	39.3	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	31.9	40.1	8.5	40.0	18.6	4.4	39.3	13.1
Queue Length 50th (ft)	4	4	86	3	5	159	3	64	134
Queue Length 95th (ft)	15	17	#164	32	19	272	71	119	362
Internal Link Dist (ft)		1388		764		1747			298
Turn Bay Length (ft)	315		380		250		240	250	
Base Capacity (vph)	213	1360	555	1605	213	2324	1049	521	3082
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.02	0.67	0.11	0.11	0.59	0.59	0.54	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	251	166	76	89	113	1911	108	2203
v/c Ratio	0.97	0.73	0.33	0.58	0.90	0.68	0.59	0.75
Control Delay	111.2	42.8	64.7	42.6	125.8	25.9	76.9	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.2	42.8	64.7	42.6	125.8	25.9	76.9	24.6
Queue Length 50th (ft)	248	54	69	30	112	469	102	545
Queue Length 95th (ft)	#428	130	125	88	#236	600	166	660
Internal Link Dist (ft)		345		406		1002		1747
Turn Bay Length (ft)	60		80		190		240	
Base Capacity (vph)	259	552	229	425	125	2823	183	2955
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.30	0.33	0.21	0.90	0.68	0.59	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	167	397	383	341	428	562	2478	239	1906
v/c Ratio	0.47	0.75	0.59	0.89	0.76	0.92	0.98	0.87	0.92
Control Delay	64.9	66.2	29.0	87.1	62.5	77.6	47.2	93.3	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.9	66.2	29.0	87.1	62.5	77.6	47.2	93.3	48.1
Queue Length 50th (ft)	74	184	204	160	188	261	772	112	594
Queue Length 95th (ft)	119	242	311	#265	247	#394	#993	#202	#760
Internal Link Dist (ft)		1135			601		320		1002
Turn Bay Length (ft)	150		130	200		260		310	
Base Capacity (vph)	355	783	654	382	845	612	2521	274	2061
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.51	0.59	0.89	0.51	0.92	0.98	0.87	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX E

2035 WITH POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

APPENDIX E

2035 WITH POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

ICU Worksheets

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Ambrosia Ln / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Ambrosia Ln						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	361	5	214	22	9	14	6	267	184	172	244	10
Growth 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
Initial Bse:	361	5	214	22	9	14	6	267	184	172	244	10
User 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
PHF 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
PHF Volume:	361	5	214	22	9	14	6	267	184	172	244	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	361	5	214	22	9	14	6	267	184	172	244	10
PCE 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
MLF 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
FinalVolume:	361	5	214	22	9	14	6	267	184	172	244	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.62	0.01	0.37	0.49	0.20	0.31	1.00	1.18	0.82	1.00	1.92	0.08
Final Sat.:	996	14	590	782	320	498	1600	1894	1306	1600	3074	126
Capacity Analysis Module:												
Vol/Sat:	0.23	0.36	0.36	0.01	0.03	0.03	0.00	0.14	0.14	0.11	0.08	0.08
Crit Moves:	****			****				****		****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Ambrosia Ln / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.700
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	C

Street Name:	Ambrosia Ln						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 1! 0		0	0 1! 0		1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	8	104	13	209	10	156	260	359	28	10	315	245
Growth 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
Initial Bse:	8	104	13	209	10	156	260	359	28	10	315	245
User 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
PHF 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
PHF Volume:	8	104	13	209	10	156	260	359	28	10	315	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	104	13	209	10	156	260	359	28	10	315	245
PCE 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
MLF 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
FinalVolume:	8	104	13	209	10	156	260	359	28	10	315	245
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.06	0.84	0.10	0.56	0.03	0.41	1.00	1.86	0.14	1.00	1.12	0.88
Final Sat.:	102	1331	166	892	43	666	1600	2968	232	1600	1800	1400
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.23	0.23	0.23	0.16	0.12	0.12	0.01	0.17	0.17
Crit Moves:		****			****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Cassia Rd / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.442
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Street Name:	Cassia Rd						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	0	1! 0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:												
Base Vol:	0	0	0	20	0	222	193	416	0	0	376	10
Growth 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
Initial Bse:	0	0	0	20	0	222	193	416	0	0	376	10
User 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
PHF 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
PHF Volume:	0	0	0	20	0	222	193	416	0	0	376	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	20	0	222	193	416	0	0	376	10
PCE 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
MLF 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
FinalVolume:	0	0	0	20	0	222	193	416	0	0	376	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.08	0.00	0.92	1.00	2.00	0.00	0.00	1.95	0.05
Final Sat.:	0	0	0	132	0	1468	1600	3200	0	0	3117	83
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.15	0.12	0.13	0.00	0.00	0.12	0.12
Crit Moves:						****	****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Skimmer Ct-Oriole Ct / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.264
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	17	Level Of Service:	A

Street Name:	Skimmer Ct-Oriole Ct						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 1! 0		0	0 1! 0		1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	34	6	41	5	2	6	2	414	20	39	346	2
Growth 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
Initial Bse:	34	6	41	5	2	6	2	414	20	39	346	2
User 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
PHF 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
PHF Volume:	34	6	41	5	2	6	2	414	20	39	346	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	6	41	5	2	6	2	414	20	39	346	2
PCE 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
MLF 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
FinalVolume:	34	6	41	5	2	6	2	414	20	39	346	2
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.42	0.07	0.51	0.38	0.15	0.47	1.00	1.91	0.09	1.00	1.99	0.01
Final Sat.:	672	119	810	615	246	738	1600	3053	147	1600	3182	18
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.00	0.01	0.01	0.00	0.14	0.14	0.02	0.11	0.11
Crit Moves:	****			****				****		****		

Poinsettia Reach E (LSA Project No. HCR1803)
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Mimosa Dr / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.282
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	17	Level Of Service:	A

Street Name:	Mimosa Dr						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	30	8	46	5	1	53	25	487	22	28	470	10
Growth 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
Initial Bse:	30	8	46	5	1	53	25	487	22	28	470	10
User 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
PHF 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
PHF Volume:	30	8	46	5	1	53	25	487	22	28	470	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	8	46	5	1	53	25	487	22	28	470	10
PCE 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
MLF 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
FinalVolume:	30	8	46	5	1	53	25	487	22	28	470	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.09	0.55	0.08	0.02	0.90	1.00	1.91	0.09	1.00	1.96	0.04
Final Sat.:	571	152	876	136	27	1437	1600	3062	138	1600	3133	67
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.00	0.04	0.04	0.02	0.16	0.16	0.02	0.15	0.15
Crit Moves:	****				****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
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AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 El Camino Real / Cassia Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.598
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Street Name:	El Camino Real						Cassia Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	30	1550	12	9	1613	53	85	4	38	17	4	3
Growth 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
Initial Bse:	30	1550	12	9	1613	53	85	4	38	17	4	3
User 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
PHF 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
PHF Volume:	30	1550	12	9	1613	53	85	4	38	17	4	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	1550	12	9	1613	53	85	4	38	17	4	3
PCE 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
MLF 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
FinalVolume:	30	1550	12	9	1613	53	85	4	38	17	4	3
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.90	0.10	1.00	0.10	0.90	1.00	0.57	0.43
Final Sat.:	1600	3200	1600	1600	4647	153	1600	152	1448	1600	914	686
Capacity Analysis Module:												
Vol/Sat:	0.02	0.48	0.01	0.01	0.35	0.35	0.05	0.03	0.03	0.01	0.00	0.00
Crit Moves:		****			****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
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AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.717
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	176	1531	529	166	1510	185	255	41	114	519	36	286
Growth 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
Initial Bse:	176	1531	529	166	1510	185	255	41	114	519	36	286
User 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
PHF 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
PHF Volume:	176	1531	529	166	1510	185	255	41	114	519	36	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1531	529	166	1510	185	255	41	114	519	36	286
PCE 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
MLF 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
FinalVolume:	176	1531	529	166	1510	185	255	41	114	519	36	286
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.67	0.33	2.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4276	524	3200	1600	1600	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.32	0.33	0.05	0.35	0.35	0.08	0.03	0.07	0.16	0.02	0.18
Crit Moves:	****				****		****					****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 El Camino Real / Dove Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.597
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	A

Street Name:	El Camino Real						Dove Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	34	2021	33	62	2022	142	117	14	56	58	14	69
Growth 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
Initial Bse:	34	2021	33	62	2022	142	117	14	56	58	14	69
User 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
PHF 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
PHF Volume:	34	2021	33	62	2022	142	117	14	56	58	14	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	2021	33	62	2022	142	117	14	56	58	14	69
PCE 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
MLF 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
FinalVolume:	34	2021	33	62	2022	142	117	14	56	58	14	69
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.95	0.05	1.00	2.80	0.20	1.00	0.20	0.80	1.00	0.17	0.83
Final Sat.:	1600	4723	77	1600	4485	315	1600	320	1280	1600	270	1330
Capacity Analysis Module:												
Vol/Sat:	0.02	0.43	0.43	0.04	0.45	0.45	0.07	0.04	0.04	0.04	0.05	0.05
Crit Moves:	****				****		****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 El Camino Real / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.843
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	D

Street Name:	El Camino Real									Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Protected			Protected			Protected			Protected					
Rights:	Include			Include			Ovl			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	1	1 0			
Volume Module:															
Base Vol:	141	1763	249	86	1947	105	170	160	268	635	278	99			
Growth 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			
Initial Bse:	141	1763	249	86	1947	105	170	160	268	635	278	99			
User 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			
PHF 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			
PHF Volume:	141	1763	249	86	1947	105	170	160	268	635	278	99			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	141	1763	249	86	1947	105	170	160	268	635	278	99			
PCE 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			
MLF 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			
FinalVolume:	141	1763	249	86	1947	105	170	160	268	635	278	99			
OvlAdjVol:									198						
Saturation Flow Module:															
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600			
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Lanes:	2.00	2.63	0.37	2.00	2.85	0.15	2.00	2.00	1.00	2.00	1.47	0.53			
Final Sat.:	3200	4206	594	3200	4554	246	3200	3200	1600	3200	2360	840			
Capacity Analysis Module:															
Vol/Sat:	0.04	0.42	0.42	0.03	0.43	0.43	0.05	0.05	0.17	0.20	0.12	0.12			
OvlAdjV/S:									0.12						
Crit Moves:	****			****					****	****					

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Ambrosia Ln / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.356
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	19	Level Of Service:	A

Street Name:	Ambrosia Ln						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	76	16	46	44	28	63	46	315	100	71	305	64
Growth 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
Initial Bse:	76	16	46	44	28	63	46	315	100	71	305	64
User 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
PHF 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
PHF Volume:	76	16	46	44	28	63	46	315	100	71	305	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	16	46	44	28	63	46	315	100	71	305	64
PCE 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
MLF 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
FinalVolume:	76	16	46	44	28	63	46	315	100	71	305	64
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.55	0.12	0.33	0.32	0.21	0.47	1.00	1.52	0.48	1.00	1.65	0.35
Final Sat.:	881	186	533	521	332	747	1600	2429	771	1600	2645	555
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.09	0.03	0.08	0.08	0.03	0.13	0.13	0.04	0.12	0.12
Crit Moves:	****			****			****			****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Ambrosia Ln / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.339
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	18	Level Of Service:	A

Street Name:	Ambrosia Ln						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	0	1 0	1	1 0
Volume Module:												
Base Vol:	10	6	10	67	5	16	22	586	16	47	543	65
Growth 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
Initial Bse:	10	6	10	67	5	16	22	586	16	47	543	65
User 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
PHF 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
PHF Volume:	10	6	10	67	5	16	22	586	16	47	543	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	6	10	67	5	16	22	586	16	47	543	65
PCE 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
MLF 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
FinalVolume:	10	6	10	67	5	16	22	586	16	47	543	65
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.23	0.38	0.76	0.06	0.18	1.00	1.95	0.05	1.00	1.79	0.21
Final Sat.:	615	369	615	1218	91	291	1600	3115	85	1600	2858	342
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.05	0.06	0.06	0.01	0.19	0.19	0.03	0.19	0.19
Crit Moves:	****			****			****			****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Cassia Rd / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.402
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	20	Level Of Service:	A

Street Name:	Cassia Rd						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	0	1! 0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:												
Base Vol:	0	0	0	10	0	68	197	308	0	0	562	15
Growth 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
Initial Bse:	0	0	0	10	0	68	197	308	0	0	562	15
User 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
PHF 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
PHF Volume:	0	0	0	10	0	68	197	308	0	0	562	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	10	0	68	197	308	0	0	562	15
PCE 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
MLF 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
FinalVolume:	0	0	0	10	0	68	197	308	0	0	562	15
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.13	0.00	0.87	1.00	2.00	0.00	0.00	1.95	0.05
Final Sat.:	0	0	0	205	0	1395	1600	3200	0	0	3117	83
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.05	0.12	0.10	0.00	0.00	0.18	0.18
Crit Moves:						****	****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
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PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Skimmer Ct-Oriole Ct / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.268
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	17	Level Of Service:	A

Street Name:	Skimmer Ct-Oriole Ct						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	1	1 0
Volume Module:												
Base Vol:	9	4	34	6	2	2	8	295	15	31	566	8
Growth 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
Initial Bse:	9	4	34	6	2	2	8	295	15	31	566	8
User 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
PHF 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
PHF Volume:	9	4	34	6	2	2	8	295	15	31	566	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	4	34	6	2	2	8	295	15	31	566	8
PCE 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
MLF 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
FinalVolume:	9	4	34	6	2	2	8	295	15	31	566	8
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.09	0.72	0.60	0.20	0.20	1.00	1.90	0.10	1.00	1.97	0.03
Final Sat.:	306	136	1157	960	320	320	1600	3045	155	1600	3155	45
Capacity Analysis Module:												
Vol/Sat:	0.01	0.03	0.03	0.00	0.01	0.01	0.01	0.10	0.10	0.02	0.18	0.18
Crit Moves:	****			****			****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Mimosa Dr / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.334
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	18	Level Of Service:	A

Street Name:	Mimosa Dr						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	31	4	41	12	2	14	16	560	18	62	679	23
Growth 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
Initial Bse:	31	4	41	12	2	14	16	560	18	62	679	23
User 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
PHF 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
PHF Volume:	31	4	41	12	2	14	16	560	18	62	679	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	4	41	12	2	14	16	560	18	62	679	23
PCE 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
MLF 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
FinalVolume:	31	4	41	12	2	14	16	560	18	62	679	23
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.41	0.05	0.54	0.43	0.07	0.50	1.00	1.94	0.06	1.00	1.93	0.07
Final Sat.:	653	84	863	686	114	800	1600	3100	100	1600	3095	105
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.01	0.02	0.02	0.01	0.18	0.18	0.04	0.22	0.22
Crit Moves:		****			****			****			****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 El Camino Real / Cassia Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.607
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	B

Street Name:	El Camino Real						Cassia Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	40	1150	15	17	2211	112	48	1	37	11	10	19
Growth 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
Initial Bse:	40	1150	15	17	2211	112	48	1	37	11	10	19
User 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
PHF 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
PHF Volume:	40	1150	15	17	2211	112	48	1	37	11	10	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	1150	15	17	2211	112	48	1	37	11	10	19
PCE 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
MLF 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
FinalVolume:	40	1150	15	17	2211	112	48	1	37	11	10	19
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.86	0.14	1.00	0.03	0.97	1.00	0.34	0.66
Final Sat.:	1600	3200	1600	1600	4569	231	1600	42	1558	1600	552	1048
Capacity Analysis Module:												
Vol/Sat:	0.03	0.36	0.01	0.01	0.48	0.48	0.03	0.02	0.02	0.01	0.02	0.02
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.743
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	221	1190	592	271	1791	364	142	42	113	334	35	159
Growth 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
Initial Bse:	221	1190	592	271	1791	364	142	42	113	334	35	159
User 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
PHF 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
PHF Volume:	221	1190	592	271	1791	364	142	42	113	334	35	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1190	592	271	1791	364	142	42	113	334	35	159
PCE 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
MLF 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
FinalVolume:	221	1190	592	271	1791	364	142	42	113	334	35	159
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.49	0.51	2.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	3989	811	3200	1600	1600	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.25	0.37	0.08	0.45	0.45	0.04	0.03	0.07	0.10	0.02	0.10
Crit Moves:	****				****				****	****		

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 El Camino Real / Dove Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.730
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	85	Level Of Service:	C

Street Name:	El Camino Real						Dove Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	112	1836	69	108	1915	280	241	37	122	72	29	55
Growth 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
Initial Bse:	112	1836	69	108	1915	280	241	37	122	72	29	55
User 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
PHF 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
PHF Volume:	112	1836	69	108	1915	280	241	37	122	72	29	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	1836	69	108	1915	280	241	37	122	72	29	55
PCE 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
MLF 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
FinalVolume:	112	1836	69	108	1915	280	241	37	122	72	29	55
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.89	0.11	1.00	2.62	0.38	1.00	0.23	0.77	1.00	0.35	0.65
Final Sat.:	1600	4626	174	1600	4188	612	1600	372	1228	1600	552	1048
Capacity Analysis Module:												
Vol/Sat:	0.07	0.40	0.40	0.07	0.46	0.46	0.15	0.10	0.10	0.05	0.05	0.05
Crit Moves:	****				****		****				****	

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 El Camino Real / Aviara Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.829
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Street Name:	El Camino Real						Aviara Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	1	1 0
Volume Module:												
Base Vol:	464	1803	667	238	1737	135	138	327	316	281	271	82
Growth 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
Initial Bse:	464	1803	667	238	1737	135	138	327	316	281	271	82
User 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
PHF 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
PHF Volume:	464	1803	667	238	1737	135	138	327	316	281	271	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	464	1803	667	238	1737	135	138	327	316	281	271	82
PCE 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
MLF 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
FinalVolume:	464	1803	667	238	1737	135	138	327	316	281	271	82
OvlAdjVol:									84			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.19	0.81	2.00	2.78	0.22	2.00	2.00	1.00	2.00	1.54	0.46
Final Sat.:	3200	3504	1296	3200	4454	346	3200	3200	1600	3200	2457	743
Capacity Analysis Module:												
Vol/Sat:	0.15	0.51	0.51	0.07	0.39	0.39	0.04	0.10	0.20	0.09	0.11	0.11
OvlAdjV/S:									0.05			
Crit Moves:	****			****				****		****		

APPENDIX E

2035 WITH POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

HCM Worksheets

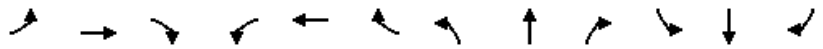
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	267	184	172	244	10	361	5	214	22	9	14
Future Volume (veh/h)	6	267	184	172	244	10	361	5	214	22	9	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	6	281	194	181	257	11	380	5	225	23	9	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	431	289	223	1143	49	502	6	250	376	153	214
Arrive On Green	0.01	0.21	0.21	0.13	0.33	0.33	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1781	2037	1364	1781	3472	148	915	12	542	657	331	463
Grp Volume(v), veh/h	6	244	231	181	131	137	610	0	0	47	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1625	1781	1777	1844	1469	0	0	1451	0	0
Q Serve(g_s), s	0.2	9.3	9.7	7.3	4.0	4.0	27.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	9.3	9.7	7.3	4.0	4.0	28.3	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.84	1.00		0.08	0.62		0.37	0.49		0.32
Lane Grp Cap(c), veh/h	14	376	344	223	585	607	758	0	0	743	0	0
V/C Ratio(X)	0.43	0.65	0.67	0.81	0.22	0.23	0.81	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	120	376	344	317	585	607	1004	0	0	975	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.6	26.7	26.9	31.6	18.0	18.0	18.2	0.0	0.0	11.0	0.0	0.0
Incr Delay (d2), s/veh	19.5	8.4	10.0	10.2	0.9	0.9	3.6	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.7	4.6	3.7	1.7	1.8	9.3	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.1	35.1	36.9	41.8	18.9	18.9	21.8	0.0	0.0	11.1	0.0	0.0
LnGrp LOS	E	D	D	D	B	B	C	A	A	B	A	A
Approach Vol, veh/h		481			449			610			47	
Approach Delay, s/veh		36.2			28.1			21.8			11.1	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	38.8	13.5	21.9	38.8	4.8	30.6
Change Period (Y+Rc), s	4.5	* 4.2	6.2	4.5	* 4.2	* 6.2
Max Green Setting (Gmax), s	46.8	* 13	15.1	46.8	* 5	* 24
Max Q Clear Time (g_c+I1), s	30.3	9.3	11.7	3.1	2.2	6.0
Green Ext Time (p_c), s	4.0	0.2	0.9	0.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	359	28	10	315	245	8	104	13	209	10	156
Future Volume (veh/h)	260	359	28	10	315	245	8	104	13	209	10	156
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	347	479	37	13	420	327	11	139	17	279	13	208
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	1291	99	27	363	281	14	176	22	271	13	202
Arrive On Green	0.21	0.39	0.39	0.02	0.19	0.19	0.12	0.12	0.12	0.29	0.29	0.29
Sat Flow, veh/h	1781	3343	258	1781	1907	1474	121	1524	186	946	44	706
Grp Volume(v), veh/h	347	254	262	13	391	356	167	0	0	500	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1824	1781	1777	1605	1831	0	0	1696	0	0
Q Serve(g_s), s	19.0	10.2	10.2	0.7	18.9	18.9	8.8	0.0	0.0	28.4	0.0	0.0
Cycle Q Clear(g_c), s	19.0	10.2	10.2	0.7	18.9	18.9	8.8	0.0	0.0	28.4	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.92	0.07		0.10	0.56		0.42
Lane Grp Cap(c), veh/h	376	686	704	27	338	305	211	0	0	485	0	0
V/C Ratio(X)	0.92	0.37	0.37	0.48	1.16	1.17	0.79	0.00	0.00	1.03	0.00	0.00
Avail Cap(c_a), veh/h	377	686	704	90	338	305	500	0	0	485	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.4	21.8	21.9	48.5	40.2	40.2	42.8	0.0	0.0	35.5	0.0	0.0
Incr Delay (d2), s/veh	27.9	0.3	0.3	12.7	98.6	104.1	6.5	0.0	0.0	49.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.2	4.4	0.4	17.4	16.2	4.3	0.0	0.0	18.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	22.2	22.2	61.2	138.8	144.3	49.3	0.0	0.0	84.5	0.0	0.0
LnGrp LOS	E	C	C	E	F	F	D	A	A	F	A	A
Approach Vol, veh/h		863			760			167			500	
Approach Delay, s/veh		39.9			140.1			49.3			84.5	
Approach LOS		D			F			D			F	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	16.1	5.7	44.6	33.0	25.2	25.1
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	27.1	* 5	34.9	28.4	* 21	18.9
Max Q Clear Time (g_c+I1), s	10.8	2.7	12.2	30.4	21.0	20.9
Green Ext Time (p_c), s	0.8	0.0	3.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	83.6
HCM 6th LOS	F

Notes

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

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	20	222	193	416	376	10
Future Volume (vph)	20	222	193	416	376	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.88		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1625		1770	3539	3525	
Flt Permitted	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	1625		1770	3539	3525	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	234	203	438	396	11
RTOR Reduction (vph)	190	0	0	0	2	0
Lane Group Flow (vph)	65	0	203	438	405	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	7.6		8.4	24.0	11.1	
Effective Green, g (s)	7.6		8.4	24.0	11.1	
Actuated g/C Ratio	0.19		0.21	0.59	0.27	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	304		366	2092	963	
v/s Ratio Prot	c0.04		c0.11	0.12	c0.11	
v/s Ratio Perm						
v/c Ratio	0.21		0.55	0.21	0.42	
Uniform Delay, d1	14.0		14.4	3.9	12.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.4		1.8	0.1	0.3	
Delay (s)	14.3		16.2	3.9	12.4	
Level of Service	B		B	A	B	
Approach Delay (s)	14.3			7.8	12.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	40.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	414	20	39	346	2	34	6	41	5	2	6
Future Volume (veh/h)	2	414	20	39	346	2	34	6	41	5	2	6
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	2	436	21	41	364	2	36	6	43	5	2	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	908	44	87	1121	6	276	59	148	245	102	139
Arrive On Green	0.00	0.26	0.26	0.05	0.31	0.31	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1781	3451	166	1781	3624	20	460	319	797	322	547	745
Grp Volume(v), veh/h	2	224	233	41	178	188	85	0	0	13	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1781	1777	1867	1576	0	0	1614	0	0
Q Serve(g_s), s	0.0	2.9	2.9	0.6	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.9	2.9	0.6	2.1	2.1	1.1	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.01	0.42		0.51	0.38		0.46
Lane Grp Cap(c), veh/h	7	467	484	87	550	577	484	0	0	485	0	0
V/C Ratio(X)	0.30	0.48	0.48	0.47	0.32	0.32	0.18	0.00	0.00	0.03	0.00	0.00
Avail Cap(c_a), veh/h	331	1189	1232	563	1421	1492	1331	0	0	1334	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.4	8.4	8.4	12.4	7.1	7.1	9.4	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	23.6	0.8	0.7	3.9	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.8	0.8	0.3	0.5	0.5	0.3	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	9.1	9.1	16.3	7.5	7.5	9.5	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	D	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		459			407			85			13	
Approach Delay, s/veh		9.2			8.4			9.5			9.0	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	9.5	5.8	11.6	9.5	4.6	12.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	8.5	18.0	20.0	5.0	21.5
Max Q Clear Time (g_c+I1), s	3.1	2.6	4.9	2.2	2.0	4.1
Green Ext Time (p_c), s	0.3	0.0	2.2	0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	3	70	7	20	30
Future Vol, veh/h	8	3	70	7	20	30
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	3	74	7	21	32

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	152	78	0	0	81	0
Stage 1	78	-	-	-	-	-
Stage 2	74	-	-	-	-	-
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	840	983	-	-	1517	-
Stage 1	945	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	828	983	-	-	1517	-
Mov Cap-2 Maneuver	828	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	865	1517	-
HCM Lane V/C Ratio	-	-	0.013	0.014	-
HCM Control Delay (s)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	22	9	9	10	1
Future Vol, veh/h	5	22	9	9	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	23	9	9	11	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	28	0	44	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	27	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1585	-	967	1062
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	996	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1585	-	961	1062
Mov Cap-2 Maneuver	-	-	-	-	961	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	996	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	969	-	-	1585	-
HCM Lane V/C Ratio	0.012	-	-	0.006	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

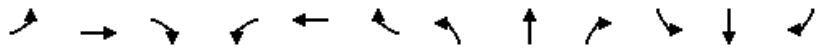
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	487	22	28	470	10	30	8	46	5	1	53
Future Volume (veh/h)	25	487	22	28	470	10	30	8	46	5	1	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	26	513	23	29	495	11	32	8	48	5	1	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	1523	68	62	1574	35	190	25	94	117	8	157
Arrive On Green	0.03	0.44	0.44	0.03	0.44	0.44	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3464	155	1781	3554	79	493	233	872	83	73	1452
Grp Volume(v), veh/h	26	263	273	29	247	259	88	0	0	62	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1842	1781	1777	1856	1598	0	0	1607	0	0
Q Serve(g_s), s	0.5	3.5	3.5	0.6	3.2	3.2	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	3.5	3.5	0.6	3.2	3.2	1.7	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.04	0.36		0.55	0.08		0.90
Lane Grp Cap(c), veh/h	57	781	810	62	787	822	309	0	0	282	0	0
V/C Ratio(X)	0.46	0.34	0.34	0.47	0.31	0.31	0.28	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	248	781	810	248	787	822	1372	0	0	1386	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.1	6.6	6.6	17.0	6.5	6.5	15.1	0.0	0.0	14.9	0.0	0.0
Incr Delay (d2), s/veh	5.7	1.2	1.1	5.3	1.0	1.0	0.5	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	1.1	0.3	1.0	1.0	0.6	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	7.8	7.8	22.3	7.5	7.5	15.6	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		562			535			88			62	
Approach Delay, s/veh		8.5			8.3			15.6			15.3	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.5	5.5	22.0	8.5	5.3	22.1
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	29.2	* 5	15.8	29.2	* 5	15.8
Max Q Clear Time (g_c+I1), s	3.7	2.6	5.5	3.3	2.5	5.2
Green Ext Time (p_c), s	0.4	0.0	2.3	0.3	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	4	38	17	4	3	30	1550	12	9	1613	53
Future Volume (veh/h)	85	4	38	17	4	3	30	1550	12	9	1613	53
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	89	4	40	18	4	3	32	1632	13	9	1698	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	11	110	47	26	20	56	2273	1014	20	3144	104
Arrive On Green	0.08	0.08	0.08	0.03	0.03	0.03	0.03	0.64	0.64	0.01	0.62	0.62
Sat Flow, veh/h	1781	146	1461	1781	992	744	1781	3554	1585	1781	5077	167
Grp Volume(v), veh/h	89	0	44	18	0	7	32	1632	13	9	1138	616
Grp Sat Flow(s),veh/h/ln	1781	0	1607	1781	0	1736	1781	1777	1585	1781	1702	1840
Q Serve(g_s), s	4.0	0.0	2.1	0.8	0.0	0.3	1.5	25.2	0.2	0.4	15.8	15.8
Cycle Q Clear(g_c), s	4.0	0.0	2.1	0.8	0.0	0.3	1.5	25.2	0.2	0.4	15.8	15.8
Prop In Lane	1.00		0.91	1.00		0.43	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	134	0	121	47	0	46	56	2273	1014	20	2108	1140
V/C Ratio(X)	0.67	0.00	0.36	0.38	0.00	0.15	0.57	0.72	0.01	0.45	0.54	0.54
Avail Cap(c_a), veh/h	819	0	739	735	0	716	255	2273	1014	108	2108	1140
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	37.1	0.0	36.2	39.4	0.0	39.2	39.4	9.9	5.4	40.5	9.0	9.0
Incr Delay (d2), s/veh	5.6	0.0	1.8	5.0	0.0	1.5	8.8	2.0	0.0	14.8	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.9	0.4	0.0	0.2	0.8	8.7	0.1	0.3	5.3	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	0.0	38.1	44.5	0.0	40.7	48.1	11.9	5.4	55.2	10.0	10.8
LnGrp LOS	D	A	D	D	A	D	D	B	A	E	A	B
Approach Vol, veh/h		133			25			1677			1763	
Approach Delay, s/veh		41.1			43.4			12.5			10.5	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	59.2		11.3	6.8	57.5		6.8
Change Period (Y+Rc), s	* 4.2	6.5		5.1	* 4.2	6.5		4.6
Max Green Setting (Gmax), s	* 5	52.7		37.9	* 12	45.9		34.0
Max Q Clear Time (g_c+I1), s	2.4	27.2		6.0	3.5	17.8		2.8
Green Ext Time (p_c), s	0.0	15.0		0.5	0.0	15.7		0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	41	114	519	36	286	176	1531	529	166	1510	185
Future Volume (veh/h)	255	41	114	519	36	286	176	1531	529	166	1510	185
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	268	43	120	546	38	301	185	1612	557	175	1589	195
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	188	167	632	414	369	191	2077	645	245	1946	238
Arrive On Green	0.06	0.11	0.11	0.18	0.23	0.23	0.06	0.41	0.41	0.07	0.42	0.42
Sat Flow, veh/h	3456	1777	1585	3456	1777	1585	3456	5106	1585	3456	4608	564
Grp Volume(v), veh/h	268	43	120	546	38	301	185	1612	557	175	1173	611
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1769
Q Serve(g_s), s	5.0	2.0	6.6	13.8	1.5	16.2	4.8	24.7	29.0	4.5	27.4	27.5
Cycle Q Clear(g_c), s	5.0	2.0	6.6	13.8	1.5	16.2	4.8	24.7	29.0	4.5	27.4	27.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	191	188	167	632	414	369	191	2077	645	245	1437	747
V/C Ratio(X)	1.40	0.23	0.72	0.86	0.09	0.81	0.97	0.78	0.86	0.71	0.82	0.82
Avail Cap(c_a), veh/h	191	630	562	720	902	805	191	2077	645	245	1437	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	37.0	39.1	35.8	27.1	32.8	42.5	23.2	24.5	41.0	23.0	23.0
Incr Delay (d2), s/veh	208.2	0.6	5.6	9.7	0.1	4.4	55.0	2.9	14.3	9.5	5.2	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.9	2.8	6.6	0.6	6.5	3.5	10.0	12.8	2.2	11.4	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	250.9	37.6	44.7	45.4	27.2	37.2	97.6	26.1	38.8	50.5	28.2	32.7
LnGrp LOS	F	D	D	D	C	D	F	C	D	D	C	C
Approach Vol, veh/h		431			885			2354			1959	
Approach Delay, s/veh		172.2			41.8			34.7			31.6	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	43.2	20.7	15.7	9.2	44.6	9.2	27.2
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	6.4	36.7	* 19	32.0	* 5	38.1	* 5	45.8
Max Q Clear Time (g_c+I1), s	6.5	31.0	15.8	8.6	6.8	29.5	7.0	18.2
Green Ext Time (p_c), s	0.0	4.9	0.7	0.9	0.0	6.7	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	45.3
HCM 6th LOS	D

Notes

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

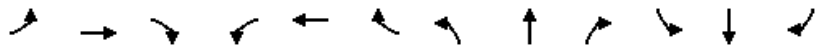
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	14	56	58	14	69	34	2021	33	62	2022	142
Future Volume (veh/h)	117	14	56	58	14	69	34	2021	33	62	2022	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	123	15	59	61	15	73	36	2127	35	65	2128	149
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	36	140	78	20	99	417	3285	54	83	2088	145
Arrive On Green	0.08	0.11	0.11	0.04	0.07	0.07	0.23	0.63	0.63	0.05	0.43	0.43
Sat Flow, veh/h	1781	332	1304	1781	277	1350	1781	5174	85	1781	4875	339
Grp Volume(v), veh/h	123	0	74	61	0	88	36	1398	764	65	1481	796
Grp Sat Flow(s),veh/h/ln	1781	0	1636	1781	0	1627	1781	1702	1855	1781	1702	1809
Q Serve(g_s), s	8.2	0.0	5.1	4.1	0.0	6.4	1.9	30.5	30.6	4.3	51.4	51.4
Cycle Q Clear(g_c), s	8.2	0.0	5.1	4.1	0.0	6.4	1.9	30.5	30.6	4.3	51.4	51.4
Prop In Lane	1.00		0.80	1.00		0.83	1.00		0.05	1.00		0.19
Lane Grp Cap(c), veh/h	140	0	176	78	0	119	417	2161	1178	83	1458	775
V/C Ratio(X)	0.88	0.00	0.42	0.78	0.00	0.74	0.09	0.65	0.65	0.78	1.02	1.03
Avail Cap(c_a), veh/h	140	0	496	104	0	461	417	2161	1178	83	1458	775
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	0.42	0.42	0.42	0.46	0.46	0.46
Uniform Delay (d), s/veh	54.7	0.0	50.0	56.8	0.0	54.5	35.9	13.6	13.6	56.6	34.3	34.3
Incr Delay (d2), s/veh	43.2	0.0	1.6	23.1	0.0	8.5	0.0	0.6	1.2	19.6	20.1	29.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.2	2.3	0.0	2.9	0.8	11.2	12.5	2.4	24.7	28.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.9	0.0	51.6	79.9	0.0	63.0	36.0	14.2	14.8	76.2	54.4	63.3
LnGrp LOS	F	A	D	E	A	E	D	B	B	E	F	F
Approach Vol, veh/h		197			149			2198			2342	
Approach Delay, s/veh		80.5			69.9			14.8			58.0	
Approach LOS		F			E			B			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	82.7	9.5	18.0	34.6	57.9	13.6	13.9
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	5.1	6.5	* 6.5	* 4.2	5.1
Max Green Setting (Gmax), s	* 5.6	51.0	* 7	36.4	5.2	* 51	* 9.4	34.0
Max Q Clear Time (g_c+I1), s	6.3	32.6	6.1	7.1	3.9	53.4	10.2	8.4
Green Ext Time (p_c), s	0.0	14.3	0.0	0.4	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	160	268	635	278	99	141	1763	249	86	1947	105
Future Volume (veh/h)	170	160	268	635	278	99	141	1763	249	86	1947	105
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	179	168	282	668	293	104	148	1856	0	91	2049	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	655	377	679	815	283	186	2181		121	2101	113
Arrive On Green	0.07	0.18	0.18	0.20	0.31	0.31	0.05	0.43	0.00	0.03	0.42	0.42
Sat Flow, veh/h	3456	3554	1585	3456	2586	899	3456	5274	0	3456	4959	268
Grp Volume(v), veh/h	179	168	282	668	199	198	148	1856	0	91	1404	756
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1709	1728	1702	0	1728	1702	1822
Q Serve(g_s), s	7.6	6.0	24.5	28.6	12.9	13.3	6.3	48.6	0.0	3.9	60.2	60.8
Cycle Q Clear(g_c), s	7.6	6.0	24.5	28.6	12.9	13.3	6.3	48.6	0.0	3.9	60.2	60.8
Prop In Lane	1.00		1.00	1.00		0.53	1.00		0.00	1.00		0.15
Lane Grp Cap(c), veh/h	227	655	377	679	560	538	186	2181		121	1442	772
V/C Ratio(X)	0.79	0.26	0.75	0.98	0.36	0.37	0.80	0.85		0.75	0.97	0.98
Avail Cap(c_a), veh/h	307	741	416	679	562	540	186	2181		121	1442	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.4	51.9	52.5	59.5	39.3	39.5	69.5	38.3	0.0	71.1	42.0	42.2
Incr Delay (d2), s/veh	9.4	0.2	6.6	30.5	0.4	0.4	20.9	4.4	0.0	23.0	18.2	27.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.7	10.5	15.4	5.8	5.7	3.3	21.1	0.0	2.1	28.6	33.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.8	52.1	59.1	90.0	39.7	39.9	90.5	42.8	0.0	94.2	60.2	69.9
LnGrp LOS	E	D	E	F	D	D	F	D		F	E	E
Approach Vol, veh/h		629			1065			2004	A		2251	
Approach Delay, s/veh		62.6			71.3			46.3			64.8	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	70.0	33.4	33.6	12.2	69.5	14.0	53.0
Change Period (Y+Rc), s	6.5	* 6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	5.2	* 64	* 29	31.0	* 8	60.7	* 13	47.0
Max Q Clear Time (g_c+I1), s	15.9	50.6	30.6	26.5	8.3	62.8	9.6	15.3
Green Ext Time (p_c), s	0.0	9.8	0.0	0.9	0.0	0.0	0.2	2.6

Intersection Summary	
HCM 6th Ctrl Delay	59.5
HCM 6th LOS	E

Notes

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

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

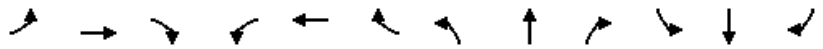
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	315	100	71	305	64	76	16	46	44	28	63
Future Volume (veh/h)	46	315	100	71	305	64	76	16	46	44	28	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	48	332	105	75	321	67	80	17	48	46	29	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	824	256	97	913	188	417	98	220	260	174	329
Arrive On Green	0.04	0.31	0.31	0.05	0.31	0.31	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1781	2668	830	1781	2934	605	771	217	489	445	386	731
Grp Volume(v), veh/h	48	219	218	75	193	195	145	0	0	141	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1721	1781	1777	1762	1477	0	0	1561	0	0
Q Serve(g_s), s	2.1	7.8	8.0	3.3	6.7	6.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	7.8	8.0	3.3	6.7	6.9	3.9	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.48	1.00		0.34	0.55		0.33	0.33		0.47
Lane Grp Cap(c), veh/h	73	549	531	97	553	548	735	0	0	763	0	0
V/C Ratio(X)	0.66	0.40	0.41	0.77	0.35	0.36	0.20	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	196	549	531	263	553	548	735	0	0	763	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.8	21.8	21.9	37.3	21.3	21.3	13.2	0.0	0.0	13.2	0.0	0.0
Incr Delay (d2), s/veh	9.6	2.2	2.3	12.0	1.7	1.8	0.6	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.4	3.5	1.7	2.9	3.0	1.6	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	24.0	24.2	49.3	23.0	23.1	13.8	0.0	0.0	13.7	0.0	0.0
LnGrp LOS	D	C	C	D	C	C	B	A	A	B	A	A
Approach Vol, veh/h		485			463			145			141	
Approach Delay, s/veh		26.4			27.3			13.8			13.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.5	8.6	30.9		40.5	9.5	30.0				
Change Period (Y+Rc), s		4.5	* 4.2	6.2		4.5	6.2	* 5.1				
Max Green Setting (Gmax), s		32.5	* 12	20.8		32.5	8.8	* 25				
Max Q Clear Time (g_c+I1), s		5.9	5.3	10.0		5.9	4.1	8.9				
Green Ext Time (p_c), s		0.8	0.1	1.9		0.8	0.0	2.0				

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	586	16	47	543	65	10	6	10	67	5	16
Future Volume (veh/h)	22	586	16	47	543	65	10	6	10	67	5	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	29	781	21	63	724	87	13	8	13	89	7	21
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1273	34	109	1237	149	25	16	25	125	10	30
Arrive On Green	0.03	0.36	0.36	0.06	0.39	0.39	0.04	0.04	0.04	0.09	0.09	0.09
Sat Flow, veh/h	1781	3535	95	1781	3194	384	657	405	657	1329	105	314
Grp Volume(v), veh/h	29	393	409	63	403	408	34	0	0	117	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1801	1719	0	0	1747	0	0
Q Serve(g_s), s	0.7	8.0	8.0	1.5	7.9	7.9	0.9	0.0	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.7	8.0	8.0	1.5	7.9	7.9	0.9	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.21	0.38		0.38	0.76		0.18
Lane Grp Cap(c), veh/h	60	640	667	109	688	697	66	0	0	165	0	0
V/C Ratio(X)	0.48	0.61	0.61	0.58	0.59	0.59	0.51	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	316	1852	1931	478	2014	2041	1150	0	0	1129	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.8	11.6	11.6	20.1	10.7	10.7	20.7	0.0	0.0	19.3	0.0	0.0
Incr Delay (d2), s/veh	5.8	1.0	0.9	4.8	0.8	0.8	6.0	0.0	0.0	5.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	2.8	0.7	2.5	2.6	0.4	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	12.5	12.5	24.9	11.5	11.5	26.7	0.0	0.0	24.9	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		831			874			34			117	
Approach Delay, s/veh		13.0			12.4			26.7			24.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	6.3	6.9	22.0	8.7	5.7	23.2
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	29.4	* 12	45.8	28.4	* 7.8	49.8
Max Q Clear Time (g_c+I1), s	2.9	3.5	10.0	4.9	2.7	9.9
Green Ext Time (p_c), s	0.1	0.1	5.8	0.6	0.0	6.1

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

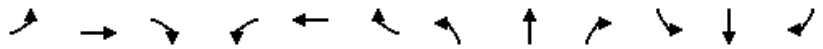
Notes

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

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	10	68	562	15	197	308
Future Volume (vph)	10	68	562	15	197	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.88		1.00	1.00	0.91	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1634		1770	3539	3215	
Flt Permitted	0.99		0.95	1.00	1.00	
Satd. Flow (perm)	1634		1770	3539	3215	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	72	592	16	207	324
RTOR Reduction (vph)	51	0	0	0	277	0
Lane Group Flow (vph)	32	0	592	16	254	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	22.9		31.9	48.1	11.7	
Effective Green, g (s)	22.9		31.9	48.1	11.7	
Actuated g/C Ratio	0.29		0.40	0.60	0.15	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	467		705	2127	470	
v/s Ratio Prot	c0.02		c0.33	0.00	c0.08	
v/s Ratio Perm						
v/c Ratio	0.07		0.84	0.01	0.54	
Uniform Delay, d1	20.8		21.7	6.4	31.7	
Progression Factor	1.00		0.65	0.49	1.00	
Incremental Delay, d2	0.3		8.5	0.0	1.3	
Delay (s)	21.1		22.8	3.1	32.9	
Level of Service	C		C	A	C	
Approach Delay (s)	21.1			22.3	32.9	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	295	15	31	566	8	9	4	34	6	2	2
Future Volume (veh/h)	8	295	15	31	566	8	9	4	34	6	2	2
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	8	311	16	33	596	8	9	4	36	6	2	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	987	51	72	1137	15	184	49	215	333	104	57
Arrive On Green	0.01	0.29	0.29	0.04	0.32	0.32	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	3439	176	1781	3590	48	158	268	1180	679	572	313
Grp Volume(v), veh/h	8	160	167	33	295	309	49	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1839	1781	1777	1862	1607	0	0	1564	0	0
Q Serve(g_s), s	0.1	1.9	2.0	0.5	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	1.9	2.0	0.5	3.7	3.7	0.7	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.03	0.18		0.73	0.60		0.20
Lane Grp Cap(c), veh/h	19	510	528	72	563	590	447	0	0	494	0	0
V/C Ratio(X)	0.42	0.31	0.32	0.46	0.52	0.52	0.11	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	324	1163	1203	343	1182	1238	1200	0	0	1208	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	7.7	7.7	12.9	7.7	7.7	9.5	0.0	0.0	9.3	0.0	0.0
Incr Delay (d2), s/veh	13.7	0.3	0.3	4.5	0.8	0.7	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.5	0.2	0.9	1.0	0.2	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	8.0	8.0	17.4	8.5	8.4	9.6	0.0	0.0	9.3	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		335			637			49			10	
Approach Delay, s/veh		8.5			8.9			9.6			9.3	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	9.5	5.6	12.4	9.5	4.8	13.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.2	5.3	18.0	18.2	5.0	18.3
Max Q Clear Time (g_c+I1), s	2.7	2.5	4.0	2.1	2.1	5.7
Green Ext Time (p_c), s	0.1	0.0	1.5	0.0	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	4	37	6	10	12
Future Vol, veh/h	6	4	37	6	10	12
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	4	39	6	11	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	77	42	0	0	45	0
Stage 1	42	-	-	-	-	-
Stage 2	35	-	-	-	-	-
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	926	1029	-	-	1563	-
Stage 1	980	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	920	1029	-	-	1563	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	987	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	3.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	961	1563	-
HCM Lane V/C Ratio	-	-	0.011	0.007	-
HCM Control Delay (s)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	12	9	4	12	5
Future Vol, veh/h	4	12	9	4	12	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	13	9	4	13	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	17	0	33	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1600	-	980	1070
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1600	-	974	1070
Mov Cap-2 Maneuver	-	-	-	-	974	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1001	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1000	-	-	1600	-
HCM Lane V/C Ratio	0.018	-	-	0.006	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	560	18	62	679	23	31	4	41	12	2	14
Future Volume (veh/h)	16	560	18	62	679	23	31	4	41	12	2	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	17	589	19	65	715	24	33	4	43	13	2	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	39	1562	50	117	1713	57	190	11	76	189	23	75
Arrive On Green	0.02	0.44	0.44	0.07	0.49	0.49	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	3514	113	1781	3508	118	603	119	839	567	256	824
Grp Volume(v), veh/h	17	298	310	65	362	377	80	0	0	30	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1850	1781	1777	1849	1562	0	0	1647	0	0
Q Serve(g_s), s	0.4	4.2	4.2	1.3	4.9	4.9	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.2	4.2	1.3	4.9	4.9	1.8	0.0	0.0	0.6	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.06	0.41		0.54	0.43		0.50
Lane Grp Cap(c), veh/h	39	790	822	117	868	903	277	0	0	287	0	0
V/C Ratio(X)	0.44	0.38	0.38	0.56	0.42	0.42	0.29	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	237	790	822	242	868	903	1275	0	0	1271	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.2	7.0	7.0	17.0	6.2	6.2	16.3	0.0	0.0	15.8	0.0	0.0
Incr Delay (d2), s/veh	7.7	1.4	1.3	4.1	1.5	1.4	0.6	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.3	1.4	0.6	1.5	1.5	0.6	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	8.3	8.3	21.1	7.7	7.6	16.9	0.0	0.0	16.0	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		625			804			80			30	
Approach Delay, s/veh		8.8			8.7			16.9			16.0	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.0	6.7	22.9	8.0	5.0	24.6
Change Period (Y+Rc), s	4.6	* 4.2	6.2	4.6	* 4.2	6.2
Max Green Setting (Gmax), s	28.2	* 5.1	16.7	28.2	* 5	16.8
Max Q Clear Time (g_c+I1), s	3.8	3.3	6.2	2.6	2.4	6.9
Green Ext Time (p_c), s	0.4	0.0	2.7	0.1	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1	37	11	10	19	40	1150	15	17	2211	112
Future Volume (veh/h)	48	1	37	11	10	19	40	1150	15	17	2211	112
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	51	1	39	12	11	20	42	1211	16	18	2327	118
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	2	79	66	22	40	65	2346	1046	36	3205	161
Arrive On Green	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.66	0.66	0.02	0.64	0.64
Sat Flow, veh/h	1781	40	1551	1781	595	1081	1781	3554	1585	1781	4979	251
Grp Volume(v), veh/h	51	0	40	12	0	31	42	1211	16	18	1585	860
Grp Sat Flow(s),veh/h/ln	1781	0	1591	1781	0	1676	1781	1777	1585	1781	1702	1825
Q Serve(g_s), s	2.5	0.0	2.2	0.6	0.0	1.6	2.0	15.4	0.3	0.9	27.3	27.9
Cycle Q Clear(g_c), s	2.5	0.0	2.2	0.6	0.0	1.6	2.0	15.4	0.3	0.9	27.3	27.9
Prop In Lane	1.00		0.98	1.00		0.65	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	90	0	81	66	0	62	65	2346	1046	36	2192	1175
V/C Ratio(X)	0.56	0.00	0.50	0.18	0.00	0.50	0.65	0.52	0.02	0.50	0.72	0.73
Avail Cap(c_a), veh/h	689	0	615	689	0	648	101	2346	1046	101	2192	1175
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	40.8	0.0	40.6	41.0	0.0	41.5	41.8	7.7	5.1	42.6	10.4	10.5
Incr Delay (d2), s/veh	5.4	0.0	4.6	1.3	0.0	6.1	10.3	0.8	0.0	10.3	2.1	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.9	0.3	0.0	0.8	1.1	5.2	0.1	0.5	9.3	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	0.0	45.3	42.4	0.0	47.7	52.1	8.5	5.2	52.9	12.6	14.6
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	B	B
Approach Vol, veh/h		91			43			1269			2463	
Approach Delay, s/veh		45.8			46.2			9.9			13.6	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	64.5		9.6	7.4	63.1		7.9				
Change Period (Y+Rc), s	* 4.2	6.5		5.1	* 4.2	6.5		4.6				
Max Green Setting (Gmax), s	* 5	56.6		34.0	* 5	56.6		34.0				
Max Q Clear Time (g_c+I1), s	2.5	17.4		4.5	4.0	29.9		3.6				
Green Ext Time (p_c), s	0.0	12.1		0.3	0.0	21.5		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	42	113	334	35	159	221	1190	592	271	1791	364
Future Volume (veh/h)	142	42	113	334	35	159	221	1190	592	271	1791	364
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	149	44	119	352	37	167	233	1253	623	285	1885	383
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	179	160	394	272	242	261	2440	758	356	2159	430
Arrive On Green	0.06	0.10	0.10	0.11	0.15	0.15	0.08	0.48	0.48	0.10	0.51	0.51
Sat Flow, veh/h	3456	1777	1585	3456	1777	1585	3456	5106	1585	3456	4271	850
Grp Volume(v), veh/h	149	44	119	352	37	167	233	1253	623	285	1495	773
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1717
Q Serve(g_s), s	4.4	2.4	7.5	10.4	1.9	10.3	6.9	17.6	35.0	8.3	40.0	41.9
Cycle Q Clear(g_c), s	4.4	2.4	7.5	10.4	1.9	10.3	6.9	17.6	35.0	8.3	40.0	41.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	215	179	160	394	272	242	261	2440	758	356	1721	868
V/C Ratio(X)	0.69	0.25	0.74	0.89	0.14	0.69	0.89	0.51	0.82	0.80	0.87	0.89
Avail Cap(c_a), veh/h	337	550	490	394	579	516	261	2440	758	458	1721	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	42.9	45.2	45.2	37.9	41.5	47.4	18.7	23.2	45.4	22.5	23.0
Incr Delay (d2), s/veh	4.0	0.7	6.7	21.8	0.2	3.5	29.9	0.8	9.8	7.6	6.2	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.1	3.2	5.6	0.8	4.2	4.0	6.9	14.5	3.9	16.6	19.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	43.6	51.8	67.0	38.1	44.9	77.3	19.5	33.0	53.0	28.8	36.3
LnGrp LOS	D	D	D	E	D	D	E	B	C	D	C	D
Approach Vol, veh/h		312			556			2109			2553	
Approach Delay, s/veh		50.5			58.5			29.9			33.8	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	55.9	16.0	16.6	12.0	58.8	10.6	22.0
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 14	46.4	* 12	32.0	* 7.8	52.3	* 10	33.7
Max Q Clear Time (g_c+I1), s	10.3	37.0	12.4	9.5	8.9	43.9	6.4	12.3
Green Ext Time (p_c), s	0.3	6.9	0.0	0.9	0.0	7.4	0.1	1.2

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

Notes

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

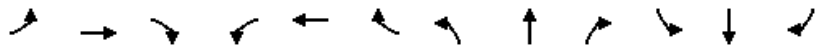
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	37	122	72	29	55	112	1836	69	108	1915	280
Future Volume (veh/h)	241	37	122	72	29	55	112	1836	69	108	1915	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	254	39	128	76	31	58	118	1933	73	114	2016	295
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	64	210	98	45	85	127	2517	95	127	2138	308
Arrive On Green	0.14	0.17	0.17	0.06	0.08	0.08	0.07	0.50	0.50	0.07	0.47	0.47
Sat Flow, veh/h	1781	384	1260	1781	583	1091	1781	5050	190	1781	4508	649
Grp Volume(v), veh/h	254	0	167	76	0	89	118	1302	704	114	1514	797
Grp Sat Flow(s),veh/h/ln	1781	0	1644	1781	0	1674	1781	1702	1836	1781	1702	1754
Q Serve(g_s), s	13.6	0.0	9.0	4.0	0.0	5.0	6.3	29.7	29.9	6.1	40.3	41.9
Cycle Q Clear(g_c), s	13.6	0.0	9.0	4.0	0.0	5.0	6.3	29.7	29.9	6.1	40.3	41.9
Prop In Lane	1.00		0.77	1.00		0.65	1.00		0.10	1.00		0.37
Lane Grp Cap(c), veh/h	257	0	274	98	0	130	127	1696	915	127	1615	832
V/C Ratio(X)	0.99	0.00	0.61	0.77	0.00	0.69	0.93	0.77	0.77	0.90	0.94	0.96
Avail Cap(c_a), veh/h	257	0	620	218	0	595	127	1696	915	127	1615	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	37.0	44.6	0.0	43.0	44.2	19.5	19.5	44.1	23.8	24.2
Incr Delay (d2), s/veh	53.0	0.0	2.2	12.0	0.0	6.3	59.4	3.4	6.2	50.9	11.8	22.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	3.7	2.1	0.0	2.3	4.8	11.8	13.5	4.4	17.8	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.8	0.0	39.2	56.7	0.0	49.3	103.6	22.9	25.7	95.1	35.6	46.8
LnGrp LOS	F	A	D	E	A	D	F	C	C	F	D	D
Approach Vol, veh/h		421			165			2124			2425	
Approach Delay, s/veh		72.2			52.7			28.3			42.1	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	54.2	9.5	21.0	13.3	51.9	18.0	12.5
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	5.1	6.5	* 6.5	* 4.2	5.1
Max Green Setting (Gmax), s	* 6.8	45.4	* 12	36.1	6.8	* 45	* 14	34.0
Max Q Clear Time (g_c+I1), s	8.1	31.9	6.0	11.0	8.3	43.9	15.6	7.0
Green Ext Time (p_c), s	0.0	10.6	0.1	1.0	0.0	1.4	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	327	316	281	271	82	464	1803	667	238	1737	135
Future Volume (veh/h)	138	327	316	281	271	82	464	1803	667	238	1737	135
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	145	344	333	296	285	86	488	1898	0	251	1828	142
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	690	548	303	613	181	524	2485		262	2060	159
Arrive On Green	0.06	0.19	0.19	0.09	0.23	0.23	0.15	0.49	0.00	0.08	0.43	0.43
Sat Flow, veh/h	3456	3554	1585	3456	2703	800	3456	5274	0	3456	4833	374
Grp Volume(v), veh/h	145	344	333	296	185	186	488	1898	0	251	1286	684
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1726	1728	1702	0	1728	1702	1803
Q Serve(g_s), s	6.2	13.0	26.2	12.9	13.6	14.0	21.0	45.7	0.0	10.9	52.4	52.8
Cycle Q Clear(g_c), s	6.2	13.0	26.2	12.9	13.6	14.0	21.0	45.7	0.0	10.9	52.4	52.8
Prop In Lane	1.00		1.00	1.00		0.46	1.00		0.00	1.00		0.21
Lane Grp Cap(c), veh/h	191	690	548	303	403	391	524	2485		262	1451	768
V/C Ratio(X)	0.76	0.50	0.61	0.98	0.46	0.47	0.93	0.76		0.96	0.89	0.89
Avail Cap(c_a), veh/h	262	735	568	303	403	391	524	2485		262	1451	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	54.1	40.7	68.4	50.2	50.4	63.0	31.5	0.0	69.3	39.8	39.9
Incr Delay (d2), s/veh	8.2	0.6	1.8	45.0	0.8	0.9	23.6	2.3	0.0	44.1	8.3	14.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.9	10.6	7.6	6.2	6.2	11.0	19.2	0.0	6.4	23.5	26.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.3	54.6	42.5	113.4	51.0	51.3	86.7	33.8	0.0	113.4	48.1	54.6
LnGrp LOS	E	D	D	F	D	D	F	C		F	D	D
Approach Vol, veh/h		822			667			2386	A		2221	
Approach Delay, s/veh		53.9			78.8			44.6			57.5	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	79.7	17.4	35.4	27.0	70.6	12.5	40.3
Change Period (Y+Rc), s	6.5	* 6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	11.4	* 73	* 13	31.1	* 23	61.8	* 11	32.9
Max Q Clear Time (g_c+I1), s	12.9	47.7	14.9	28.2	23.0	54.8	8.2	16.0
Green Ext Time (p_c), s	0.0	16.8	0.0	1.0	0.0	5.9	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

Notes

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

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

APPENDIX E

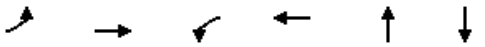
2035 WITH POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

Signal Queueing

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	6	475	181	268	610	47
v/c Ratio	0.05	0.61	0.69	0.20	0.90	0.07
Control Delay	41.2	24.4	49.8	19.3	36.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	24.4	49.8	19.3	36.3	8.5
Queue Length 50th (ft)	3	78	92	46	255	9
Queue Length 95th (ft)	16	140	#190	95	#474	25
Internal Link Dist (ft)		509		264	1550	354
Turn Bay Length (ft)	260		250			
Base Capacity (vph)	113	776	298	1368	848	814
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.61	0.61	0.20	0.72	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	347	516	13	747	167	500
v/c Ratio	0.96	0.35	0.15	1.02	0.64	1.01
Control Delay	79.1	22.4	52.5	73.5	52.0	78.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.1	22.4	52.5	73.5	52.0	78.3
Queue Length 50th (ft)	226	113	8	~230	101	~314
Queue Length 95th (ft)	#319	157	24	#261	137	#416
Internal Link Dist (ft)		346		1948	136	1460
Turn Bay Length (ft)	130		125			
Base Capacity (vph)	363	1455	86	730	489	497
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.35	0.15	1.02	0.34	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

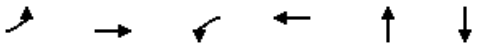
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SBL	SEL	SET	NWT
Lane Group Flow (vph)	255	203	438	407
v/c Ratio	0.52	0.42	0.22	0.42
Control Delay	8.4	17.6	4.2	15.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	17.6	4.2	15.3
Queue Length 50th (ft)	4	37	16	39
Queue Length 95th (ft)	56	106	43	94
Internal Link Dist (ft)	774		217	2046
Turn Bay Length (ft)		150		
Base Capacity (vph)	920	1343	3486	1740
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.15	0.13	0.23

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	2	457	41	366	85	13
v/c Ratio	0.01	0.37	0.10	0.28	0.21	0.03
Control Delay	15.0	8.5	12.5	7.4	8.8	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	8.5	12.5	7.4	8.8	10.1
Queue Length 50th (ft)	0	17	3	13	3	1
Queue Length 95th (ft)	5	77	29	55	37	12
Internal Link Dist (ft)		2046		1388	167	162
Turn Bay Length (ft)	150		150			
Base Capacity (vph)	340	2435	578	2914	1157	1180
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.19	0.07	0.13	0.07	0.01

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	26	536	29	506	88	62
v/c Ratio	0.11	0.23	0.12	0.22	0.29	0.19
Control Delay	16.6	6.3	16.7	6.3	10.5	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	6.3	16.7	6.3	10.5	7.2
Queue Length 50th (ft)	4	25	4	23	6	1
Queue Length 95th (ft)	23	84	24	80	36	23
Internal Link Dist (ft)		1948		1135	222	1401
Turn Bay Length (ft)	130		200			
Base Capacity (vph)	241	2322	241	2328	1181	1259
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.23	0.12	0.22	0.07	0.05

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	89	44	18	7	32	1632	13	9	1754
v/c Ratio	0.45	0.20	0.14	0.05	0.22	0.67	0.01	0.09	0.56
Control Delay	44.3	16.2	42.6	34.3	43.2	12.6	0.0	44.6	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	16.2	42.6	34.3	43.2	12.6	0.0	44.6	13.2
Queue Length 50th (ft)	41	2	8	2	15	171	0	4	182
Queue Length 95th (ft)	101	34	33	16	49	567	0	22	364
Internal Link Dist (ft)		870		249		1330			311
Turn Bay Length (ft)	270		100		250		185	260	
Base Capacity (vph)	769	721	690	681	239	2423	1109	101	3145
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.06	0.03	0.01	0.13	0.67	0.01	0.09	0.56

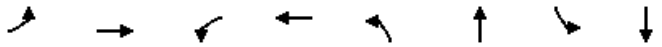
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	268	163	546	339	185	1612	557	175	1784
v/c Ratio	1.41	0.47	0.77	0.42	0.97	0.78	0.61	0.72	0.84
Control Delay	248.5	21.2	42.4	20.5	104.7	26.8	7.3	59.4	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	248.5	21.2	42.4	20.5	104.7	26.8	7.3	59.4	28.0
Queue Length 50th (ft)	~106	17	152	55	55	285	34	51	321
Queue Length 95th (ft)	#191	48	#222	94	#127	363	131	#102	407
Internal Link Dist (ft)		1388		764		1747			298
Turn Bay Length (ft)	315		380		250		240	250	
Base Capacity (vph)	190	1181	714	1613	190	2066	916	243	2122
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.41	0.14	0.76	0.21	0.97	0.78	0.61	0.72	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	123	74	61	88	36	2162	65	2277
v/c Ratio	0.89	0.34	0.61	0.51	0.47	0.70	0.42	0.66
Control Delay	107.2	21.7	80.4	27.1	76.4	18.6	59.5	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.2	21.7	80.4	27.1	76.4	18.6	59.5	13.3
Queue Length 50th (ft)	96	11	47	11	28	391	48	370
Queue Length 95th (ft)	#212	57	#107	62	#69	528	93	480
Internal Link Dist (ft)		345		406		1002		1747
Turn Bay Length (ft)	60		80		190		240	
Base Capacity (vph)	138	538	103	514	76	3068	155	3426
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.14	0.59	0.17	0.47	0.70	0.42	0.66

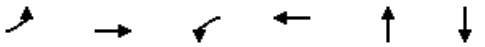
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	168	282	668	397	148	2118	91	2160
v/c Ratio	0.59	0.54	0.67	0.87	0.51	0.70	0.87	0.67	0.92
Control Delay	65.5	63.5	33.5	62.2	43.1	78.7	34.6	85.3	40.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	63.5	33.5	62.2	43.1	78.7	34.6	85.3	40.2
Queue Length 50th (ft)	76	72	117	282	142	64	565	40	610
Queue Length 95th (ft)	117	111	218	#394	197	#115	667	#81	#721
Internal Link Dist (ft)		1135			601		320		1002
Turn Bay Length (ft)	150		130	200		260		310	
Base Capacity (vph)	347	840	419	768	1247	210	2438	136	2350
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.20	0.67	0.87	0.32	0.70	0.87	0.67	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	48	437	75	388	145	141
v/c Ratio	0.28	0.38	0.39	0.29	0.24	0.21
Control Delay	37.5	20.9	34.6	15.2	12.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	20.9	34.6	15.2	12.7	9.6
Queue Length 50th (ft)	22	79	36	76	33	23
Queue Length 95th (ft)	54	128	m53	73	72	58
Internal Link Dist (ft)		509		264	1550	354
Turn Bay Length (ft)	260		250			
Base Capacity (vph)	194	1137	261	1316	592	663
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.38	0.29	0.29	0.24	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	29	802	63	811	34	117
v/c Ratio	0.11	0.45	0.20	0.42	0.12	0.30
Control Delay	35.0	17.4	32.3	14.0	26.7	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	17.4	32.3	14.0	26.7	29.1
Queue Length 50th (ft)	11	146	25	100	8	42
Queue Length 95th (ft)	35	196	59	181	31	86
Internal Link Dist (ft)		346		1948	136	1460
Turn Bay Length (ft)	130		125			
Base Capacity (vph)	344	2665	521	2744	1031	1016
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.30	0.12	0.30	0.03	0.12

Intersection Summary

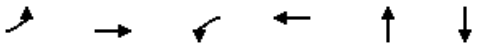
Lane Group	SBL	SEL	SET	NWT
Lane Group Flow (vph)	83	592	16	531
v/c Ratio	0.16	0.84	0.01	0.71
Control Delay	10.7	25.3	1.8	17.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.7	25.3	1.8	17.4
Queue Length 50th (ft)	4	124	1	50
Queue Length 95th (ft)	44	377	m1	91
Internal Link Dist (ft)	774		217	2046
Turn Bay Length (ft)		150		
Base Capacity (vph)	551	735	2416	974
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.81	0.01	0.55

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	8	327	33	604	49	10
v/c Ratio	0.02	0.24	0.09	0.43	0.13	0.03
Control Delay	14.0	6.6	13.8	7.8	7.8	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	6.6	13.8	7.8	7.8	11.5
Queue Length 50th (ft)	1	11	3	23	1	1
Queue Length 95th (ft)	11	46	26	85	23	11
Internal Link Dist (ft)		2046		1388	167	162
Turn Bay Length (ft)	150		150			
Base Capacity (vph)	333	2383	352	2433	1093	1021
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.09	0.25	0.04	0.01

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	17	608	65	739	80	30
v/c Ratio	0.08	0.28	0.30	0.29	0.30	0.12
Control Delay	18.9	8.4	22.0	6.0	12.7	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	8.4	22.0	6.0	12.7	12.6
Queue Length 50th (ft)	4	54	15	37	8	3
Queue Length 95th (ft)	17	96	44	120	35	19
Internal Link Dist (ft)		1948		1135	222	1401
Turn Bay Length (ft)	130		200			
Base Capacity (vph)	212	2206	217	2507	1011	980
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.28	0.30	0.29	0.08	0.03

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	51	40	12	31	42	1211	16	18	2445
v/c Ratio	0.33	0.23	0.10	0.23	0.44	0.47	0.01	0.19	0.71
Control Delay	47.5	17.2	44.8	28.6	59.9	9.8	0.0	49.7	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	17.2	44.8	28.6	59.9	9.8	0.0	49.7	14.9
Queue Length 50th (ft)	30	1	7	7	26	164	0	11	404
Queue Length 95th (ft)	68	32	25	36	#69	324	0	35	538
Internal Link Dist (ft)		870		249		1330			311
Turn Bay Length (ft)	270		100		250		185	260	
Base Capacity (vph)	657	615	657	637	96	2555	1164	96	3446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.07	0.02	0.05	0.44	0.47	0.01	0.19	0.71

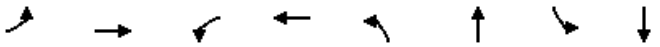
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	149	163	352	204	233	1253	623	285	2268
v/c Ratio	0.48	0.49	0.87	0.45	0.87	0.52	0.58	0.66	0.87
Control Delay	48.7	19.8	66.4	14.2	77.3	19.8	3.8	49.4	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	19.8	66.4	14.2	77.3	19.8	3.8	49.4	25.4
Queue Length 50th (ft)	46	14	115	11	77	201	0	89	432
Queue Length 95th (ft)	80	46	#201	46	#151	257	61	136	542
Internal Link Dist (ft)		1388		764		1747			298
Turn Bay Length (ft)	315		380		250		240	250	
Base Capacity (vph)	346	1087	404	1154	267	2406	1077	469	2609
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.15	0.87	0.18	0.87	0.52	0.58	0.61	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	254	167	76	89	118	2006	114	2311
v/c Ratio	0.95	0.50	0.43	0.46	0.89	0.80	0.86	0.93
Control Delay	85.5	17.6	47.8	26.1	100.7	22.9	94.8	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.5	17.6	47.8	26.1	100.7	22.9	94.8	30.1
Queue Length 50th (ft)	151	21	43	18	71	352	68	452
Queue Length 95th (ft)	#320	83	89	64	#185	457	#178	#636
Internal Link Dist (ft)		345		406		1002		1747
Turn Bay Length (ft)	60		80		190		240	
Base Capacity (vph)	267	729	226	662	132	2521	132	2496
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.23	0.34	0.13	0.89	0.80	0.86	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	145	344	333	296	371	488	2600	251	1970
v/c Ratio	0.56	0.72	0.55	0.90	0.67	0.87	0.99	0.88	0.86
Control Delay	70.6	66.0	28.0	91.1	57.7	73.8	45.3	92.8	39.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	66.0	28.0	91.1	57.7	73.8	45.3	92.8	39.0
Queue Length 50th (ft)	64	157	164	137	157	221	794	116	569
Queue Length 95th (ft)	105	211	262	#233	213	#327	#1007	#205	684
Internal Link Dist (ft)		1135			601		320		1002
Turn Bay Length (ft)	150		130	200		260		310	
Base Capacity (vph)	284	800	615	329	835	569	2637	284	2283
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.43	0.54	0.90	0.44	0.86	0.99	0.88	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX E

2035 WITH POINSETTIA LANE GAP CLOSURE LEVEL OF SERVICE WORKSHEETS

With Southbound Right-Turn at El Camino Real/Poinsettia Lane

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.691
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	176	1531	529	166	1510	185	255	41	114	519	36	286
Growth 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
Initial Bse:	176	1531	529	166	1510	185	255	41	114	519	36	286
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	176	1531	529	166	1510	185	255	41	114	519	36	286
User 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
PHF 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
PHF Volume:	176	1531	529	166	1510	185	255	41	114	519	36	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1531	529	166	1510	185	255	41	114	519	36	286
PCE 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
MLF 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
FinalVolume:	176	1531	529	166	1510	185	255	41	114	519	36	286
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4800	1600	3200	1600	1600	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.32	0.33	0.05	0.31	0.12	0.08	0.03	0.07	0.16	0.02	0.18
Crit Moves:			****	****			****					****

Poinsettia Reach E (LSA Project No. HCR1803)
Future Plus Extension
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 El Camino Real / Poinsettia Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Street Name:	El Camino Real						Poinsettia Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	221	1190	592	271	1791	364	142	42	113	334	35	159
Growth 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
Initial Bse:	221	1190	592	271	1791	364	142	42	113	334	35	159
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	221	1190	592	271	1791	364	142	42	113	334	35	159
User 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
PHF 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
PHF Volume:	221	1190	592	271	1791	364	142	42	113	334	35	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1190	592	271	1791	364	142	42	113	334	35	159
PCE 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
MLF 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
FinalVolume:	221	1190	592	271	1791	364	142	42	113	334	35	159
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	3200	4800	1600	3200	4800	1600	3200	1600	1600	3200	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.25	0.37	0.08	0.37	0.23	0.04	0.03	0.07	0.10	0.02	0.10
Crit Moves:			****	****					****	****		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	41	114	519	36	286	176	1531	529	166	1510	185
Future Volume (veh/h)	255	41	114	519	36	286	176	1531	529	166	1510	185
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	268	43	120	546	38	301	185	1612	557	175	1589	195
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	188	167	632	414	369	191	2077	645	245	2156	669
Arrive On Green	0.06	0.11	0.11	0.18	0.23	0.23	0.06	0.41	0.41	0.07	0.42	0.42
Sat Flow, veh/h	3456	1777	1585	3456	1777	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	268	43	120	546	38	301	185	1612	557	175	1589	195
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	5.0	2.0	6.6	13.8	1.5	16.2	4.8	24.7	29.0	4.5	23.6	7.3
Cycle Q Clear(g_c), s	5.0	2.0	6.6	13.8	1.5	16.2	4.8	24.7	29.0	4.5	23.6	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	188	167	632	414	369	191	2077	645	245	2156	669
V/C Ratio(X)	1.40	0.23	0.72	0.86	0.09	0.81	0.97	0.78	0.86	0.71	0.74	0.29
Avail Cap(c_a), veh/h	191	630	562	720	902	805	191	2077	645	245	2156	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	37.0	39.1	35.8	27.1	32.8	42.5	23.2	24.5	41.0	21.9	17.2
Incr Delay (d2), s/veh	208.2	0.6	5.6	9.7	0.1	4.4	55.0	2.9	14.3	9.5	2.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.9	2.8	6.6	0.6	6.5	3.5	10.0	12.8	2.2	9.4	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	250.9	37.6	44.7	45.4	27.2	37.2	97.6	26.1	38.8	50.5	24.2	18.3
LnGrp LOS	F	D	D	D	C	D	F	C	D	D	C	B
Approach Vol, veh/h		431			885			2354			1959	
Approach Delay, s/veh		172.2			41.8			34.7			25.9	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	43.2	20.7	15.7	9.2	44.6	9.2	27.2
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 6.4	36.7	* 19	32.0	* 5	38.1	* 5	45.8
Max Q Clear Time (g_c+I1), s	6.5	31.0	15.8	8.6	6.8	25.6	7.0	18.2
Green Ext Time (p_c), s	0.0	4.9	0.7	0.9	0.0	8.9	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Notes

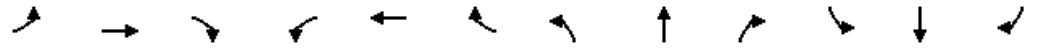
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	268	163	546	339	185	1612	557	175	1589	195
v/c Ratio	1.41	0.47	0.77	0.42	0.97	0.78	0.61	0.72	0.74	0.25
Control Delay	248.5	21.2	42.4	20.5	104.7	26.8	7.3	59.4	24.8	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	248.5	21.2	42.4	20.5	104.7	26.8	7.3	59.4	24.8	4.7
Queue Length 50th (ft)	~106	17	152	55	55	285	34	51	271	7
Queue Length 95th (ft)	#191	48	#222	94	#127	363	131	#102	345	49
Internal Link Dist (ft)		1388		764		1747			298	
Turn Bay Length (ft)	315		380		250		240	250		
Base Capacity (vph)	190	1181	714	1613	190	2066	916	243	2145	767
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.41	0.14	0.76	0.21	0.97	0.78	0.61	0.72	0.74	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	42	113	334	35	159	221	1190	592	271	1791	364
Future Volume (veh/h)	142	42	113	334	35	159	221	1190	592	271	1791	364
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	149	44	119	352	37	167	233	1253	623	285	1885	383
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	179	160	394	272	242	261	2440	758	356	2581	801
Arrive On Green	0.06	0.10	0.10	0.11	0.15	0.15	0.08	0.48	0.48	0.10	0.51	0.51
Sat Flow, veh/h	3456	1777	1585	3456	1777	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	149	44	119	352	37	167	233	1253	623	285	1885	383
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	4.4	2.4	7.5	10.4	1.9	10.3	6.9	17.6	35.0	8.3	29.9	16.3
Cycle Q Clear(g_c), s	4.4	2.4	7.5	10.4	1.9	10.3	6.9	17.6	35.0	8.3	29.9	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	179	160	394	272	242	261	2440	758	356	2581	801
V/C Ratio(X)	0.69	0.25	0.74	0.89	0.14	0.69	0.89	0.51	0.82	0.80	0.73	0.48
Avail Cap(c_a), veh/h	337	550	490	394	579	516	261	2440	758	458	2581	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	42.9	45.2	45.2	37.9	41.5	47.4	18.7	23.2	45.4	20.0	16.7
Incr Delay (d2), s/veh	4.0	0.7	6.7	21.8	0.2	3.5	29.9	0.8	9.8	7.6	1.9	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.1	3.2	5.6	0.8	4.2	4.0	6.9	14.5	3.9	11.7	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	43.6	51.8	67.0	38.1	44.9	77.3	19.5	33.0	53.0	21.9	18.7
LnGrp LOS	D	D	D	E	D	D	E	B	C	D	C	B
Approach Vol, veh/h		312			556			2109			2553	
Approach Delay, s/veh		50.5			58.5			29.9			24.9	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	55.9	16.0	16.6	12.0	58.8	10.6	22.0
Change Period (Y+Rc), s	* 4.2	6.5	* 4.2	6.2	* 4.2	6.5	* 4.2	6.2
Max Green Setting (Gmax), s	* 14	46.4	* 12	32.0	* 7.8	52.3	* 10	33.7
Max Q Clear Time (g_c+I1), s	10.3	37.0	12.4	9.5	8.9	31.9	6.4	12.3
Green Ext Time (p_c), s	0.3	6.9	0.0	0.9	0.0	15.4	0.1	1.2

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	149	163	352	204	233	1253	623	285	1885	383
v/c Ratio	0.48	0.49	0.87	0.45	0.87	0.52	0.58	0.66	0.71	0.39
Control Delay	48.7	19.8	66.4	14.2	77.3	19.8	3.8	49.4	20.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	19.8	66.4	14.2	77.3	19.8	3.8	49.4	20.2	4.6
Queue Length 50th (ft)	46	14	115	11	77	201	0	89	317	25
Queue Length 95th (ft)	80	46	#201	46	#151	257	61	136	397	80
Internal Link Dist (ft)		1388		764		1747			298	
Turn Bay Length (ft)	315		380		250		240	250		
Base Capacity (vph)	346	1087	404	1154	267	2406	1077	469	2655	970
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.15	0.87	0.18	0.87	0.52	0.58	0.61	0.71	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX F

TRAFFIC SIGNAL WARRANT WORKSHEETS

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE _____
CALC _____ DATE _____
CHK _____ DATE _____

DIST _____ CO _____ RTE _____ PM _____

Major St: Poinsettia Lane
Minor St: Cassia Road

Critical Approach Speed _____ mph
Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph ☑
or
In built up area of isolated community of < 10,000 population ☐
} RURAL (R)

☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☑ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume

100% SATISFIED YES ☑ NO ☐
80% SATISFIED YES ☑ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				11:00 am	12:00 pm	13:00	14:00	15:00	16:00	17:00	18:00	Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	477	531	531	796	796	690	796	690	
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	327	364	400	546	473	509	546	473	

Condition B - Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)									

Combination of Conditions A & B SATISFIED YES ☐ NO ☐

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES ☑ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	14:00	15:00	16:00	17:00 Hour
Both Approaches - Major Street		✓	804	804	680	804
Higher Approach - Minor Street	✓		555	473	493	535

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☑ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☑ No ☐

WARRANT 3 - Peak Hour SATISFIED YES ☑ NO ☐
(Part A or Part B must be satisfied)

PART A SATISFIED YES ☐ NO ☐

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☐

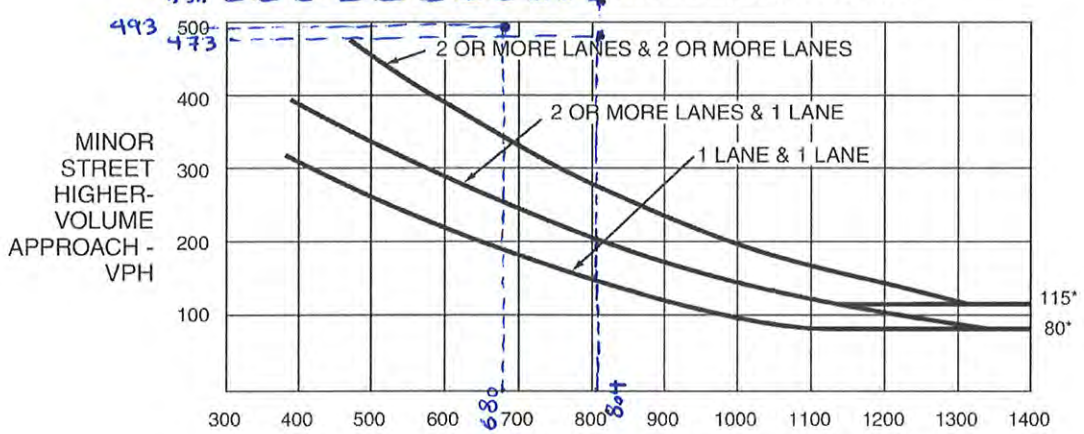
PART B SATISFIED YES ☑ NO ☐

APPROACH LANES	One	2 or More	Major Minor 7:15/7:30 Hour
Both Approaches - Major Street		✓	906
Higher Approach - Minor Street	✓		568

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☑ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☑ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

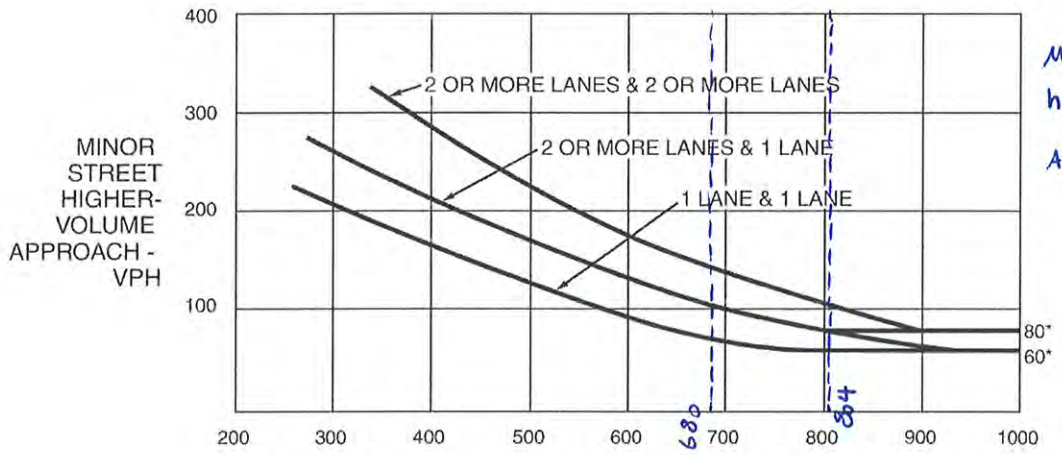
Figure 4C-T. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

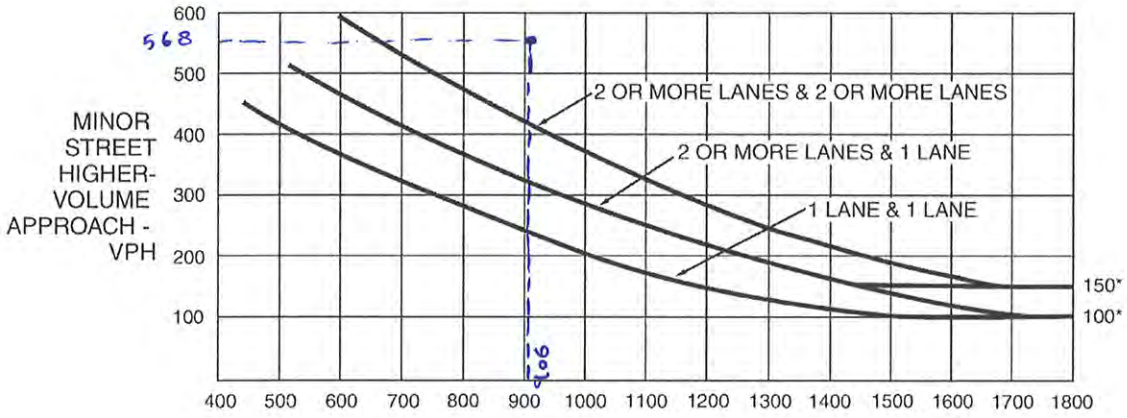
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



Minor Street Volumes higher than 400 All points above Curves

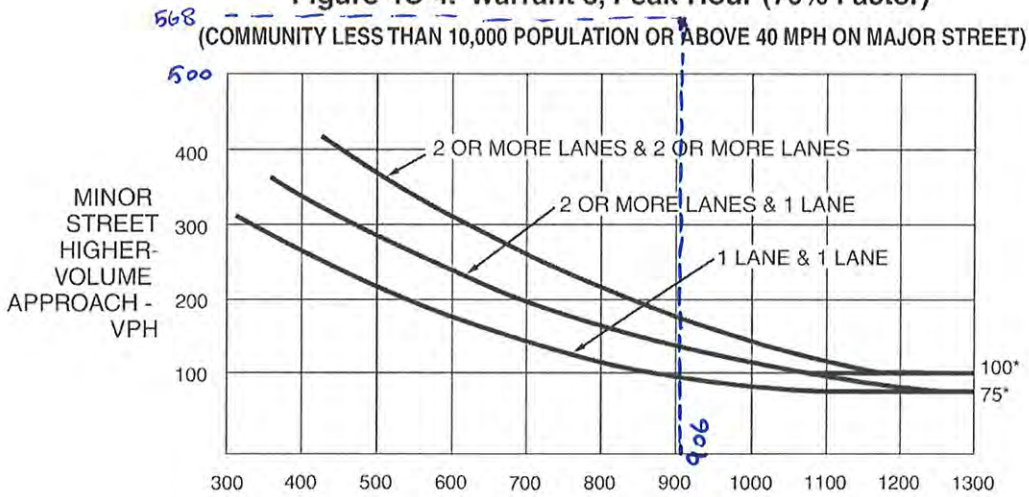
*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-3. Warrant 3, Peak Hour



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

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



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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part 1 (Parts A or B must be satisfied)

	Hours - - ->				
A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours				

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☐

	Hours - - ->	7:15			
B.	Vehicles per hour for any 1 hour	1,474			
	Pedestrians per hour for any 1 hour	0			

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☑

Part 2 SATISFIED YES ☐ NO ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐ No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☐ No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part A
Gap/Minutes and # of Children

SATISFIED YES ☐ NO ☐

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES ☐ NO ☐
AND Children > 20/hr YES ☐ NO ☐

AND, Consideration has been given to less restrictive remedial measures.	Yes ☐ No ☐

Part B SATISFIED YES ☐ NO ☐

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐ No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour

*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)

*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System **SATISFIED YES ☐ NO ☐**
(All Parts Must Be Satisfied)

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	Yes ☐ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☐ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant **SATISFIED YES ☐ NO ☐**
(All Parts Must Be Satisfied)

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☐
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☐
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	Yes ☐ No ☐
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

WARRANT 8 - Roadway Network **SATISFIED YES ☐ NO ☐**
(All Parts Must Be Satisfied)

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour _____ Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic			
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan			
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing **SATISFIED YES ☐ NO ☐**
(Both Parts A and B Must Be Satisfied)

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☐
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE _____
CALC _____ DATE _____
CHK _____ DATE _____

DIST _____ CO _____ RTE _____ PM _____

Major St: Poinsettia Lane
Minor St: Skimmer Ct – Oriole Ct

Critical Approach Speed _____ mph
Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph ☑
or
In built up area of isolated community of < 10,000 population ☐
} RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☑
80% SATISFIED YES ☐ NO ☑

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				11:00 a.m.	12:00 p.m.	13:00	14:00	15:00	16:00	17:00	18:00	Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	390	390	439	1,268	731	683	634	341	
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	25	38	38	60	38	38	47	32	

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☑
80% SATISFIED YES ☐ NO ☑

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				11:00 a.m	12:00p.m	13:00	14:00	15:00	16:00	17:00	18:00	Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	390	390	439	1,268	731	683	634	341	
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	25	38	38	60	38	38	47	32	

Combination of Conditions A & B SATISFIED YES ☐ NO ☐

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES ☐ NO ☑

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	14:00	15:00	16:00	17:00 Hour
Both Approaches - Major Street		✓	1,249	723	690	624
Higher Approach - Minor Street	✓		68	40	38	34

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☑
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☑

WARRANT 3 - Peak Hour SATISFIED YES ☐ NO ☐
(Part A or Part B must be satisfied)

PART A SATISFIED YES ☐ NO ☐

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☐

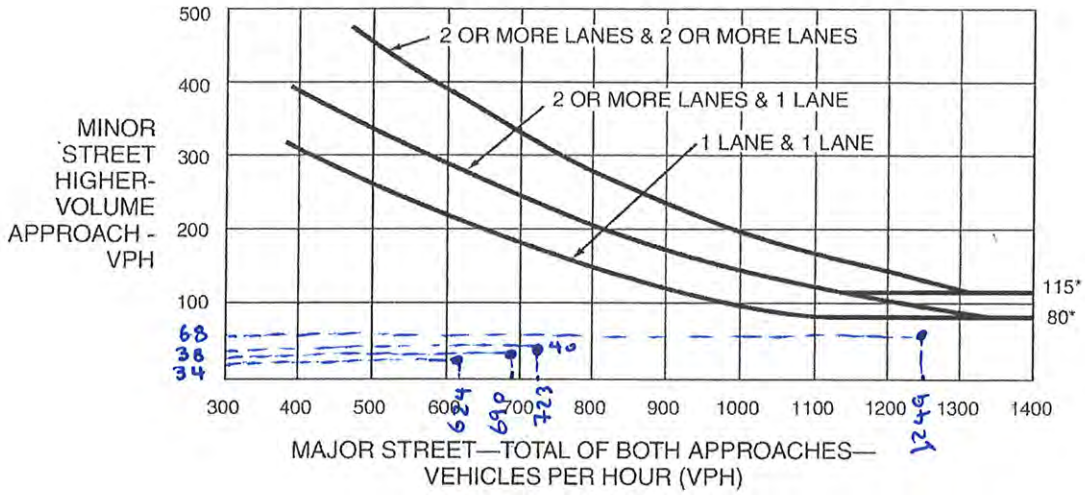
PART B SATISFIED YES ☐ NO ☐

APPROACH LANES	One	2 or More	Major Minor 2:15pm / 7:00 Hour
Both Approaches - Major Street		✓	1,268
Higher Approach - Minor Street	✓		63

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☑

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

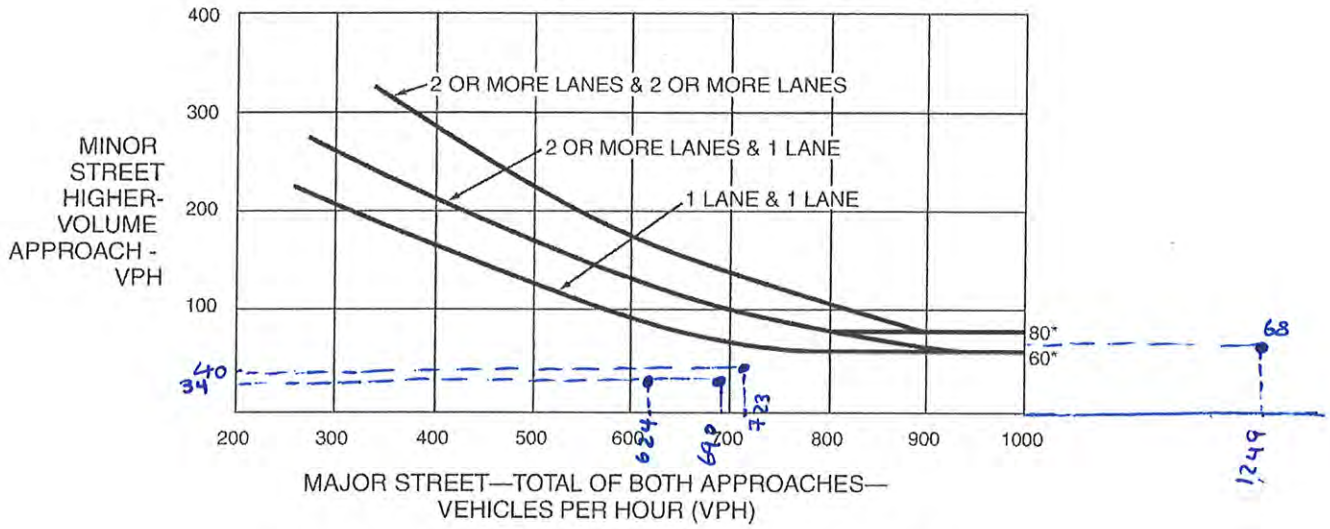
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

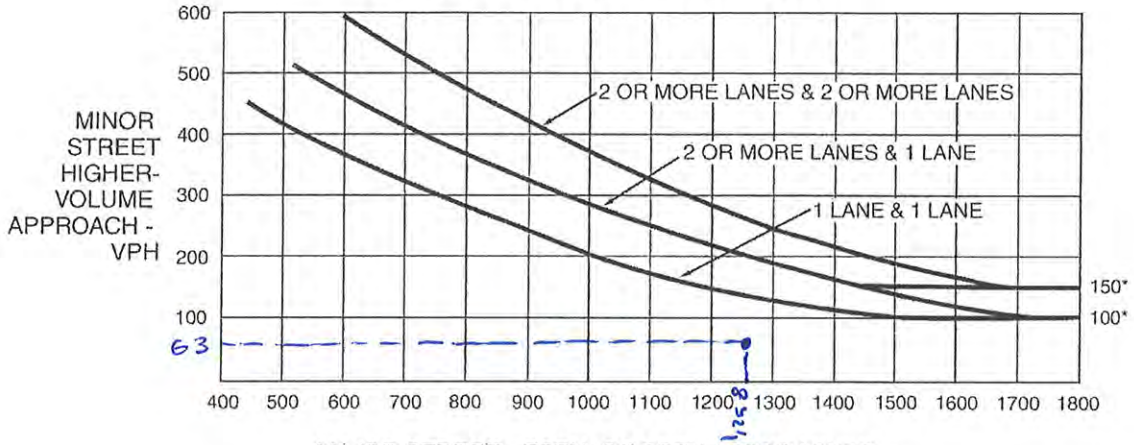
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

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



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

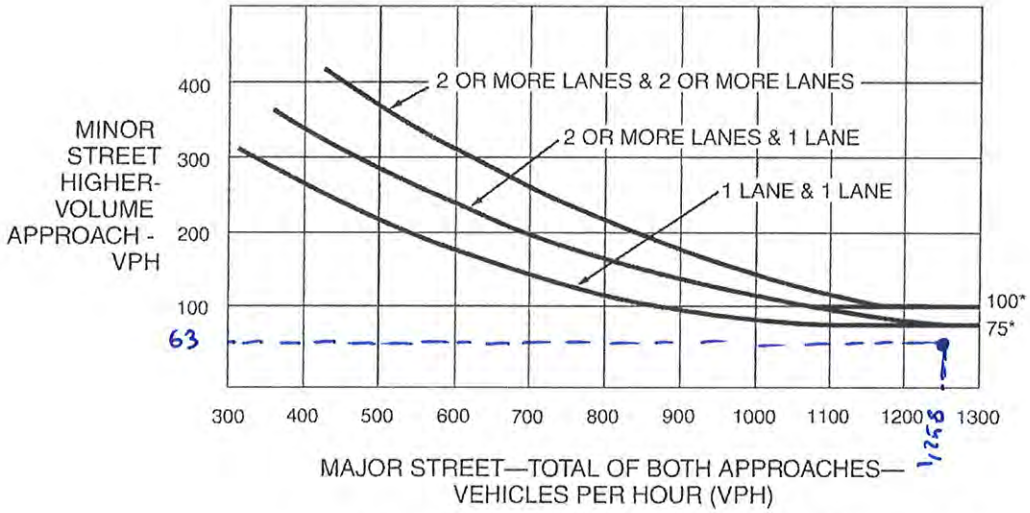
Figure 4C-3. Warrant 3, Peak Hour



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

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

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



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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part 1 (Parts A or B must be satisfied)

	Hours - - ->				
A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours				

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☐

	Hours - - ->				
B.	Vehicles per hour for any 1 hour	1,321			
	Pedestrians per hour for any 1 hour	6			

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☑

Part 2 SATISFIED YES ☐ NO ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☐	No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part A SATISFIED YES ☐ NO ☐
Gap/Minutes and # of Children

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES ☐ NO ☐
AND Children > 20/hr YES ☐ NO ☐

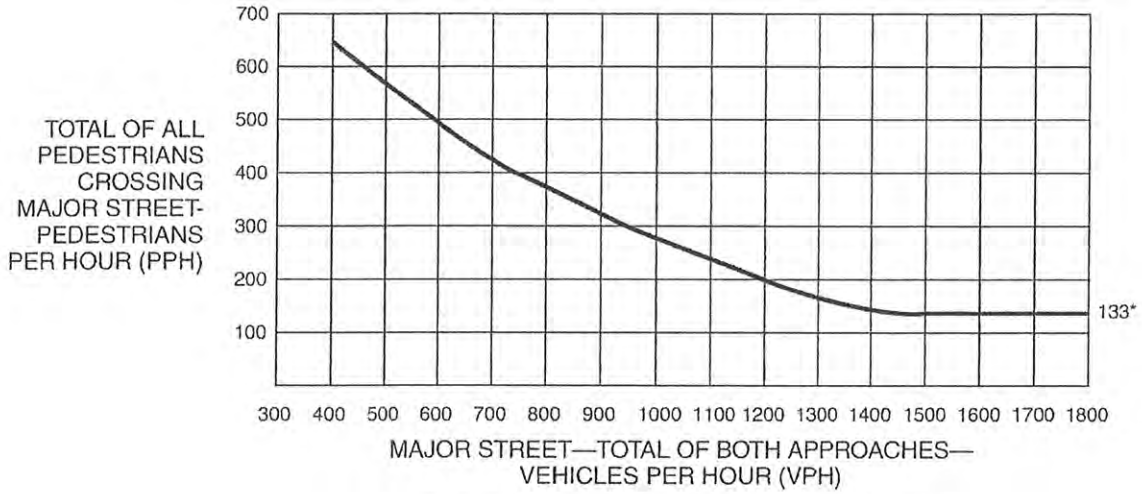
AND, Consideration has been given to less restrictive remedial measures.	Yes ☐	No ☐

Part B SATISFIED YES ☐ NO ☐

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐	No ☐

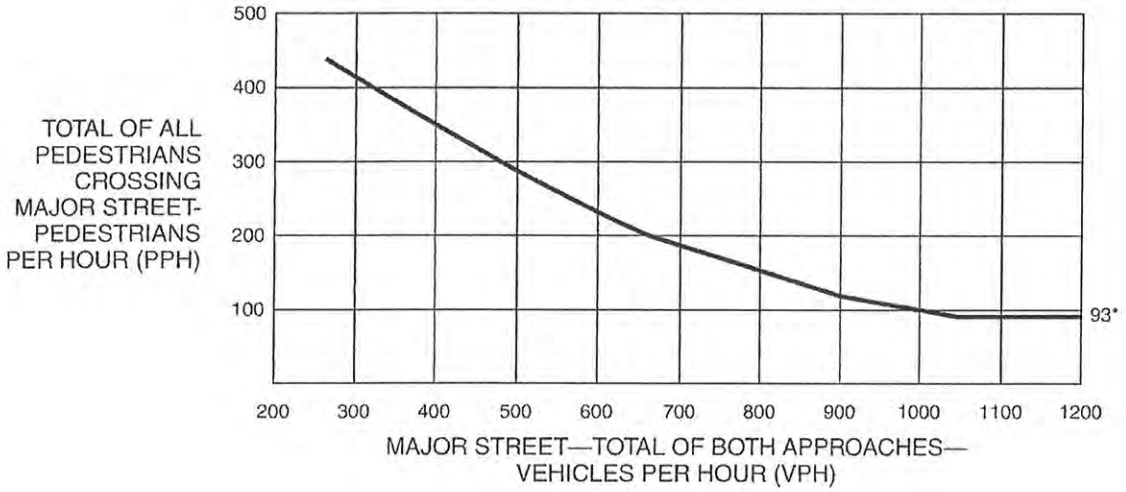
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System **SATISFIED YES ☐ NO ☐**
(All Parts Must Be Satisfied)

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	Yes ☐ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☐ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant **SATISFIED YES ☐ NO ☐**
(All Parts Must Be Satisfied)

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☐
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☐
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		Yes ☐ No ☐
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

WARRANT 8 - Roadway Network **SATISFIED YES ☐ NO ☐**
(All Parts Must Be Satisfied)

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour _____ Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B
Hwy. System Serving as Principal Network for Through Traffic		
Rural or Suburban Highway Outside Of, Entering, or Traversing a City		
Appears as Major Route on an Official Plan		
Any Major Route Characteristics Met, Both Streets		Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing **SATISFIED YES ☐ NO ☐**
(Both Parts A and B Must Be Satisfied)

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☐
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

APPENDIX G

POINSETTIA LANE BIOLOGICAL RESOURCES ASSESSMENT RESULTS

From: Patrick Somerville <psomerville@HNTB.com>
Sent: Thursday, March 14, 2019 9:42 PM
To: Arthur Black
Subject: RE: Carlsbad

Arthur,

I swung by on my way back up from SD. That vault is for SDG&E gas and it appears that it does not have a traffic rated lid on it. It also may not be able to be adjusted to the new street grade without rebuilding the vault in its entirety (or relocate elsewhere). One of two things will happen…1) they are in franchise and all costs are on SDG&E or 2) they have an easement or prior rights and the City will pick up the tab of the work. It's really difficult to understand what that cost might be…range might be $100k to $500k (or more for full relocation).

There is a 16" Kinder Morgan petroleum line in the street. There is a cathodic protection testing station in the curb return, this is a simple adjust to grade.

Traffic signal controller will be in the way and require relocation.

Retaining wall will reach 12' in height at the corner. This should be a typical/standard plan retaining wall. Assuming it'll go this route instead of slope to minimize impact to mitigation area.

I took some pics while I was out there, sent you a Dropbox link to them.

Length	Width-Depth	Total-Conversion	Unit Cost	Cost	Item
200	8	1600	$ 6.00	$ 9,600	SW
200			$ 30.00	$ 6,000	CG
2100	1	0.074	$ 150.00	$ 23,310	AC
2100	2	27	$ 75.00	$ 11,667	AB
3700	3	27	$ 50.00	$ 20,556	RX
200	8		$ 100.00	$ 160,000	Wall
				$ 100,000	TS Mod
				$ 2,500	S&S
		500	$ 10.00	$ 5,000	Planting & Irrigation
			20%	$ 66,226	Misc Items
				$ 404,859	Subtotal Construction
			30%	$ 121,458	Soft Costs
		2100	$ 50.00	$ 105,000	R/W
			30%	$ 189,395	Contingency
				$ 820,711	Total Estimate

Pat

This e-mail and any files transmitted with it are confidential and are intended solely for the use of the individual or entity to whom they are addressed. If you are NOT the intended recipient and receive this communication, please delete this message and any attachments. Thank you.

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: October 2, 2018

TO: The City of Carlsbad

FROM: Jaime Morales, LSA Senior Biologist

SUBJECT: Poinsettia Lane Reach E Project – Biological Resources Assessment Results (LSA Project No. HCR1803)

This memorandum describes the results of a biological resources assessment performed at the project area at the northwestern corner of the intersection of Poinsettia Avenue and El Camino Real in the City of Carlsbad, California (see attached Figure 1 for project location; all figures attached).

METHODOLOGY

On September 18, 2018, LSA Senior Biologist Jaime Morales walked the entire study area (a larger area surrounding and including the impact footprint) and mapped vegetation communities according to the Habitat Management Plan for Natural Communities in the City of Carlsbad (HMP) vegetation classifications. Mr. Morales used a field map containing a recent aerial photograph to record vegetation communities on site. Mr. Morales documented all plant and wildlife species observed and/or detected during the assessment.

RESULTS

With respect to the HMP, the study area is within the Coastal Zone, within the eastern edge of the central section of Local Facilities Management Zone 21, and within an existing hardline preserve (Preserve Number P/A#705). A portion of the study area (southern end) is within a standards area that will be a future preserve. A very small portion (southeastern corner of the study area) closest to the intersection of El Camino Real and Poinsettia Lane is outside of existing hardline preserve and standards areas. Figure 2 displays the boundaries of the preserve and standards areas.

Soils within the study area are composed of Loamy alluvial land-Huerhuero complex, 9 to 50 percent slopes, severely eroded. This complex occurs on old coastal ridges. The landscape is one of strongly sloping to steep, severely eroded soils and alluvial fill along drainage ways. There are barren exposures of soft marine sediments, sandstone, and shale.

The vegetation within the study area was dominated by southern maritime chaparral that appeared to be recovering from a recent fire, as evidenced by the charred remains of several bushes. The southern maritime chaparral comprises the following species: Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*; federally-listed as endangered, California Rare Plant Rank [CRPR] 1B.1, Narrow Endemic Species), summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*; CRPR 1B.2),

coastal goldenbush (*Isocoma menziesii*), common sun rose (*Helianthemum scoparium*), virgated wreath plant (*Stephanomeria virgata*), bushmallow (*Malacothamnus densiflorus*), laurel sumac (*Malosma laurina*), deerweed (*Acmispon glaber*), brittlebush (*Encelia farinosa*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), lemonadeberry (*Rhus integrifolia*), chamise (*Adenostoma fasciculata*), coyote brush (*Baccharis pilularis*), coastal prickly pear (*Opuntia littoralis*), and Mojave yucca (*Yucca schidigera*). A row of mostly mature coastal goldenbush and brittlebush shrubs occurs west of and adjacent to the sidewalk on the west side of El Camino Real (east of the eastern property fence). An area near the center of the study area lacks vegetation and was mapped as bare ground. Figure 2 displays the boundaries of vegetation communities within the study area.

The following wildlife species were observed during the biological resources assessment: western tiger swallowtail (*Papilio rutulus*), western fence lizard (*Sceloporus occidentali*), American crow (*Corvus brachyrhynchos*), black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), and mourning dove (*Zenaida macroura*).

Del Mar manzanita and summer holly were the only special-status plant species observed during the biological resources assessment. No special-status wildlife species were observed or detected during the biological resources assessment. Based on a review of the California Department of Fish and Wildlife's California Natural Diversity Data Base (CNDDB) and the California Native Plant Society's Online Inventory of Rare and Endangered Plants of California, the following special-status plant and wildlife species have a potential to occur within the study area due to the presence of suitable habitat: Del Mar Mesa sand aster (*Corethrogyne filaginifolia* ssp. *linifolia*; CRPR 1B.1, Narrow Endemic Species), Orcutt's brodiaea (*Brodiaea orcuttii*; CRPR 1B.1, Narrow Endemic Species), Nuttall's scrub oak (*Quercus dumosa*; CRPR 1B.1), wart-stemmed ceanothus (*Ceanothus verrucosus*; CRPR 2B.2), coastal California gnatcatcher (*Polioptila californica californica*; federally-listed as threatened, CDFW Species of Special Concern), and northwestern San Diego pocket mouse (*Chaetodipus fallax* ssp. *fallax*; CDFW Species of Special Concern).

Nuttall's scrub oak and wart-stemmed ceanothus are conspicuous, perennial shrubs that would have been identified had they been on site. Orcutt's brodiaea and Del Mar Mesa sand aster are perennial herbs that would be difficult to identify when not flowering. Orcutt's brodiaea flowers between the months of May and July, while Del Mar Mesa sand aster flowers from March through September. Neither of these species was identified within the study area during the survey. A focused survey for Orcutt's brodiaea and Del Mar Mesa sand aster would need to be performed to determine conclusively that these species are absent from the study area.

Although coastal California gnatcatcher was not detected during the biological resources assessment, the southern maritime chaparral within the study area is suitable to support this species. A focused survey for coastal California gnatcatcher would need to be performed to determine conclusively that this species is absent from the study area.

Because burrows were generally absent from the study area and the most recent occurrence of northwestern San Diego pocket mouse in the vicinity of the study area (per the CNDDB) was in 1992, this species is not expected to be present within the study area.

No aquatic resources subject to City of Carlsbad or resource agency jurisdiction were identified within the study area during the biological resources assessment.

CONCLUSION

Portions of the study area are within existing hardline preserve and standards areas. Per the Guidelines for Biological Studies (Technology Associates 2008), impacts to biological resources are not allowed within hardline areas, unless (a) they are associated with a covered project, as defined by the HMP, (b) an equivalency finding results in a minor amendment and adjustment to the hardline boundaries, or (c) a major amendment to the HMP is approved.

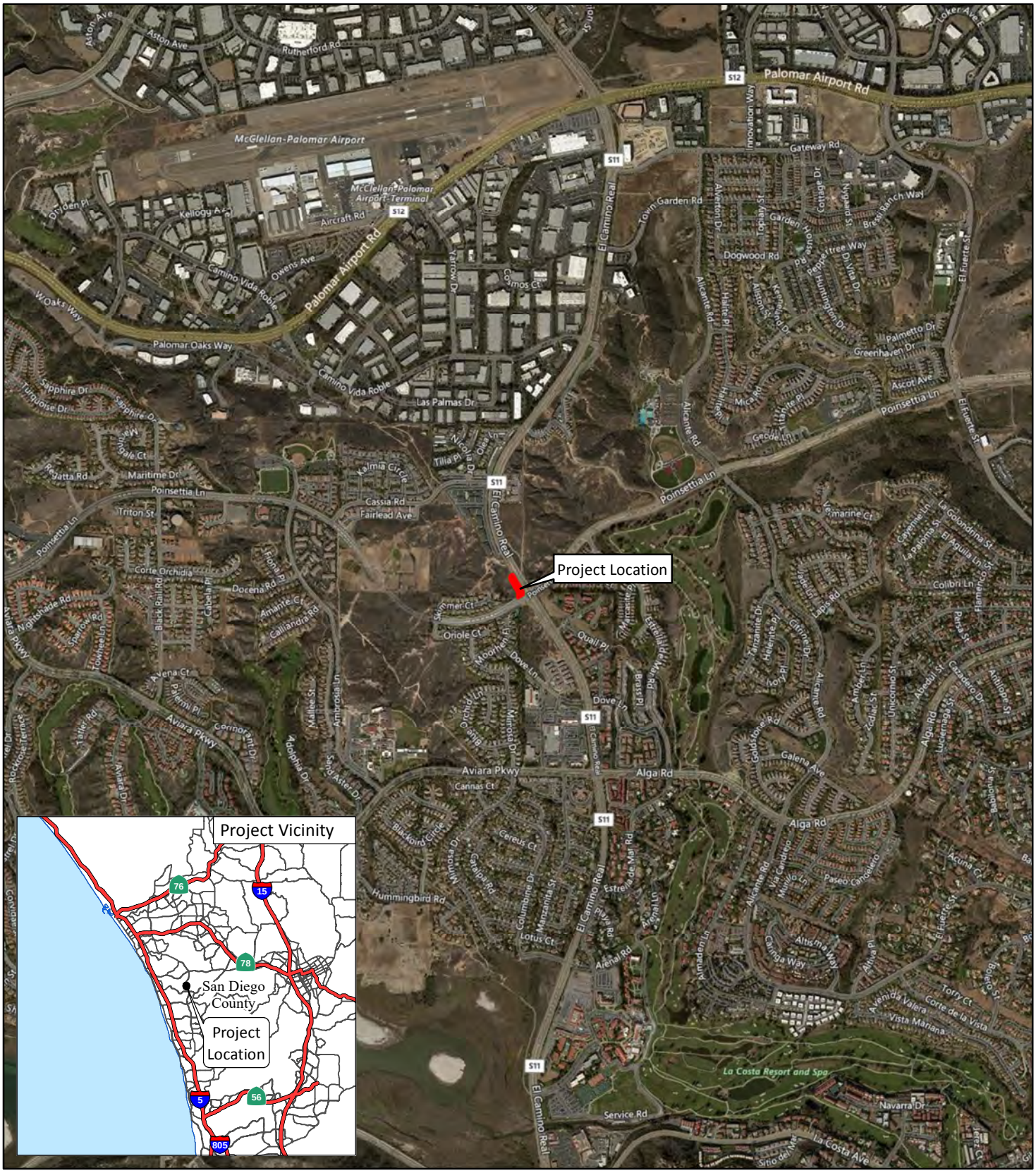
If impacts within hardline areas are approved, the HMP will require a 3:1 mitigation to impact ratio for impacts to southern maritime chaparral. An impact area that includes the workspace necessary to perform the proposed road improvement and all necessary access and staging areas will be required to quantify impacts to southern maritime chaparral and to determine the total mitigation requirement. Furthermore, because the project site is within the Coastal Zone, the project must comply with additional conservation standards in the HMP (Conservation Standards 7-1 to 7-14 on page D-114 of the HMP).

Focused surveys for Orcutt's brodiaea, Del Mar Mesa sand aster, and coastal California gnatcatcher should be performed to determine the presence/absence of these species.

Please contact me at (760) 934-5471 or at Jaime.Morales@LSA.net if you have any questions or comments.

ATTACHMENTS

- Figure 1: Project Location Map
- Figure 2: Vegetation Map



LSA

LEGEND

Project Location

FIGURE 1

N

0 1000 2000

FEET

SOURCE: Bing Maps (2015)

I:\HCR1803\GIS\ProjLoc.mxd (10/2/2018)

Poinsettia Lane Reach E Project

Project Location

LSA

LEGEND

Study Area

Vegetation

Bare Ground

Southern Maritime Chaparral

Carlsbad HMP

Existing Hardline Preserve

Standards Area

0 50 100

FEET

SOURCE: Bing Maps (2015)

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FIGURE 2

Poinsettia Lane Reach E Project

Vegetation Communities