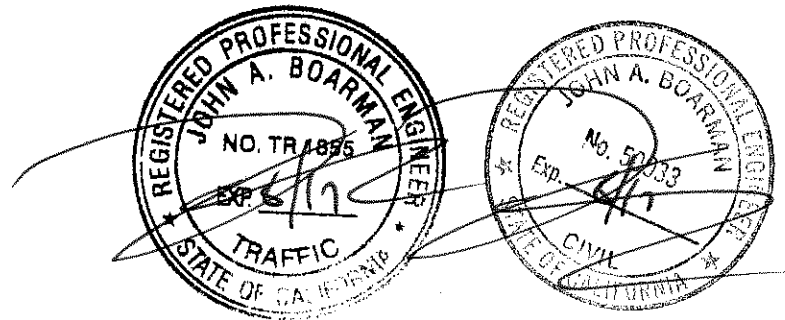


TRAFFIC IMPACT ANALYSIS
EAST OTAY MESA SPECIFIC PLAN AMENDMENT
County of San Diego, California
December 8, 2016

LLG Ref. 3-15-2455



Prepared by:
Amelia Giacalone
Transportation Planner III

Under the Supervision of:
John A. Boarman, P.E.
Principal

**Linscott, Law &
Greenspan, Engineers**
4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

EXECUTIVE SUMMARY

The East Otay Mesa Specific Plan Amendment project (Project) is a proposed development on approximately 224 acres located east of SR-125 and Harvest Road and north of Otay Mesa Road in the County of San Diego. The Project proposes up to 3,158 residential dwelling units, 47.7 acres of Technology Park land uses, a 6.8 acre Neighborhood Shopping Center and 1.0 acre of Specialty Retail land uses.

Currently, the East Otay Mesa Specific Plan does not allow for residential uses (other than very low density on land generally unsuitable for intensive development). The Project's associated amendment to the East Otay Mesa Specific Plan would establish a new Mixed-Use Village core area in order to allow for the establishment of mixed-use within the community plan area. The new Mixed-Use Land Use Designation would allow for a mix of residential, employment, and retail uses.

The Project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region"* (April 2002). The Project is calculated to generate 34,124 average daily trips, 2,785 AM peak hour trips, and 3,474 PM peak hour trips. This report analyzes the following conditions:

- Existing Conditions
- Existing + Project Conditions
- Cumulative (Year 2020) with Project Conditions

Based on the County of San Diego and City of San Diego significance criteria, the proposed Project was calculated to contribute to direct and cumulative impacts in the County of San Diego and the City of San Diego, as summarized below in **Table A** and discussed further in *Section 11.0* of this study.

TABLE A
SUMMARY OF SIGNIFICANT IMPACTS & MITIGATION MEASURES

Location	Impact Type	Mitigation Measure
Intersections		
#4. Otay Mesa Road / La Media Road (City of San Diego)	Direct & Cumulative	The Project will contribute a fairshare towards the planned improvements to this intersection as reported in the <i>Transportation Analysis for the Otay Mesa Community Plan Update</i> , Urban Systems, August 30, 2013.
#8. Otay Mesa Road / Harvest Road (County of San Diego)	Direct & Cumulative	Signalize the intersection and provide the following lane configurations: • Southbound movement: one dedicated right turn lane with overlap phasing and a shared thru / left turn lane. • Westbound movement: one shared thru / right turn lane, one dedicated thru lane and one dedicated left turn lane. • Northbound movement: one shared thru / right turn / left turn lane. • Eastbound movement: one shared thru / right turn lane, one dedicated thru lane and two dedicated left turn lanes. In addition, the Project should pay the appropriate TIF amount toward the County TIF Program to mitigate the Project's cumulative impact.
#9. Otay Mesa Road / Sanyo Road (County of San Diego)	Direct & Cumulative	Provide the following lane configurations: • Southbound movement: two dedicated right turn lanes with overlap phasing, one thru lane and one dedicated left turn lane. • Westbound movement: one shared thru / right turn lane, one dedicated thru lane and one dedicated left turn lane. • Northbound movement: one shared thru / right turn lane and one dedicated left turn lane. • Eastbound movement: one shared thru / right turn lane, one dedicated thru lane and two dedicated left turn lanes. The Project should also pay the appropriate TIF amount toward the County TIF Program to mitigate the Project's cumulative impact.
#10. Otay Mesa Road / Vann Centre Boulevard (County of San Diego)	Direct & Cumulative	Signalize the intersection and provide the following lane configurations: • Southbound movement: one dedicated right turn lane with overlap phasing and one dedicated left turn lane. • Westbound movement: one shared thru / right turn lane. • Eastbound movement: one thru lane and one dedicated left turn lane. The Project should also pay the appropriate TIF amount toward the County TIF Program to mitigate the Project's cumulative impact.
#16. Airway Road / Sanyo Avenue (City of San Diego)	Cumulative	The Project will contribute a fairshare towards the planned improvements to this intersection as reported in the <i>Transportation Analysis for the Otay Mesa Community Plan Update</i> , Urban Systems, August 30, 2013.
#17. Airway Road / Paseo de las Americas (County of San Diego)	Cumulative	Payment of the appropriate TIF amount toward the County TIF Program would reduce this cumulative impact to below a level of significance. .
#22. Siempre Viva Road / Paseo de las Americas (City of San Diego)	Cumulative	The Project will contribute a fairshare towards the planned improvements to this intersection as reported in the <i>Transportation Analysis for the Otay Mesa Community Plan Update</i> , Urban Systems, August 30, 2013.

TABLE A
SUMMARY OF SIGNIFICANT IMPACTS & MITIGATION MEASURES

Location	Impact Type	Mitigation Measure
#23. Siempre Viva Road / Enrico Fermi Drive (County of San Diego)	Cumulative	Payment of the appropriate TIF amount toward the County TIF Program would reduce this cumulative impact to below a level of significance.
Street Segments		
Otay Mesa Road: Sanyo Avenue to Vann Centre Boulevard (County of San Diego)	Direct	Widening this segment of Otay Mesa Road between Sanyo Avenue and Vann Centre Boulevard along the Project frontage to 4-lanes would reduce this direct impact to below a level of significance. The Project will also be responsible for making ½ width frontage improvements along Otay Mesa Road between Harvest Road and Vann Centre Boulevard to improve the roadway to 6-lane Prime Arterial standards per the County's Centerline Ordinance.
Otay Mesa Road: Vann Centre Boulevard to Enrico Fermi Drive (County of San Diego)	Direct	This segment of Otay Mesa Road between Vann Centre Boulevard and Enrico Fermi Drive was analyzed under Existing conditions without the addition of SR 11 between SR 905 / SR 125 and Enrico Fermi Drive to the roadway network. SR 11 is currently under construction and expected to open during the fall of 2015, before completion of the East Otay Mesa Specific Plan Amendment Project. Under Year 2020 Cumulative conditions, with the addition of SR 11, a significant impact is not calculated along the segment (2 lanes provide adequate operations). Therefore, the construction of SR 11, which is fully funded, will mitigate the Project's direct impact, and no additional mitigation measures are necessary.
Enrico Fermi Drive: Otay Mesa Road to Airway Road (County of San Diego)	Cumulative	Payment of the appropriate TIF amount toward the County TIF Program would reduce this cumulative impact to below a level of significance.

TABLE OF CONTENTS

SECTION	PAGE
Appendices.....	v
List of Figures.....	vi
List of Tables	vii
1.0 Introduction.....	1
2.0 Project Description	2
2.1 Project Location	2
2.2 Project Description.....	2
2.3 Site Access	2
3.0 Existing Conditions.....	6
3.1 Existing Roadway Network	6
3.2 Existing Traffic Volumes.....	8
4.0 Study Area, Analysis Approach and Methodology.....	11
4.1 Study Area	11
4.2 Study Scenarios.....	12
4.3 Methodology	13
4.3.1 Level of Service	13
4.3.2 Intersections	14
4.3.3 Street Segments.....	14
4.3.4 Freeway Mainline	15
5.0 Significance Criteria	17
5.1 County of San Diego.....	17
5.1.1 Intersections	17
5.1.2 Street Segments.....	18
5.2 City of San Diego Significance Criteria	20
6.0 Analysis of Existing Conditions	22
6.1 Intersection Operations	22
6.2 Daily Street Segment Operations.....	22
6.3 Freeway Mainline Operations.....	22
7.0 Trip Generation/Distribution/Assignment	28
7.1 Trip Distribution and Assignment	29
8.0 Analysis of Existing + Project Conditions	33

8.1	Intersection Operations	33
8.2	Daily Street Segment Operations.....	33
8.3	Freeway Mainline Operations.....	33
9.0	Analysis of Cumulative (Year 2020) with Project Conditions	41
9.1	Cumulative (Year 2020) with Project Traffic Volumes	41
9.2	Cumulative (Year 2020) Scheduled Network Improvement Projects	41
9.3	Year 2020 Cumulative Conditions Analysis.....	42
9.3.1	Intersection Operations	42
9.3.2	Daily Street Segment Operations.....	43
9.3.3	Freeway Mainline Operations.....	43
10.0	Project Access and On-Site Circulation.....	51
10.1	Project Access	51
10.2	On-Site Circulation	51
11.0	Significance of Impacts and Mitigation Measures.....	55
11.1	Direct Impacts	55
11.2	Cumulative Impacts	55
11.3	Mitigation Phasing.....	56

APPENDICES

APPENDIX

- A. Existing Intersection and Street Segment Manual Count Sheets
- B. Buildout East Otay Mesa Traffic Forecast
- C. County of San Diego & City of San Diego Roadway Classification Tables
- D. Existing Synchro Intersection Analysis Worksheets
- E. Existing + Project Synchro Intersection Analysis Worksheets
- F. Cumulative Projects Information
- G. Caltrans Roadway Improvements Fact Sheets
- H. Year 2020 + Project Synchro Intersection Analysis Worksheets
- I. Excerpt from the East Otay Mesa Business Park Specific Plan
- J. Existing + Project + Mitigation Synchro Intersection Analysis Worksheets
- K. Signal Warrant Calculation Sheet

LIST OF FIGURES

SECTION—FIGURE #	PAGE
Figure 2–1	Vicinity Map 3
Figure 2–2	Project Area Map 4
Figure 2–3	Site Plan 5
Figure 3–1	Existing Conditions Diagram..... 9
Figure 3–2	Existing Traffic Volumes..... 10
Figure 7–1	Project Traffic Distribution..... 31
Figure 7–2	Project Traffic Volumes..... 32
Figure 8–1	Existing Year + Project Traffic Volumes 40
Figure 9–1	Cumulative (Year 2020) with Project Traffic Volumes 50
Figure 10–1	Direct Impact Mitigation..... 53
Figure 10–2	Ultimate Project Access Improvements..... 54
Figure 11–1	Direct Impacts Location Map 66
Figure 11–2	Cumulative Impacts Location Map..... 67

LIST OF TABLES

SECTION—TABLE #	PAGE
Table A Summary of Significant Impacts & Mitigation Measures	ii
Table 4-1 Intersection Level of Service Descriptions.....	14
Table 4-2 Caltrans District 11 Freeway Segment Level Of Service Definitions	16
Table 5-1 Measures of Significant Project Impacts to Congestion on Intersections Allowable Increases on Congested Intersections	17
Table 5-2 Measures of Significant Project Impacts to Congestion on Mobility Element Road Segments Allowable Increases on Congested Road Segments	19
Table 5-3 City Of San Diego Traffic Impact Significant Thresholds	21
Table 6-1 Existing Intersection Operations.....	23
Table 6-2 Existing Segment Operations.....	26
Table 6-3 Existing Freeway Segment Operations	27
Table 7-1 Project Trip Generation	30
Table 8-1 Existing + Project Intersection Operations.....	34
Table 8-2 Existing + Project Segment Operations.....	37
Table 8-3 Existing + Project Freeway Mainline Operations	39
Table 9-1 Year 2020 Cumulative Intersection Operations.....	44
Table 9-2 Year 2020 Cumulative Segment Operations	47
Table 9-3 Year 2020 Cumulative Freeway Mainline Operations	49
Table 10-1 On-Site Circulation Element Roadways	52
Table 11-1 Summary of Significant Impacts & Mitigation Measures	57
Table 11-2 Intersection Post-Mitigation Analysis	62
Table 11-3 Segment Post-Mitigation Analysis	64
Table 11-4 Project Mitigation Phasing Summary	65

TRAFFIC IMPACT ANALYSIS
EAST OTAY MESA SPECIFIC PLAN AMENDMENT
County of San Diego, California
December 8, 2016

1.0 INTRODUCTION

The following traffic study has been prepared to determine and evaluate the traffic impacts on the local circulation system due to the proposed East Otay Mesa Specific Plan Amendment development (“Project”) in the County of San Diego. This traffic study analyzes intersections, street segments, and mainline freeway segments in the Project vicinity to determine potential impacts related to the traffic generated by the proposed Project.

Included in this traffic study are the following:

- Project Description
- Existing Conditions Description
- Study Area, Analysis Approach & Methodology
- Significance Criteria
- Existing Conditions Analysis
- Trip Generation / Distribution / Assignment
- Existing + Project Conditions Analysis
- Year 2020 Scheduled Roadway Network Improvements
- Year 2020 with Project Cumulative Analysis
- Access & On-Site Circulation Discussion
- Significance of Impacts & Mitigation Measures

2.0 PROJECT DESCRIPTION

2.1 Project Location

The proposed development will be located on an approximately 224 acre vacant parcel generally located west of Vann Centre Boulevard, north of Otay Mesa Road, south of Zinser Road and east of SR 125 in the Otay Planning Community of the County of San Diego. The property borders the city of San Diego to the north and east.

Figure 2-1 shows the Project's Vicinity Map and **Figure 2-2** shows a more detailed Project Area Map.

2.2 Project Description

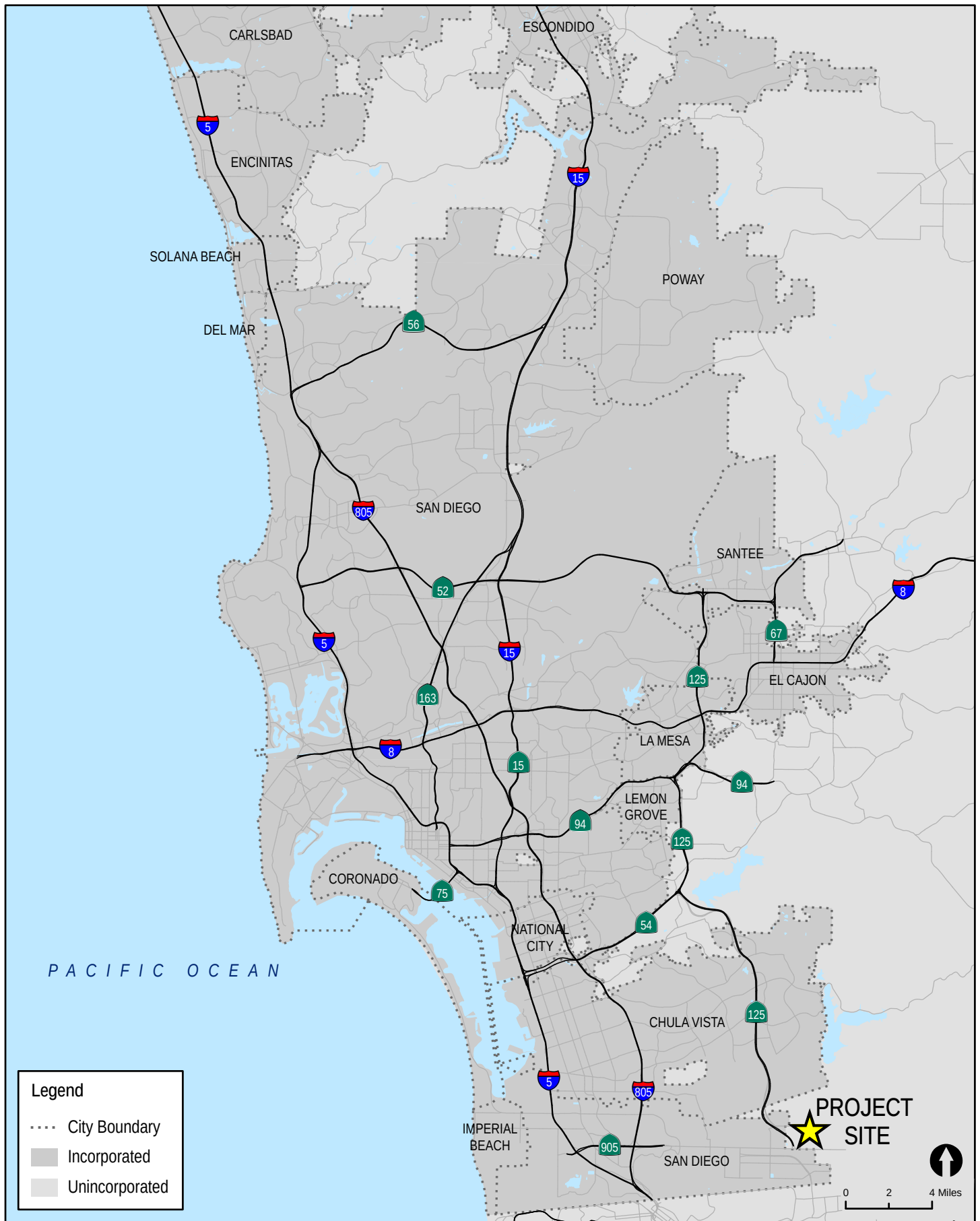
The Project proposes up to 3,158 residential dwelling units, 47.7 acres of Technology Park land uses, a 6.8 acre Neighborhood Shopping Center and 1.0 acre of Specialty Retail land uses within five distinct planning areas (areas A-E for the purposes of the Project).

Currently, the East Otay Mesa Specific Plan does not allow for residential uses (other than very low density on land generally unsuitable for intensive development). The Project's associated amendment to the East Otay Mesa Specific Plan would establish a new Mixed-Use Village core area in order to allow for the establishment of mixed-use within the community plan area. The new Mixed-Use Land Use Designation would allow for a mix of residential, employment, and retail uses. In addition a Technology Business Park is proposed.

2.3 Site Access

The Project will be primarily served by three access points at Harvest Road, Sanyo Avenue and Vann Centre Boulevard, north of Otay Mesa Road.

Figure 2-3 shows the Project's conceptual site plan.



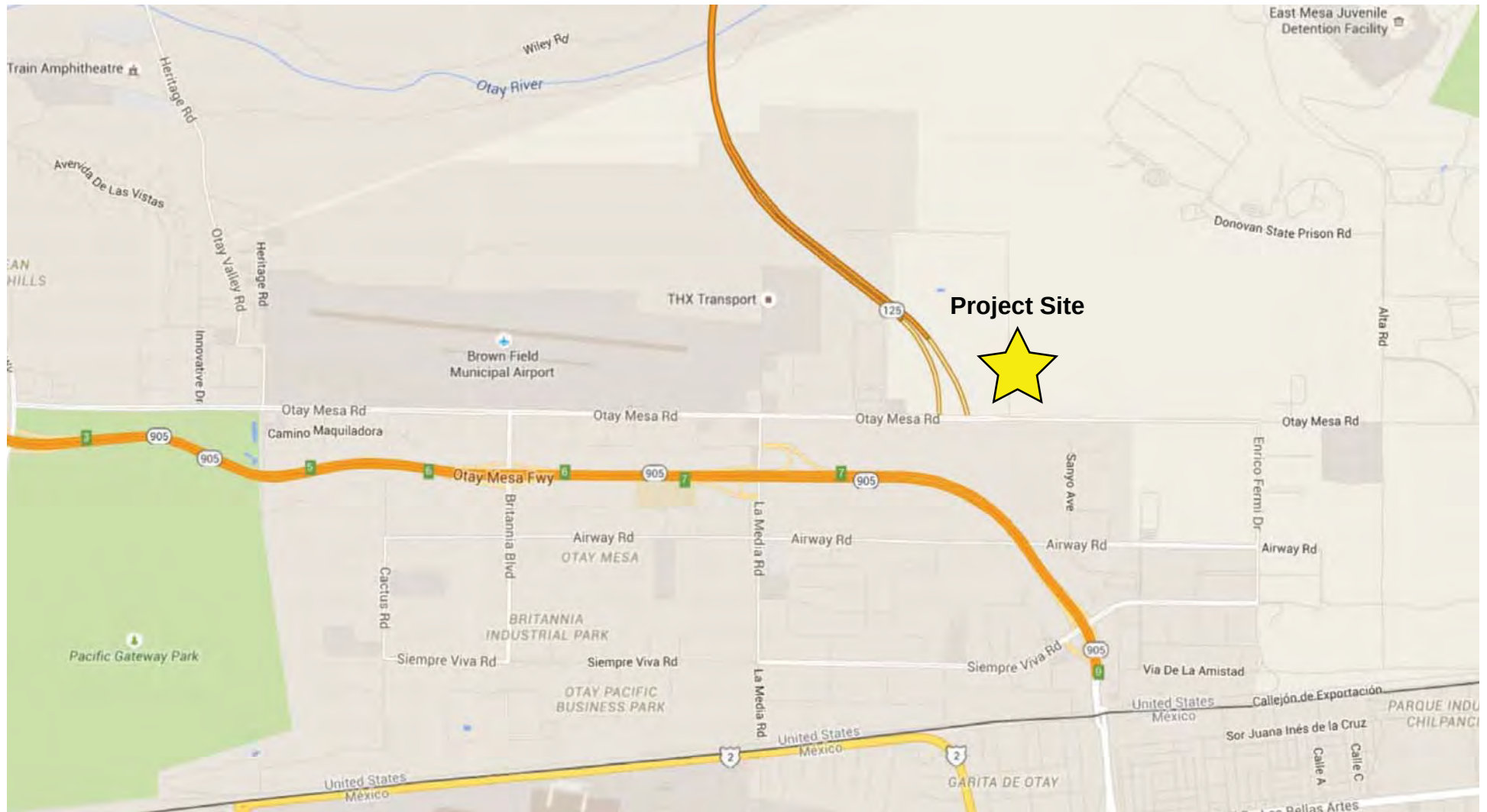


Figure 2-2

Project Area Map

EAST OTAY MESA



3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed development requires an understanding of the existing transportation system in the Project study area. Existing transportation conditions in the study area include roadway geometry, traffic control, and peak period/daily traffic flow. The principal roadways in the Project study area are described briefly below. **Figure 3-1** depicts the Existing conditions diagram.

3.1 Existing Roadway Network

The following is a description of the surrounding roadway network:

State Route 905 (SR 905) is a 6-lane freeway, opened in July 2012, that provides a direct east-west connection from I-805 to the Otay Mesa Port of Entry. The posted speed limit is 55mph.

The State Route 905 (SR-905) is part of an ongoing effort to construct a transportation facility from Interstate 805 to the Otay Mesa Port of Entry (POE) at the US - Mexico Border to provide for more efficient transpiration of people, goods, and services within the Otay Mesa region of San Diego. The corridor is being built in multiple phases with Phases 1A and 1B, the mainlines of the freeway, already constructed and open to traffic. Phase 2 improvements to the I-805 / SR 905 interchange have also been completed. Phase 3A will construct the northbound connectors between SR 905 and SR 125. Funding from the Trade Corridor Improvement Fund (TCIF) has been allocated for the construction of Phase 3A. Construction of the freeway-to-freeway northbound connectors is expected to begin in 2015. Based on the most current information available from Caltrans, funding for the subsequent Phase 3B, which will construct the southbound connectors between SR 905 and SR 125, and Phase 4, which will construct an interchange at Heritage Road, has not yet been secured.

Otay Mesa Road falls under the jurisdiction of the City of San Diego west of Piper Ranch Road and under the jurisdiction of the County of San Diego east of Piper Ranch Road. Within the study area, Otay Mesa Road west of Piper Ranch Road is classified as a 6-lane Prime Arterial with Class II bike lanes on the City's *Otay Mesa Community Plan Mobility Element*. On the County's General Plan *Otay Mobility Element*, Otay Mesa Road is classified as a Prime Arterial with Class II bike lanes between Piper Ranch Road and Enrico Fermi Drive, and as a Major Road with Class II bike lanes east of Enrico Fermi Drive.

Otay Mesa Road is currently constructed as a 6-lane Prime Arterial between west of Heritage Road and La Media Road, as a 5-lane Major Road between La Media Road and Piper Ranch Road, as a 6-lane Prime Arterial between Piper Ranch Road and SR 125, as a 5-lane Major Road between SR 125 and Harvest Road, as a 4-lane Major Road between Harvest Road and Sanyo Avenue and as a 2-lane Collector east of Sanyo Avenue. Curbside parking is generally prohibited and bike lanes are provided east of SR 125.

Airway Road primarily falls under the jurisdiction of the City of San Diego. Airway Road is classified as a 4-lane Major Road with both a Class I bike path and Class II bike lanes from Sanyo

Avenue to Paseo De Las Americas on the City's *Otay Mesa Community Plan Mobility Element*. It is currently constructed as a 4-lane Major Road. Curbside parking is prohibited and bike lanes are not provided. The posted speed limit is 35 mph.

Siempre Viva Road primarily falls under the jurisdiction of the City of San Diego. Siempre Viva Road is classified as a 6-lane Prime Arterial with Class II bike lanes from west of the SR 905 to Enrico Fermi Drive on the City's *Otay Mesa Community Plan Mobility Element*. It is currently constructed as a 6-lane Prime Arterial. Curbside parking is generally prohibited and bike lanes are provided east of La Media Road.

Britannia Boulevard falls under the jurisdiction of the City of San Diego. Britannia Boulevard is classified as a 6-lane Prime Arterial with Class II bike lanes from Otay Mesa Road to SR 905 on the City's *Otay Mesa Community Plan Mobility Element*. Britannia Boulevard is currently constructed as a 6-lane Prime Arterial between Otay Mesa Road and SR 905. Curbside parking is prohibited and bike lanes are not provided.

La Media Road falls under the jurisdiction of the City of San Diego. La Media Road is classified as a 6-lane Prime Arterial with Class II bike lanes from Otay Mesa Road to SR 905 on the City's *Otay Mesa Community Plan Mobility Element*. La Media Road is currently constructed as a 5-lane Major Road between Otay Mesa Road and SR 905. Curbside parking is prohibited and bike lanes are not provided. The posted speed limit is 30 mph.

Harvest Road falls under the jurisdiction of the City of San Diego south of Otay Mesa Road and under the jurisdiction of the County of San Diego north of Otay Mesa Road. Harvest Road north of Otay Mesa Road is unclassified on the County's General Plan *Otay Mobility Element*, but is classified as a 4-lane Road on the *East Otay Mesa Specific Plan 2015*. Harvest Road north of Otay Road is currently constructed as a 2-lane undivided roadway. Harvest Road north of Otay Mesa Road is proposed to be improved by the Project and will serve as one of the Project's main access points.

Sanyo Avenue falls under the jurisdiction of the City of San Diego south of Otay Mesa Road. South of Otay Mesa Road, Sanyo Avenue is classified as a 4-lane Collector with Class II bike lanes on the City's *Otay Mesa Community Plan Mobility Element*. It is currently constructed as a 4-lane Collector. Parking is prohibited and bike lanes are not provided. The posted speed limit is 35 mph. Sanyo Avenue north of Otay Mesa Road is proposed to be constructed by the Project and will serve as one of the Project's main access points.

Enrico Fermi Drive falls under the jurisdiction of the County of San Diego. It is classified as a 4-lane Major Road with Class II bike lanes on the County's General Plan *Otay Mobility Element*. Enrico Fermi Drive is currently constructed as a 2-lane Collector with a reduced shoulder between Otay Mesa Road and Airway Road, and as a 4-lane Major Road south of Airway Road.

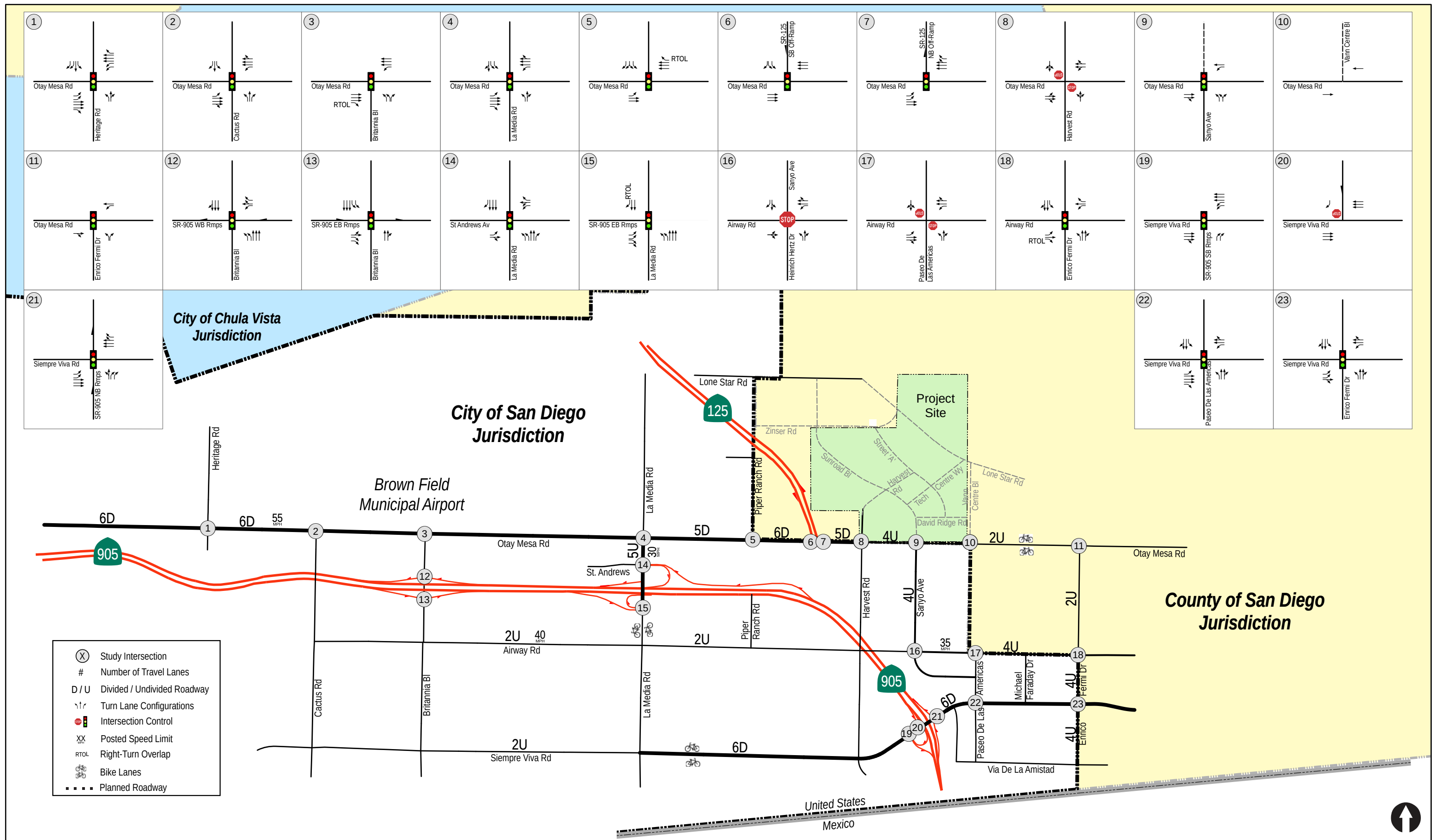
3.2 Existing Traffic Volumes

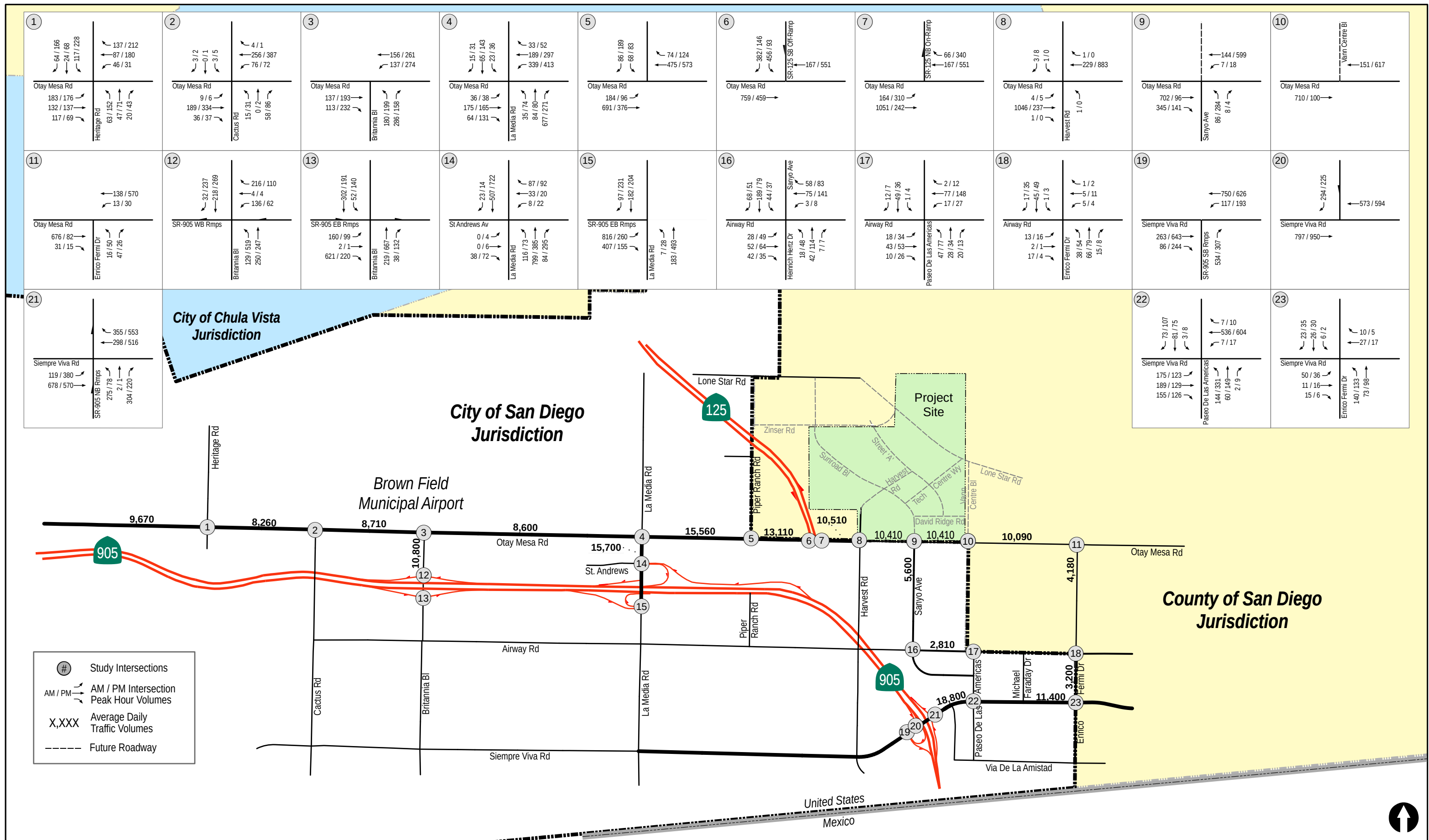
Existing weekday AM and PM peak hour (7:00-9:00 AM and 4:00-6:00 PM) turning movement counts at the study intersections and 24-hour average daily traffic (ADT) volumes along the study area street segment were conducted on Thursday, May 14, 2015 while area schools in the area were in session.

The percent of heavy vehicles in the area was verified based on a number of heavy vehicle classification counts conducted in March 2016. The counts showed an average heavy vehicle percentage of approximately 10%.

Freeway volumes were obtained from the Performance Measurement System (PeMS). The PeMS software distributes real-time peak hour and average daily traffic volumes and provides a graphical representation of volumes at each PeMS station location. Peak hour freeway volumes were obtained from data collected during May 2015.

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





4.0 STUDY AREA, ANALYSIS APPROACH AND METHODOLOGY

4.1 Study Area

The study area was determined in accordance with the County of San Diego and City of San Diego's published traffic impact analysis requirement guidelines. The study area includes the following twenty three (23) intersections, eighteen (18) street segments, and three (3) freeway mainline segments. These locations were chosen since they will carry the majority of Project traffic.

Intersections

1. Otay Mesa Road / Heritage Road
2. Otay Mesa Road / Cactus Road
3. Otay Mesa Road / Britannia Boulevard
4. Otay Mesa Road / La Media Road
5. Otay Mesa Road / Piper Ranch Road
6. Otay Mesa Road / SR 125 SB Off-Ramp
7. Otay Mesa Road / SR 125 NB On-Ramp
8. Otay Mesa Road / Harvest Road
9. Otay Mesa Road / Sanyo Avenue
10. Otay Mesa Road / Vann Center Boulevard
11. Otay Mesa Road / Enrico Fermi Drive
12. Britannia Boulevard / SR 905WB Ramps
13. Britannia Boulevard / SR 905 EB Ramps
14. La Media Road / SR 905 WB Ramps / St. Andrews Avenue
15. La Media Road / SR 905 EB Ramps
16. Airway Road / Sanyo Avenue
17. Airway Road / Paseo de las Americas
18. Airway Road / Enrico Fermi Drive
19. Siempre Viva Road EB / SR 905 SB Ramps
20. Siempre Viva Road WB / SR 905 SB Off-Ramp
21. Siempre Viva Road / SR 905 NB Ramps
22. Siempre Viva Road / Paseo de las Americas
23. Siempre Viva Road / Enrico Fermi Drive

Street Segments

Otay Mesa Road:

- West of Heritage Road
- Heritage Road to Cactus Road
- Cactus Road to Britannia Boulevard
- Britannia Boulevard to La Media Road

- La Media Road to Piper Ranch Road
- Piper Ranch Road to SR 125
- SR 125 to Harvest Road
- Harvest Road to Sanyo Avenue
- Sanyo Avenue to Vann Centre Drive
- Vann Centre Drive to Enrico Fermi Drive

Britannia Boulevard:

- Otay Mesa Road to SR 905

Sanyo Avenue:

- Otay Mesa Road to Airway Road

Enrico Fermi Drive:

- Otay Mesa Road to Airway Road
- Airway Road to Siempre Viva Road

Airway Road:

- Sanyo Avenue to Paseo de las Americas

La Media Road:

- Otay Mesa Road to SR 905 WB Ramps / St. Andrews Avenue

Siempre Viva Road:

- SR 905 to Paseo de las Americas
- Paseo de las Americas to Enrico Fermi Drive

Freeway Mainline Segments

SR 905:

- Heritage Road to Britannia Boulevard
- Britannia Boulevard to La Media Road
- La Media Road to Siempre Viva Road

4.2 Study Scenarios

A total of three (3) scenarios were analyzed in this study as summarized below:

- **Existing Conditions** – utilized to establish the Existing baseline traffic operations within the study area;
- **Existing + Project Conditions** – represents Existing traffic conditions with addition of the traffic from buildout of the proposed Project.
- **Cumulative (Year 2020) with Project Conditions** – represents cumulative traffic conditions, including existing baseline traffic, traffic from anticipated cumulative projects, and traffic from buildout of the proposed Project. Forthcoming roadway

network improvements were assumed under this scenario, specifically Phase 3A of the SR 905 project and Segment 1 of the SR 11 project, as discussed further in *Section 9.2* of this study.

It should be noted that analysis of Long-Term conditions was considered for inclusion in this study. However, in coordination with County staff, this analysis was ultimately deemed unnecessary for the reasons discussed below. A traffic study for a previous processing of the Project, dated December 2, 2011 was prepared and ultimately approved. Some changes to the Project have been made since that time, necessitating the preparation of this traffic study. However the amount of traffic generated by the most recent version of the Project (analyzed in this study) is very similar to what was analyzed in the approved December 2011 study. The Project's peak hour traffic has not increased. The currently proposed Project is calculated to generate 3,558 *additional* ADT as compared to the previously approved study, however this additional ADT does not trigger the need for analysis of Long-Term conditions since the peak hour volumes have not increased.

The proposed Project does not require the need to upgrade the Mobility Element or Specific Plan roadway classifications since the peak hour volumes have not increased as compared to the approved project and there is sufficient capacity in the planned roadway system. A copy of the forecasted buildout volumes from the Otay Mesa Community Plan Update and the County's General Plan Update model are included in **Appendix B**.

4.3 Methodology

4.3.1 Level of Service

Level of Service (LOS) is a professional industry standard by which the operating conditions of a given street segment or intersection is measured. Level of Service is defined on a scale of A to F; where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating speeds. **Table 4-1** shows the delay and ADT ranges that are equivalent to each Level of Service. In general, the region-wide goal for an acceptable Level of Service on all street segments and intersections is "D".

TABLE 4-1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Description
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

4.3.2 Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM)*, with the assistance of the *Synchro* (version 8 computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS).

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 19 of the *2010 Highway Capacity Manual (HCM)*, *Synchro* version 8 was utilized to analyze the AM and PM peak hour conditions of the intersections in the project vicinity.

4.3.3 Street Segments

Even though the proposed project lies within the County of San Diego, the street segments in the vicinity of the proposed project are located in both the jurisdictions of the County and City of San Diego. Therefore, for the purpose of this report, the daily traffic volumes of the street segments in the vicinity of the Project were compared to the County or City of San Diego Level of Service classification thresholds, depending on whether the street segment is located within the County's or City's jurisdiction.

A copy of the County of San Diego & City of San Diego Roadway Classification tables can be found in **Appendix C**.

4.3.4 **Freeway Mainline**

Freeway segments were analyzed during the AM and PM peak hours based on the methodologies developed by Caltrans District 11. Freeway segment LOS is based on the volume to capacity ratio on the freeway.

The analysis of freeway segment LOS is based on the procedures developed by Caltrans District 11 as described in the Highway Capacity Manual. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). The procedure for calculating freeway LOS involves the estimation of volume to capacity (V/C) ratio using the following equation:

$$V/C = \text{Peak Hour Volume} / \text{Capacity}$$

The resulting V/C is then compared to accepted ranges of V/C values corresponding to the various Levels of Service for each facility classification, as shown in **Table 4–2**. The corresponding Level of Service represents an approximation of existing or anticipated future freeway operating condition in the peak direction of travel during the peak hour.

TABLE 4-2
CALTRANS DISTRICT 11
FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
A	<0.41	None	Free flow
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for freeways and expressways			
F(0)	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
F(1)	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
F(2)	1.36-1.45	Very Severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F(3)	>1.46	Extremely Severe 3+ hours of delay	Gridlock

5.0 SIGNIFICANCE CRITERIA

The following criteria was utilized to evaluate potential significant impacts, based on the County's document, *Guidelines for Determining Significance*, August 24, 2011, for study area facilities within the County of San Diego. For study area facilities located in the City of San Diego, the City of San Diego's guidelines were used.

5.1 County of San Diego

5.1.1 Intersections

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections. **Table 5–1** summarizes significant project impacts for signalized and unsignalized intersections.

TABLE 5–1
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON INTERSECTIONS
ALLOWABLE INCREASES ON CONGESTED INTERSECTIONS

Level of service	Signalized	Unsignalized
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement
LOS F	Either a Delay of 1 second, or 5 peak hour trips or less on a critical movement	5 or less peak hour trips on a critical movement

General Notes:

1. A critical movement is an intersection movement (right-turn, left-turn, through-movement) that experiences excessive queues, which typically operate at LOS F.
2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay **and** the number of trips on a critical movement, exceedance of either criteria result in a significant impact.

Signalized Intersections—Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or LOS traffic impact on a signalized intersection:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in *Table 5–1*.
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance, or other factors, the project would significantly impact the operations of the intersection.

Unsignalized Intersections—The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or

turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. Significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic impact on an unsignalized intersection as listed in *Table 5–1* and described as text below:

- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance, or other factors, the project would significantly impact the operations of the intersection.

Using County of San Diego guidelines, impacts calculated in the Existing + Project scenario are considered “direct” and impacts calculated in the Existing + Project + Cumulative Projects time frame are considered “cumulative”.

5.1.2 **Street Segments**

Pursuant to the County’s *General Plan Mobility Element*, new development must provide improvements or other measures to mitigate traffic impacts to avoid:

- a. Reduction in LOS below “C” for on-site Mobility Element roads;
- b. Reduction in LOS below “D” for off-site and on-site abutting *Mobility Element* roads; and
- c. "Significantly impacting congestion" on roads that operate at LOS “E” or “F”. If impacts cannot be mitigated, the project cannot be approved unless a statement of overriding findings is made pursuant to the State CEQA Guidelines. The *Mobility Element*, however, does not include specific guidelines for determining the amount of additional traffic that would “significantly impact congestion” on such roads.

The County has created the following guidelines to evaluate likely traffic impacts of a proposed project for road segments and intersections serving that project site, for purposes of determining whether the development would “significantly impact congestion” on the referenced LOS E and F roads. The guidelines are summarized in **Table 5–2**. The thresholds in *Table 5–2* are based upon

average operating conditions on County roadways. It should be noted that these thresholds only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

TABLE 5-2
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON
MOBILITY ELEMENT ROAD SEGMENTS
ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

General Notes:

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

On-site Mobility Element Roads—The *General Plan Mobility Element Policy 2.1* (ME Policy 2.1) states that “new development shall provide needed roadway expansion and improvements on-site to meet demand created by the development, and to maintain LOS C on Mobility Element Roads during peak traffic hours”. Pursuant to this policy, a significant traffic impact would result if:

- The additional or redistributed ADT generated by the proposed land development project will cause on-site *Mobility Element Roads* to operate below LOS C during peak traffic hours except within the Otay Ranch and Harmony Grove Village plans as specified in the previously adopted *General Plan's* PFE, Implementation Measure 1.1.2.

Off-site Circulation Element Roads— ME Policy 2.1 also addresses off-site *Mobility Element roads*. It states that “new development shall provide off-site improvements designed to contribute to the overall achievement of LOS D on *Mobility Element Roads*.” ME Policy 2.1 addressed projects that would significantly impact congestion on roads operating at LOS E or F. It states, “new development that would significantly impact congestion on roads operating at LOS E or F, either currently or as a result of the project, will be denied unless improvements are scheduled to attain a LOS to D or better or appropriate mitigation is provided.” In circumstances in which appropriate mitigation is not feasible, the project can only be approved if “a specific statement of overriding findings is made pursuant to” the State CEQA Guidelines. The following significance guidelines define a method for evaluating whether or not increased traffic volumes generated or redistributed from a proposed project will “significantly impact congestion” on County roads, operating at LOS E or F, either currently or as a result of the project.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or LOS impact on a road segment:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Mobility Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Mobility Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in *Table 5–2*, or

The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.

5.2 City of San Diego Significance Criteria

According to the City of San Diego’s *Significance Determination Thresholds* dated January 2011, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. For projects deemed complete on or after January 1, 2007, the City defined thresholds are shown in *Table 5–3*.

The impact is designated either a “direct” or “cumulative” impact. According to the City’s *Significance Determination Thresholds*,

“*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (opening day).”

“*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative).”

It is possible that a project’s opening day (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact.”

For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions.”

If the project exceeds the thresholds in *Table 5–3*, then the project is considered to have a significant “direct” or “cumulative” project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–3* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

TABLE 5-3
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project ^b	Allowable Increase Due to Project Impacts ^a					
	Freeways		Roadway Segments		Intersections	Ramp Metering ^c
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	1.0	2.0	2.0
F	0.005	0.5	0.01	0.5	1.0	1.0

Footnotes:

- a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS.
- b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.
- c. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections or minutes for ramp meters
2. LOS = Level of Service
3. V/C = Volume to Capacity ratio
4. Speed = Arterial speed measured in miles per hour

6.0 ANALYSIS OF EXISTING CONDITIONS

The following section summarizes the Existing analysis of the study area locations.

6.1 Intersection Operations

Table 6–1 summarizes the intersection operations under Existing conditions. As seen in *Table 6–1*, the study intersections are calculated to currently operate at acceptable levels of service with the exception of the following:

4. Otay Mesa Road / La Media Road (LOS F during the AM peak hour and LOS E during the PM peak hour)
8. Otay Mesa Road / Harvest Road (LOS E during the AM peak hour)

Appendix D contains the Existing intersection analysis worksheets.

6.2 Daily Street Segment Operations

Table 6–2 summarizes the roadway segment operations under Existing conditions. As seen in *Table 6–2*, the study area segments are calculated to currently operate at acceptable levels of service.

6.3 Freeway Mainline Operations

Table 6–3 summarizes the freeway mainline operations along SR 905 under Existing conditions. As seen in *Table 6–3*, the study area freeway mainline segments are calculated to currently operate at acceptable levels of service during the AM and PM peak hours.

TABLE 6-1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Existing	
				Delay ^a	LOS ^b
1. Otay Mesa Road / Heritage Road	City	Signal	AM PM	37.9 35.7	D D
2. Otay Mesa Road / Cactus Road	City	Signal	AM PM	17.8 16.1	B B
3. Otay Mesa Road / Britannia Boulevard	City	Signal	AM PM	28.5 27.9	C C
4. Otay Mesa Road / La Media Road	City	Signal	AM PM	178.8 61.4	F E
5. Otay Mesa Road / Piper Ranch Road	County	Signal	AM PM	14.7 19.7	B B
6. Otay Mesa Road / SR 125 SB Off-Ramp	County	Signal	AM PM	18.4 8.4	B A
7. Otay Mesa Road / SR 125 NB On-Ramp	County	Signal	AM PM	1.9 4.5	A A
8. Otay Mesa Road / Harvest Road	County	TWSC ^c	AM PM	48.0 11.8	E B
9. Otay Mesa Road / Sanyo Avenue	County	Signal	AM PM	12.2 17.6	B B
10. Otay Mesa Road / Vann Centre Boulevard	County	<i>DNE^f</i>	AM PM	<i>DNE</i> <i>DNE</i>	- -
11. Otay Mesa Road / Enrico Fermi Drive	County	Signal	AM PM	11.0 8.8	B A

TABLE 6-1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Existing	
				Delay ^a	LOS ^b
12. SR 905 WB Ramps / Britannia Boulevard	City	Signal	AM	22.8	C
			PM	22.8	C
13. SR 905 EB Ramps / Britannia Boulevard	City	Signal	AM	23.1	C
			PM	18.4	B
14. SR 905 WB Ramps / La Media Road	City	Signal	AM	13.4	B
			PM	12.3	B
15. SR 905 EB Ramps / La Media Road	City	Signal	AM	28.7	C
			PM	17.0	B
16. Airway Road / Sanyo Avenue	City	AWSC ^d	AM	10.4	B
			PM	11.1	B
17. Airway Road / Paseo de las Americas	County	TWSC	AM	11.2	B
			PM	13.3	B
18. Airway Road / Enrico Fermi Drive	County	Signal	AM	12.1	B
			PM	12.8	B
19. Siempre Viva Road EB / SR 905 SB Off-Ramp	City	Signal	AM	21.0	C
			PM	16.2	B
20. Siempre Viva Road WB / SR 905 SB Off-Ramp	City	OWSC ^e	AM	19.8	C
			PM	15.7	C
21. Siempre Viva Road / SR 905 NB Ramps	City	Signal	AM	22.4	C
			PM	20.3	C
22. Siempre Viva Road / Paseo de las Americas	City	Signal	AM	25.6	C
			PM	35.2	D

TABLE 6-1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Existing	
				Delay ^a	LOS ^b
23. Siempre Viva Road / Enrico Fermi Drive	County	Signal	AM	49.1	D
			PM	50.4	D

Footnotes:

- a. Average intersection delay per vehicle in seconds
- b. Level of Service
- c. TWSC: Two-Way-Stop-Controlled intersection. Minor Street left-turn delay and LOS reported.
- d. AWSC: All-Way-Stop-Controlled intersection.
- e. OWSC: One-Way-Stop-Controlled intersection. Minor Street left-turn delay and LOS reported.
- f. Intersection does not exist under Existing conditions.

General Notes:

Bold indicates LOS E or F.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 6-2
EXISTING SEGMENT OPERATIONS

Roadway Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	ADT ^b	V/C ^c	LOS ^d
Otay Mesa Road						
West of Heritage Rd	City	6-Lane Prime	60,000	9,670	0.161	A
Heritage Rd to Cactus Rd	City	6-Lane Prime	60,000	8,260	0.138	A
Cactus Rd to Britannia Blvd	City	6-Lane Prime	60,000	8,710	0.145	A
Britannia Blvd to La Media Rd	City	6-Lane Prime	60,000	8,600	0.143	A
La Media Rd to Piper Ranch Rd	City	5-Lane Major	45,000	15,560	0.346	A
Piper Ranch Rd to SR 125 Ramps	County	6-Lane Prime	57,000	13,110	0.230	A
SR 125 Ramps to Harvest Rd	County	5-Lane Major	47,000	10,510	0.224	A
Harvest Rd to Sanyo Ave	County	4-Lane Major	37,000	10,410	0.281	A
Sanyo Ave to Vann Centre Blvd	County	Local Collector	16,200	10,410	0.643	D
Vann Centre Blvd to Enrico Fermi Dr	County	Local Collector	16,200	10,090	0.623	D
Britannia Boulevard						
Otay Mesa Rd to SR 905 Ramps	City	6-Lane Prime	60,000	10,800	0.180	A
Sanyo Avenue						
Otay Mesa Rd to Airway Rd	City	4-Lane Collector	30,000	5,600	0.187	A
Enrico Fermi Drive						
Otay Mesa Rd to Airway Rd	County	2-Lane Collector	9,700	4,180	0.431	A
Airway Rd to Siempre Viva Rd	County	4-Lane Major	37,000	3,200	0.086	A
Airway Road						
Sanyo Ave to Paseo de las Americas	City	4-Lane Major	40,000	2,810	0.070	A
La Media Road						
Otay Mesa Rd to SR 905 Ramps	City	5-Lane Major	45,000	15,700	0.349	A
Siempre Viva Road						
SR 905 Ramps to Paseo de las Americas	City	6-Lane Prime	60,000	18,800	0.313	A
Paseo de las Americas to Enrico Fermi Dr	City	6-Lane Prime	60,000	11,400	0.190	A

Footnotes:

- a. Capacity from City / County LOS threshold tables
- b. Average Daily Traffic
- c. Volume / Capacity
- d. Level of Service

TABLE 6-3
EXISTING FREEWAY SEGMENT OPERATIONS

Freeway and Segment	Direction, Number of Lanes ^a & Capacity ^b			ADT ^c	Peak Hour Volume		V/C ^d		LOS ^e	
					AM	PM	AM	PM	AM	PM
SR 905										
Heritage Road to Britannia Blvd	WB Mainline	3M	6,000	72,100	2,160	3,690	0.360	0.615	B	B
	EB Mainline	3M	6,000	72,100	2,080	1,510	0.347	0.252	B	B
Britannia Blvd to La Media Rd	WB Mainline	3M	6,000	58,800	1,700	2,340	0.283	0.390	B	B
	EB Mainline	3M + 1A	7,200	58,800	1,970	1,730	0.274	0.240	B	B
La Media Rd to Siempre Viva Rd	NB Mainline	3M	6,000	60,600	1,610	1,940	0.268	0.323	B	B
	SB Mainline	3M	6,000	60,600	1,670	1,720	0.278	0.287	B	B

Footnotes:

- a. "M" = Mainline, "A" = Auxiliary Lane
- b. Capacity = 2,000 vehicles per hour per lane (mainline), 1,200 vehicles per hour per lane (auxiliary).
- c. Existing ADT Volumes were obtained directly from the freeway Performance Measurement System (PeMS) website.
- d. Volume to Capacity ratio.
- e. Level of Service

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

As described in *Section 2* of this study, the Project proposes to develop up to 3,158 residential dwelling units, 47.7 acres of Technology Park land uses, a 6.8 acre Neighborhood Shopping Center and 1.0 acre of Specialty Retail land uses. Trip generation rates for the Project were obtained from the *(Not So) Brief Guide of Traffic Generators for the San Diego Region* published by the San Diego Association of Governments (SANDAG) in April 2002.

The trip generation for all of the residential land uses was conservatively calculated using SANDAG's "Condominium" rate of 8 ADT / DU despite the fact that the a portion of the 3,158 proposed dwelling units will likely serve as apartments (SANDAG rate of 6 ADT / DU).

The trip generation for the proposed 47.7 acres of technology park land uses was calculated using SANDAG's industrial trip rate of 120 ADT / acre. This is consistent with the methodology used in the previously approved December 2011 study prepared for a previous processing of the Project.

The trip generation for the proposed 6.8 acre Neighborhood Shopping Center within the Mixed-Use Retail Emphasis area of the Project was calculated using SANDAG's "Neighborhood Shopping Center" rate of 1,200 ADT / acre. This is the highest SANDAG provided retail shopping center trip rate and is considered conservative. This component of the Project is expected to be widely used by the surrounding residential and employment uses both within the proposed Project and by surrounding developments. SANDAG indicates pass-by reductions of 22% for retail based shopping centers on a daily basis and 40% during the PM peak hour. In order to provide a conservative analysis, a 20% pass-by rate was applied to the ADT and AM and PM peak hour trip rates for this specific land use. Per SANDAG, pass-by reductions can be taken to account for trips that are already on the street network whether the Project is built or not.

The trip generation rate for the proposed Specialty Retail land uses within the Mixed-Use Residential Emphasis area of the Project was calculated using SANDAG's "Specialty Retail / Strip Commercial" rate of 400 ADT / acre.

Based on the trip generation rates summarized above, the Project was calculated to generate 37,916 ADT with 3,095 AM peak hour trips and 3,860 PM peak hour trips. Due to the nature of the Project, which proposes a mixed-use community with a variety of complimentary land uses, a 10% mixed-use credit was applied to the aforementioned volumes, as supported by footnote "T, [2]" of the SANDAG trip generation table.

Table 7-1 shows the trip generation for the total Project. As shown in *Table 7-1*, the total Project is calculated to generate 34,124 ADT with a total of 2,785 trips during the AM peak hour (1,090 inbound/1,695 outbound trips) and 3,474 total trips during PM peak hour (2,000 inbound/ 1,474 outbound trips).

7.1 Trip Distribution and Assignment

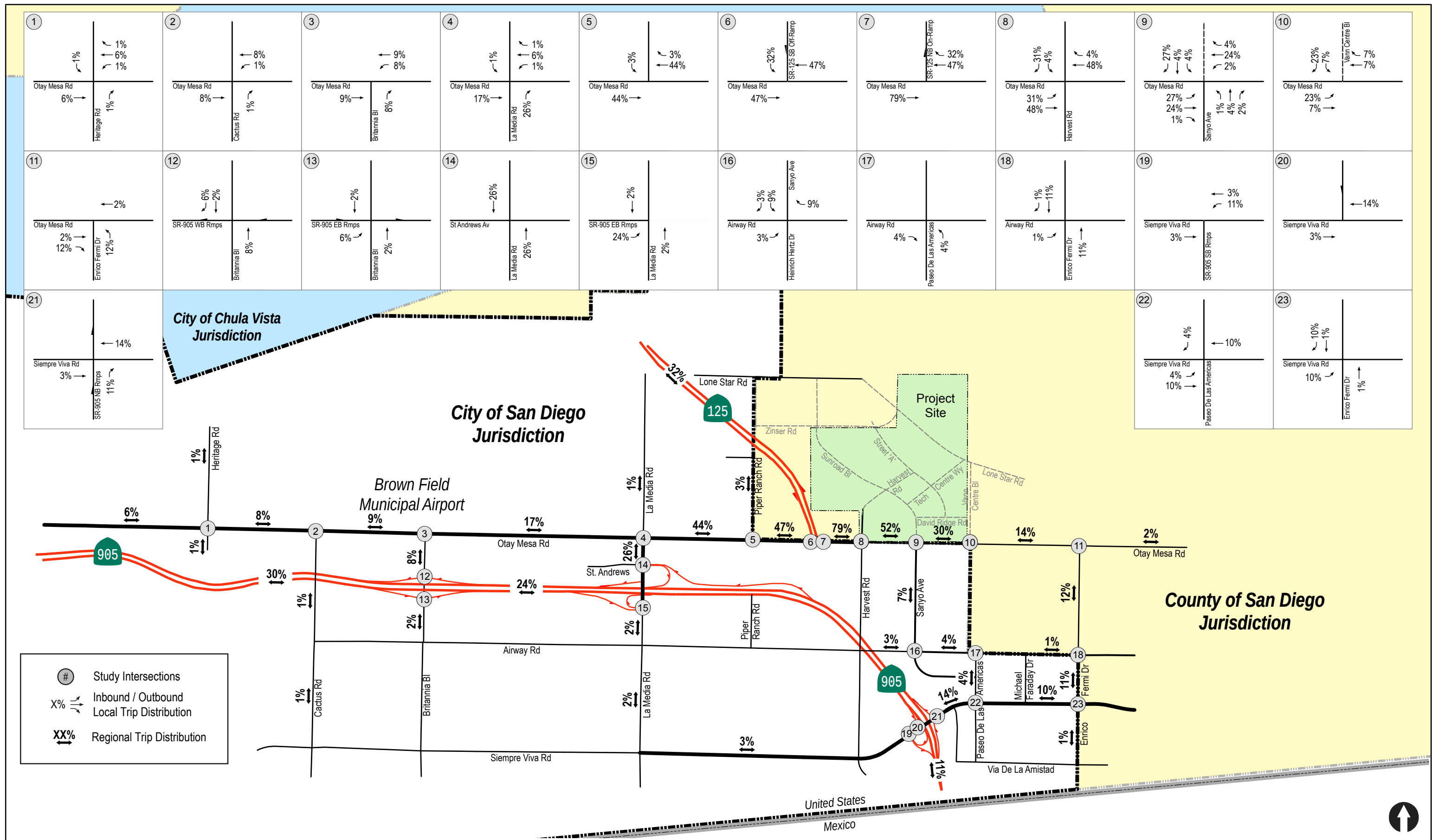
The Project generated traffic was distributed to the street system based on a SANDAG Select Zone Assignment Model prepared for the Project, the locations of the proposed access points, and traffic patterns observed from the existing traffic counts.

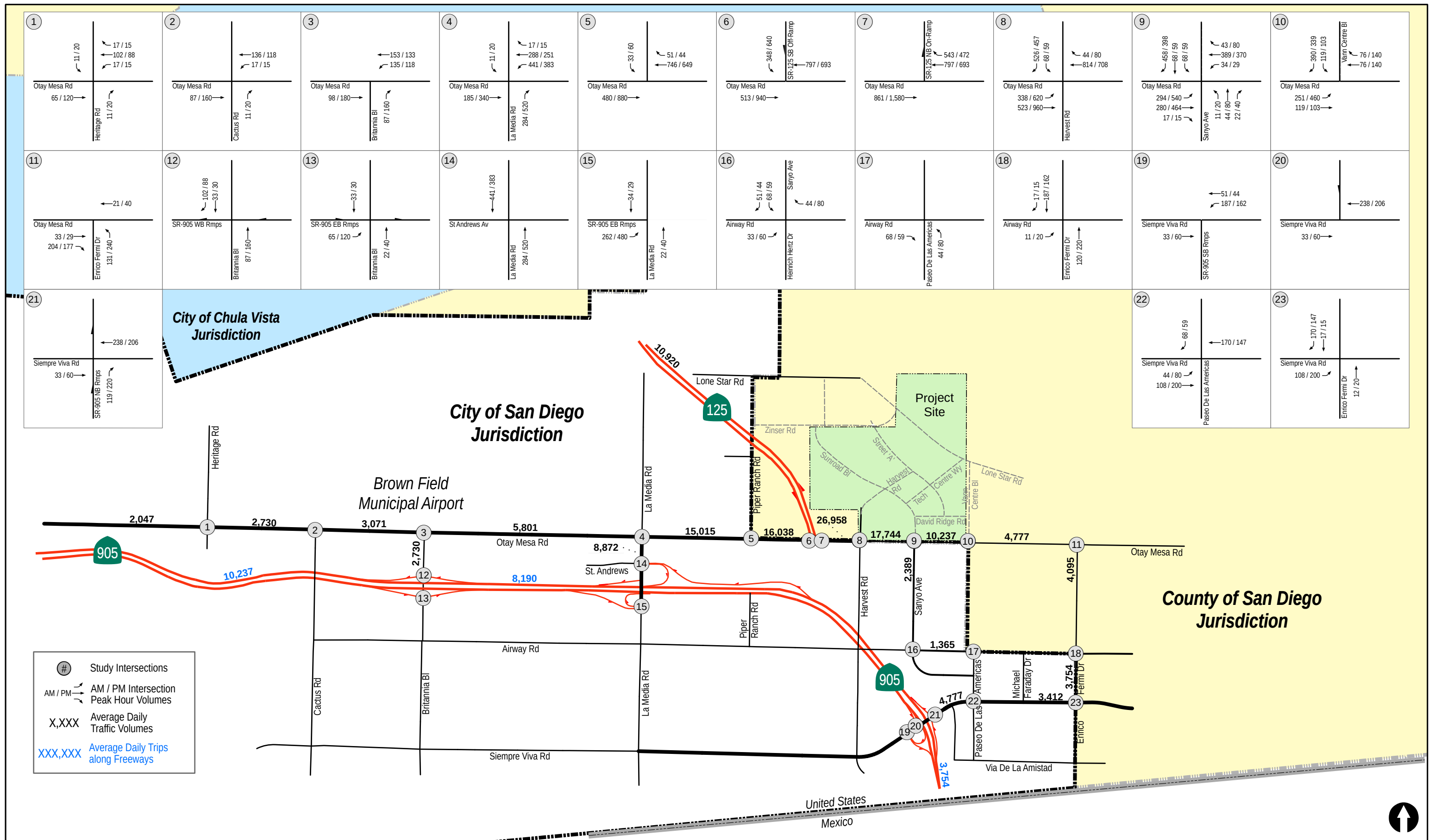
Figure 7–1 shows the regional and local distribution of the Project trips. **Figure 7–2** shows the total Project traffic volumes.

TABLE 7-1
PROJECT TRIP GENERATION

Land Use	Quantity	Daily Trip Ends (ADT)		AM Peak Hour					PM Peak Hour				
		Rate ^a	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Mixed-Use													
Planning Area A													
Residential (6-20 DU/Acre)	862 Units	8 /Unit	6,896	8%	20 : 80	111	441	552	9%	70 : 30	435	186	621
Tech Park ^b	3.0 Acres	120 /Acre	360	14%	80 : 20	40	10	50	15%	30 : 70	17	37	54
Subtotal	-	-	7,256	-	-	151	451	602	-	-	452	223	675
Planning Area B													
Residential (6-20 DU/Acre)	1,381 Units	8 /Unit	11,048	8%	20 : 80	177	707	884	9%	70 : 30	697	298	995
Tech Park ^b	1.9 Acres	120 /Acre	228	14%	80 : 20	26	6	32	15%	30 : 70	10	24	34
Specialty Retail	0.5 Acres	400 /Acre	200	3%	60 : 40	4	2	6	9%	50 : 50	9	9	18
Subtotal	-	-	11,476	-	-	207	715	922	-	-	716	331	1,047
Planning Area C													
Residential (6-20 DU/Acre)	227 Units	8 /Unit	1,816	8%	20 : 80	29	116	145	9%	70 : 30	114	49	163
Tech Park ^b	10.4 Acres	120 /Acre	1,248	14%	80 : 20	140	35	175	15%	30 : 70	56	131	187
Neighborhood Shopping Center	6.8 Acres	960 /Acre ^c	6,528	4%	60 : 40	157	104	261	10%	50 : 50	327	327	654
Subtotal	-	-	9,592	-	-	326	255	581	-	-	497	507	1,004
Planning Area D													
Residential (6-20 DU/Acre)	688 Units	8 /Unit	5,504	8%	20 : 80	88	352	440	9%	70 : 30	373	160	533
Tech Park	24.6 Acres	120 /Acre	2,952	14%	80 : 20	330	83	413	15%	30 : 70	133	310	443
Specialty Retail	0.5 Acres	400 /Acre	200	3%	60 : 40	4	2	6	9%	50 : 50	9	9	18
Subtotal	-	-	8,656	-	-	422	437	859	-	-	515	479	994
Technology Business Park													
Planning Area E													
Tech Park	7.8 Acres	120 /Acre	936	14%	80 : 20	105	26	131	15%	30 : 70	42	98	140
Subtotal	-	-	936	-	-	105	26	131	-	-	42	98	140
Total	-	-	37,916	-		1,211	1,884	3,095	-		2,222	1,638	3,860
Mixed Use Credit (10%)	-	-	(3,792)	-		(121)	(189)	(310)	-		(222)	(164)	(386)
Net Total	-	-	34,124	-		1,090	1,695	2,785	-		2,000	1,474	3,474

Footnotes:
a. Rates from SANDAG’s (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.
b. Industrial Plant Land Use trip generation rate used, as used in the Otay Tech Center Project TIA.
c. 20% pass-by reduction applied to the Neighborhood Shopping Center trip generation rate of 1,200 ADT / Acre.





8.0 ANALYSIS OF EXISTING + PROJECT CONDITIONS

This scenario analyzes the traffic impacts of the total Project under Existing conditions. **Figure 8-1** illustrates the Existing + Project traffic volumes.

8.1 Intersection Operations

Table 8-1 summarizes the intersection operations under Existing + Project conditions. As seen in **Table 8-1**, with the addition of Project traffic, the study intersections are calculated to operate at acceptable levels of service with the exception of the following:

4. Otay Mesa Road / La Media Road (LOS F during the AM peak hour and PM peak hours)
8. Otay Mesa Road / Harvest Road (LOS F during the AM and PM peak hours)
9. Otay Mesa Road / Sanyo Avenue (LOS F during the AM and PM peak hours)
10. Otay Mesa Road / Vann Centre Boulevard (LOS F during the AM and PM peak hours)

A Project related significant direct impact is calculated at the following intersection, which falls within the City of San Diego's jurisdiction, based on the City's significance criteria:

4. Otay Mesa Road / La Media Road

Project related significant direct impacts are calculated at the following intersections, which fall within the County of San Diego's jurisdiction, based on the County's significance criteria:

8. Otay Mesa Road / Harvest Road
9. Otay Mesa Road / Sanyo Avenue
10. Otay Mesa Road / Vann Centre Boulevard

Appendix E contains the Existing + Project intersection analysis worksheets.

8.2 Daily Street Segment Operations

Table 8-2 summarizes the roadway segment operations under Existing + Project conditions. As seen in **Table 8-2**, with the addition of Project traffic, the study area segments are calculated to operate at acceptable levels of service with the exception of the following:

- Otay Mesa Road: Sanyo Avenue to Vann Centre Boulevard (LOS F)
- Otay Mesa Road: Vann Centre Boulevard to Enrico Fermi Drive (LOS E)

Project related significant direct impacts are calculated along the above listed street segments, which fall within the County of San Diego's jurisdiction, based on the County's significance criteria:

8.3 Freeway Mainline Operations

Table 8-3 summarizes the freeway mainline operations along SR 905 under Existing + Project conditions. As seen in **Table 8-3**, with the addition of Project traffic, the study area freeway mainline segments are calculated to operate at acceptable levels of service during the AM and PM peak hours.

TABLE 8-1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Existing		Existing + Project		Δ^c	Impact
				Delay ^a	LOS ^b	Delay	LOS		
1. Otay Mesa Road / Heritage Road	City	Signal	AM	37.9	D	38.8	D	0.9	None
			PM	35.7	D	37.1	D	1.4	None
2. Otay Mesa Road / Cactus Road	City	Signal	AM	17.8	B	17.9	B	0.1	None
			PM	16.1	B	16.2	B	0.1	None
3. Otay Mesa Road / Britannia Boulevard	City	Signal	AM	28.5	C	34.9	C	6.4	None
			PM	27.9	C	44.6	D	16.7	None
4. Otay Mesa Road / La Media Road	City	Signal	AM	178.8	F	322.9	F	144.1	Direct
			PM	61.4	E	237.8	F	176.4	Direct
5. Otay Mesa Road / Piper Ranch Road	County	Signal	AM	14.7	B	18.2	B	3.5	None
			PM	19.7	B	19.8	B	0.1	None
6. Otay Mesa Road / SR 125 SB Off-Ramp	County	Signal	AM	18.4	B	20.2	C	1.8	None
			PM	8.4	A	13.8	B	5.4	None
7. Otay Mesa Road / SR 125 NB On-Ramp	County	Signal	AM	1.9	A	2.0	A	0.1	None
			PM	4.5	A	4.6	A	0.1	None
8. Otay Mesa Road / Harvest Road	County	TWSC ^d	AM	48.0	E	>300	F	68^c	Direct
			PM	11.8	B	>300	F	59^c	Direct
9. Otay Mesa Road / Sanyo Avenue	County	Signal	AM	12.2	B	178.2	F	166.0	Direct
			PM	17.6	B	170.4	F	152.8	Direct

TABLE 8-1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Existing		Existing + Project		Δ^c	Impact
				Delay ^a	LOS ^b	Delay	LOS		
10. Otay Mesa Road / Vann Centre Boulevard	County	OWSC ^e	AM	<i>DNE^g</i>	-	>300	F	119^c	Direct
			PM	<i>DNE</i>	-	>300	F	103^c	Direct
11. Otay Mesa Road / Enrico Fermi Drive	County	Signal	AM	11.0	B	46.7	D	35.7	None
			PM	8.8	A	15.7	B	6.9	None
12. SR 905 WB Ramps / Britannia Boulevard	City	Signal	AM	22.8	C	22.9	C	0.1	None
			PM	22.8	C	23.8	C	1.0	None
13. SR 905 EB Ramps / Britannia Boulevard	City	Signal	AM	23.1	C	23.6	C	0.5	None
			PM	18.4	B	22.4	C	4.0	None
14. SR 905 WB Ramps / La Media Road	City	Signal	AM	13.4	B	13.5	B	0.1	None
			PM	12.3	B	12.4	B	0.1	None
15. SR 905 EB Ramps / La Media Road	City of San Diego	Signal	AM	28.7	C	30.4	C	1.7	None
			PM	17.0	B	35.7	D	18.7	None
16. Airway Road / Sanyo Avenue	City	AWSC ^f	AM	10.4	B	12.7	B	2.3	None
			PM	11.1	B	14.9	B	3.8	None
17. Airway Road / Paseo de las Americas	County	TWSC	AM	11.2	B	12.1	B	68 ^c	None
			PM	13.3	B	16.9	C	80 ^c	None
18. Airway Road / Enrico Fermi Drive	County	Signal	AM	12.1	B	12.2	B	0.1	None
			PM	12.8	B	12.9	B	0.1	None

TABLE 8-1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Existing		Existing + Project		Δ^c	Impact
				Delay ^a	LOS ^b	Delay	LOS		
19. Siempre Viva Road EB / SR 905 SB Ramps	City	Signal	AM	21.0	C	24.5	C	3.5	None
			PM	16.2	B	19.2	B	3.0	None
20. Siempre Viva Road WB / SR 905 SB Off-Ramp	City	OWSC	AM	19.8	C	29.7	D	9.9	None
			PM	15.7	C	19.3	C	3.6	None
21. Siempre Viva Road / SR 905 NB Ramps	City	Signal	AM	22.4	C	23.9	C	1.5	None
			PM	20.3	C	28.2	C	7.9	None
22. Siempre Viva Road / Paseo de las Americas	City	Signal	AM	25.6	C	31.4	C	5.8	None
			PM	35.2	D	54.9	D	19.7	None
23. Siempre Viva Road / Enrico Fermi Drive	County	Signal	AM	49.1	D	49.4	D	0.3	None
			PM	50.4	D	50.5	D	0.1	None

Footnotes:

- a. Average intersection delay per vehicle in seconds
- b. Level of Service
- c. Increase in delay due to Project traffic. For unsignalized intersections in the County, “ Δ ” denotes the increase in volume due to Project related traffic on the critical movement.
- d. TWSC: Two-Way-Stop-Controlled intersection. Minor Street left-turn delay and LOS reported.
- e. OWSC: One-Way-Stop-Controlled intersection. Minor Street left-turn delay and LOS reported.
- f. AWSC: All-Way-Stop-Controlled intersection.
- g. Intersection does not exist under Existing conditions.

General Notes:

Bold indicates potential significant impact.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 8-2
EXISTING + PROJECT SEGMENT OPERATIONS

Roadway Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	Existing			Existing + Project				
				ADT ^b	V/C ^c	LOS ^d	ADT	V/C	LOS	Δ ^e	Sig
Otay Mesa Road											
West of Heritage Rd	City	6-Lane Prime	60,000	9,670	0.161	A	11,717	0.195	A	0.034	None
Heritage Rd to Cactus Rd	City	6-Lane Prime	60,000	8,260	0.138	A	10,990	0.183	A	0.046	None
Cactus Rd to Britannia Blvd	City	6-Lane Prime	60,000	8,710	0.145	A	11,781	0.196	A	0.051	None
Britannia Blvd to La Media Rd	City	6-Lane Prime	60,000	8,600	0.143	A	14,401	0.240	A	0.097	None
La Media Rd to Piper Ranch Rd	City	5-Lane Major	45,000	15,560	0.346	A	30,575	0.679	C	0.334	None
Piper Ranch Rd to SR 125 Ramps	County	6-Lane Prime	57,000	13,110	0.230	A	29,148	0.511	B	>600 ^c	None
SR 125 Ramps to Harvest Rd	County	5-Lane Major	47,000	10,510	0.224	A	37,468	0.797	D	>600 ^c	None
Harvest Rd to Sanyo Ave	County	4-Lane Major	37,000	10,410	0.281	A	28,154	0.761	C	>400 ^c	None
Sanyo Ave to Vann Centre Blvd	County	Local Collector	16,200	10,410	0.643	D	20,647	1.275	F	>100^c	Direct
Vann Centre Blvd to Enrico Fermi Dr	County	Local Collector	16,200	10,090	0.623	D	14,867	0.918	E	>200^c	Direct
Britannia Boulevard											
Otay Mesa Rd to SR 905	City	6-Lane Prime	60,000	10,800	0.180	A	13,530	0.226	A	0.046	None
Sanyo Avenue											
Otay Mesa Rd to Airway Rd	City	4-Lane Collector	30,000	5,600	0.187	A	7,989	0.266	A	0.080	None
Enrico Fermi Drive											
Otay Mesa Rd to Airway Rd	County	2-Lane Collector	9,700	4,180	0.431	A	8,275	0.853	D	>200 ^c	None
Airway Rd to Siempre Viva Rd	County	4-Lane Major	37,000	3,200	0.086	A	6,954	0.188	A	>400 ^c	None
Airway Road											
Sanyo Ave to Paseo De Las Americas	City	4-Lane Major	40,000	2,810	0.070	A	4,175	0.104	A	0.034	None

TABLE 8-2
EXISTING + PROJECT SEGMENT OPERATIONS

Roadway Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	Existing			Existing + Project				
				ADT ^b	V/C ^c	LOS ^d	ADT	V/C	LOS	Δ ^e	Sig
La Media Road Otay Mesa Rd to SR-905	City	5-Lane Major	45,000	15,700	0.349	A	24,572	0.546	C	0.197	None
Siempre Viva Road SR 905 to Paseo De Las Americas	City	6-Lane Prime	60,000	18,800	0.313	A	23,577	0.393	A	0.080	None
Paseo De Las Americas to Enrico Fermi Dr	City	6-Lane Prime	60,000	11,400	0.190	A	14,812	0.247	A	0.057	None

Footnotes:

- a. Capacity from City / County LOS threshold tables
- b. Average Daily Traffic
- c. Volume / Capacity
- d. Level of Service
- e. "Δ" denotes the Project induced increase in V/C. For segments in the County, "Δ" denotes the increase in volume due to Project related traffic.

General Notes:

BOLD indicates a potential significant Project impact

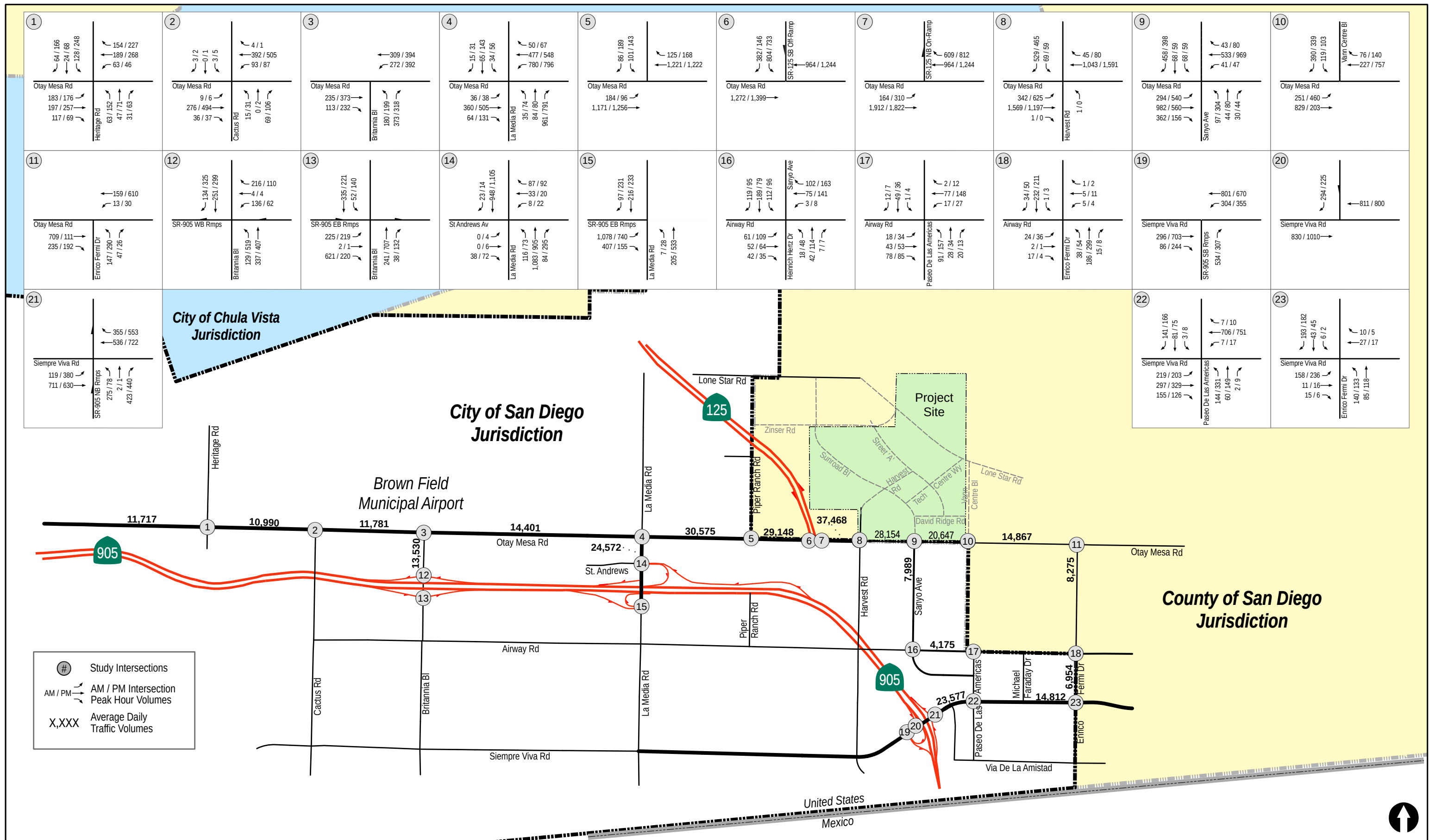
TABLE 8-3
EXISTING + PROJECT FREEWAY MAINLINE OPERATIONS

Freeway and Segment	Direction, Number of Lanes ^a & Capacity ^b			Existing						Existing + Project						Δ ^d		Significant Impact?	
				Peak Hour Volume		V/C ^c		LOS ^c		Peak Hour Volume		V/C		LOS					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR 905																			
Heritage Road to Britannia Blvd	WB	3M	6,000	2,160	3,690	0.360	0.615	B	B	2,669	4,132	0.445	0.689	B	C	0.085	0.074	No	No
	EB	3M	6,000	2,080	1,510	0.347	0.252	B	B	2,407	2,110	0.401	0.352	B	B	0.055	0.100	No	No
Britannia Blvd to La Media Rd	WB	3M	6,000	1,700	2,340	0.283	0.390	B	B	2,107	2,694	0.351	0.449	B	B	0.068	0.059	No	No
	EB	3M + 1A	7,200	1,970	1,730	0.274	0.240	B	B	2,232	2,210	0.310	0.307	B	B	0.036	0.067	No	No
La Media Rd to Siempre Viva Rd	NB	3M	6,000	1,610	1,940	0.268	0.323	B	B	1,610	1,940	0.268	0.323	B	B	0.000	0.000	No	No
	SB	3M	6,000	1,670	1,720	0.278	0.287	B	B	1,670	1,720	0.278	0.287	B	B	0.000	0.000	No	No

Footnotes:

- a. "M" = Mainline, "A" = Auxiliary Lane
- b. Capacity = 2,000 vehicles per hour per lane (mainline), 1,200 vehicles per hour per lane (auxiliary).
- c. Volume to Capacity ratio.
- d. "Δ" denotes the Project-induced increase in Volume to Capacity ratio.
- e. Level of Service

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46



9.0 ANALYSIS OF CUMULATIVE (YEAR 2020) WITH PROJECT CONDITIONS

9.1 Cumulative (Year 2020) with Project Traffic Volumes

The Otay Mesa area, in which the proposed Project is located, will be significantly developed within the coming years, with a large number of forthcoming cumulative projects planned. Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future.

Based on research conducted for the cumulative condition, and coordination with County of San Diego staff, it was determined that use of the “Year 2020 with Project” traffic model, which was developed for use in the previously approved December 2011 study, should be used to analyze the cumulative condition. The model assumes the addition of the proposed Project, forthcoming cumulative projects and planned roadway network improvements. Additional information pertaining to the Year 2020 with Project traffic model from the previously approved study is provided in **Appendix F**.

It should be noted that the previously approved study calculated the project to generate peak hour traffic equal to or greater than the calculated peak hour traffic for the currently proposed Project (2,785/3,687 AM/PM peak hour volumes calculated in the previously approved study as compared to 2,785/3,474 AM/PM peak hour volumes calculated for the currently proposed Project), and therefore use of the Year 2020 peak hour volumes from the previous study represents a conservative approach. However, the currently proposed Project is calculated to generate 3,558 additional ADT as compared to the previously approved study (30,566 ADT from the previously approved study vs. 34,124 ADT for the currently proposed Project). This difference was manually added to the Year 2020 ADT volumes.

Figure 9–1 shows the Year 2020 (with Project) cumulative traffic volumes. Some changes to the existing travel patterns are reflected in the traffic volumes under Year 2020 with Project conditions as a result of the proposed forthcoming network changes, as discussed further in the following section.

9.2 Cumulative (Year 2020) Scheduled Network Improvement Projects

There are currently two (2) major network improvement projects in the Otay Mesa Area that are expected to be complete by Year 2020: the SR 905 / SR 125 Northbound Connectors project and the SR 11 / Otay Mesa East project. These projects were taken into account in the Year 2020 with Project model discussed above and the resulting Year 2020 with Project analysis presented in this study. These network changes account for some relatively large-scale differences in the traffic volumes as compared to Existing conditions due to a greater variety of travel options and the opportunities for regional travel.

The following summarizes the project description and schedule for each of these projects. A copy of the Caltrans’ Fact Sheets for each of these projects is provided in **Appendix G**.

State Route 905 - The State Route 905 (SR 905) project is an ongoing effort to construct a transportation facility from Interstate 805 to the Otay Mesa Port of Entry (POE) at the US-Mexico Border to provide for more efficient transpiration of people, goods, and services within the Otay Mesa region of San Diego. The corridor is being built in multiple phases with Phases 1A and 1B, the mainlines of the freeway, already constructed and open to traffic. Phase 2 improvements to the I-805 / SR 905 interchange have also been completed. Phase 3A will construct the northbound connectors between SR 905 and SR 125. Funding from the Trade Corridor Improvement Fund (TCIF) has been allocated for the construction of Phase 3A. Construction of the freeway-to-freeway northbound connectors is expected to begin in 2016. Based on the most current information available from Caltrans, funding for the subsequent Phase 3B, which will construct the southbound connectors between SR 905 and SR 125, and Phase 4, which will construct an interchange at Heritage Road, has yet to be secured, and therefore the associated improvements were not assumed under Year 2020 conditions.

State Route 11 - The State Route 11 (SR 11) project will ultimately consist of constructing an four-lane freeway facility from the proposed SR 905/SR 125 junction to the future Federal Port of Entry (POE) at east Otay Mesa in San Diego County. The project is proposed to be constructed in three segments. The construction of Segment 1, an approximately 1.2 mile stretch between the SR 905 / SR 125 junction and Enrico Fermi Drive opened to traffic in March 2016 . Based on the most current information available from SANDAG and Caltrans, funding for the subsequent Segment 2 and Segment 3 phases of the project, which will construct the remainder of the freeway between Enrico Fermi and the future Federal POE at east Otay Mesa, has yet to be secured, and therefore the associated improvements were not assumed under Year 2020 conditions.

9.3 Year 2020 Cumulative Conditions Analysis

9.3.1 Intersection Operations

Table 9–1 summarizes the intersection operations under Year 2020 conditions. As seen in *Table 9–1*, the study intersections are calculated to operate at acceptable levels of service with the exception of the following:

4. Otay Mesa Road / La Media Road (LOS E during the AM peak hour and PM peak hours)
8. Otay Mesa Road / Harvest Road (LOS F during the AM and PM peak hours)
9. Otay Mesa Road / Sanyo Avenue (LOS F during the AM and PM peak hours)
10. Otay Mesa Road / Vann Centre Boulevard (LOS F during the AM and PM peak hours)
16. Airway Road / Sanyo Avenue (LOS F during the AM and PM peak hours)
17. Airway Road / Paseo de las Americas (LOS F during the AM and PM peak hours)
22. Siempre Viva Road / Paseo de las Americas (LOS F during the AM and PM peak hours)
23. Siempre Viva Road / Enrico Fermi Drive (LOS F during the AM peak hour)

A Project related significant cumulative impacts are calculated at the following intersections, which fall within the City of San Diego's jurisdiction, based on the City's significance criteria:

- 4. Otay Mesa Road / La Media Road
- 16. Airway Road / Sanyo Avenue
- 22. Siempre Viva Road / Paseo de las Americas

Project related significant cumulative impacts are calculated at the following intersections, which fall within the County of San Diego's jurisdiction, based on the County's significance criteria:

- 8. Otay Mesa Road / Harvest Road
- 9. Otay Mesa Road / Sanyo Avenue
- 10. Otay Mesa Road / Vann Centre Boulevard
- 17. Airway Road / Paseo de las Americas
- 23. Siempre Viva Road / Enrico Fermi Drive

Appendix H contains the Year 2020 intersection analysis worksheets.

9.3.2 **Daily Street Segment Operations**

Table 9–2 summarizes the roadway segment operations under Year 2020 conditions. As seen in **Table 9–2** the study area segments are calculated to operate at acceptable levels of service with the exception of the following:

- Enrico Fermi Drive: Otay Mesa Road to Airway Road (LOS F)

A Project related significant cumulative impact is calculated along the above listed street segment, which falls within the County of San Diego's jurisdiction, based on the County's significance criteria.

9.3.3 **Freeway Mainline Operations**

Table 9–3 summarizes the freeway mainline operations along SR 905 under Year 2020 conditions. As seen in **Table 9–4** the study area freeway mainline segments are calculated to operate at acceptable levels of service during the AM and PM peak hours.

TABLE 9-1
YEAR 2020 CUMULATIVE INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Year 2020+ Project		Impact
				Delay ^a	LOS ^b	
1. Otay Mesa Road / Heritage Road	City	Signal	AM PM	42.7 40.2	D D	None
2. Otay Mesa Road / Cactus Road	City	Signal	AM PM	21.6 28.4	C C	None
3. Otay Mesa Road / Britannia Boulevard	City	Signal	AM PM	43.9 23.7	D C	None
4. Otay Mesa Road / La Media Road	City	Signal	AM PM	61.4 65.8	E E	Cumulative
5. Otay Mesa Road / Piper Ranch Road	County	Signal	AM PM	13.5 23.7	B C	None
6. Otay Mesa Road / SR 125 SB Off-Ramp	County	Signal	AM PM	13.8 6.0	B A	None
7. Otay Mesa Road / SR 125 NB On-Ramp	County	Signal	AM PM	0.2 0.5	A A	None
8. Otay Mesa Road / Harvest Road	County	TWSC ^c	AM PM	> 300 > 300	F F	Cumulative
9. Otay Mesa Road / Sanyo Avenue	County	Signal	AM PM	195.3 191.2	F F	Cumulative
10. Otay Mesa Road / Vann Centre Boulevard	County	OWSC ^d	AM PM	> 300 > 300	F F	Cumulative
11. Otay Mesa Road / Enrico Fermi Drive	County	Signal	AM PM	23.8 54.1	C D	None

TABLE 9-1
YEAR 2020 CUMULATIVE INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Year 2020+ Project		Impact
				Delay ^a	LOS ^b	
12. SR 905 WB Ramps / Britannia Boulevard	City	Signal	AM PM	26.2 23.3	C C	None
13. SR 905 EB Ramps / Britannia Boulevard	City	Signal	AM PM	54.5 19.8	D B	None
14. SR 905 WB Ramps / La Media Road	City	Signal	AM PM	10.7 12.8	B B	None
15. SR 905 EB Ramps / La Media Road	City	Signal	AM PM	32.1 17.1	C B	None
16. Airway Road / Sanyo Avenue	City	AWSC ^c	AM PM	69.7 64.3	F F	Cumulative
17. Airway Road / Paseo De Las Americas	County	TWSC	AM PM	>300 >300	F F	Cumulative
18. Airway Road / Enrico Fermi Drive	County	Signal	AM PM	29.9 26.8	C C	None
19. Siempre Viva Road EB / SR 905 SB Ramps	City	Signal	AM PM	50.6 48.7	D D	None
20. Siempre Viva Road WB / SR 905 SB Off-Ramp	City	OWSC	AM PM	25.0 20.1	D C	None
21. Siempre Viva Road / SR 905 NB Ramps	City	Signal	AM PM	23.7 36.1	C D	None
22. Siempre Viva Road / Paseo de las Americas	City	Signal	AM PM	247.0 219.4	F F	Cumulative

TABLE 9-1
YEAR 2020 CUMULATIVE INTERSECTION OPERATIONS

Intersection	Jurisdiction	Control Type	Peak Hour	Year 2020+ Project		Impact
				Delay ^a	LOS ^b	
23. Siempre Viva Road / Enrico Fermi Drive	County	Signal	AM PM	244.5 54.1	F D	Cumulative

Footnotes:

- a. Average intersection delay per vehicle in seconds
- b. Level of Service
- c. TWSC: Two-Way-Stop-Controlled intersection. Minor Street left-turn delay and LOS reported
- d. OWSC: One-Way-Stop-Controlled intersection. Minor Street left-turn delay and LOS reported
- e. AWSC: All-Way-Stop-Controlled intersection

General Notes:

Bold indicates potential significant Project impact.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 9-2
YEAR 2020 CUMULATIVE SEGMENT OPERATIONS

Roadway Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	ADT ^b	V/C ^c	LOS ^d	Sig
Otay Mesa Road							
West of Heritage Rd	City	6-Lane Prime	60,000	32,313	0.539	B	None
Heritage Rd to Cactus Rd	City	6-Lane Prime	60,000	30,145	0.502	B	None
Cactus Rd to Britannia Blvd	City	6-Lane Prime	60,000	33,150	0.553	B	None
Britannia Blvd to La Media Rd	City	6-Lane Prime	60,000	22,675	0.378	A	None
La Media Rd to Piper Ranch Rd	City	5-Lane Major	45,000	33,166	0.737	C	None
Piper Ranch Road to SR 125 Ramps	County	6-Lane Prime	57,000	29,422	0.516	B	None
SR 125 Ramps to Harvest Rd	County	5-Lane Major	47,000	36,009	0.766	C	None
Harvest Rd to Sanyo Ave	County	4-Lane Major	37,000	14,258	0.385	A	None
Sanyo Ave to Vann Centre Blvd	County	Local Collector	16,200	5,519	0.341	C	None
Vann Centre Blvd to Enrico Fermi Dr	County	Local Collector	16,200	5,943	0.367	C	None
Britannia Boulevard							
Otay Mesa Rd to SR 905 Ramps	City	6-Lane Prime	60,000	16,384	0.273	A	None
Sanyo Avenue							
Otay Mesa Rd to Airway Rd	City	4-Lane Collector	30,000	16,647	0.555	C	None
Enrico Fermi Drive							
Otay Mesa Rd to Airway Rd	County	2-Lane Collector	9,700	17,221	1.775	F	Cumulative
Airway Rd to Siempre Viva Rd	County	4-Lane Major	37,000	13,756	0.372	A	None
Airway Road							
Sanyo Ave to Paseo De Las Americas	City	4-Lane Major	40,000	16,350	0.409	B	None

TABLE 9-2
YEAR 2020 CUMULATIVE SEGMENT OPERATIONS

Roadway Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	ADT ^b	V/C ^c	LOS ^d	Sig
La Media Road Otay Mesa Rd to SR 905 Ramps	City of San Diego	5-Lane Major	45,000	29,135	0.647	C	None
Siempre Viva Road SR 905 Ramps to Paseo de las Americas	City of San Diego	6-Lane Prime	60,000	44,260	0.738	C	None
Paseo de las Americas to Enrico Fermi Dr	City of San Diego	6-Lane Prime	60,000	22,500	0.375	A	None

Footnotes:

- a. Capacity from City / County LOS threshold tables
- b. Average Daily Traffic
- c. Volume / Capacity
- d. Level of Service

General Notes:

BOLD indicates a potential significant Project impact.

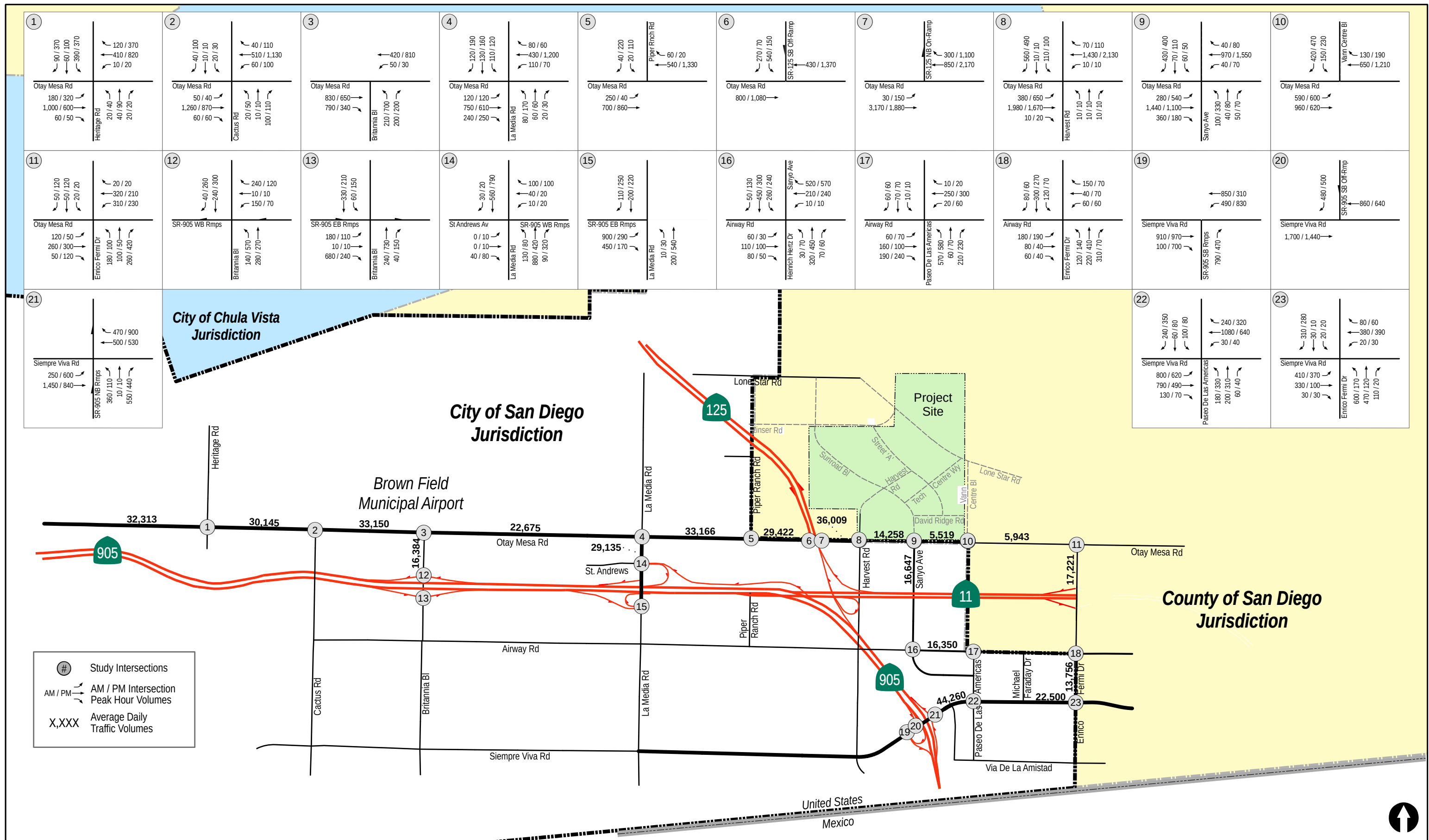
TABLE 9-3
YEAR 2020 CUMULATIVE FREEWAY MAINLINE OPERATIONS

Freeway and Segment	Direction, Number of Lanes ^a & Capacity ^b			ADT	Peak Hour Volume		V/C ^c		LOS ^d	
					AM	PM	AM	PM	AM	PM
SR 905										
Heritage Road to Britannia Blvd	WB Mainline	3M	6,000	116,500	2,936	4,545	0.489	0.758	B	C
	EB Mainline	3M	6,000	116,500	2,648	2,321	0.441	0.387	B	B
Britannia Blvd to La Media Rd	WB Mainline	3M	6,000	103,500	2,318	2,963	0.386	0.494	B	B
	EB Mainline	3M + 1A	7,200	103,500	2,455	2,431	0.341	0.338	B	B
La Media Rd to Siempre Viva Rd	NB Mainline	3M	6,000	91,020	1,771	2,134	0.295	0.356	B	B
	SB Mainline	3M	6,000	91,020	1,837	1,892	0.306	0.315	B	B

Footnotes:

- a. "M" = Mainline, "A" = Auxiliary Lane
- b. Capacity = 2,000 vehicles per hour per lane (mainline), 1,200 vehicles per hour per lane (auxiliary)
- c. Volume to Capacity ratio
- d. Level of Service

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46



10.0 PROJECT ACCESS AND ON-SITE CIRCULATION

10.1 Project Access

The Project will be primarily served by three access points at Harvest Road, Sanyo Avenue and Vann Centre Boulevard, north of Otay Mesa Road. The Existing north leg of Harvest Road at Otay Mesa Road is currently constructed as a two-lane undivided roadway that provides access to Lone Star Road to the north, serving very limited land uses. The north legs of Sanyo Avenue and Vann Centre Boulevard do not exist under Existing conditions.

For the purposes of this study, analysis of the Project's access points at Sanyo Avenue and Vann Centre Boulevard was conducted assuming construction of only the most rudimentary lane configurations north of Otay Mesa Road. The Project access point at Harvest Road was analyzed under Existing conditions. As shown in *Tables 8-1 and 9-1*, under the aforementioned conditions, significant direct and cumulative impacts are calculated at all three Project access points prior to implementation of the mitigation measure improvements detailed in *Section 11* of this study. Improvements are recommended at each access point, as shown on **Figure 10-1** to mitigate the Project's direct impacts. Under post-mitigation conditions, the Project access points are calculated to operate at an acceptable LOS according to County standards. In addition, pavement widening along the Otay Mesa Road project frontage should be provided to County Prime Arterial Standards as part of the direct impact mitigation. However, the striping of 6-lanes on Otay Mesa Road would not be provided since 6-lanes are not currently provided off site.

The recommended Ultimate Improvements at the Project's access points are shown on **Figure 10-2**. Implementation of these improvements will provide acceptable operations under cumulative conditions and are recommended to be provided when Otay Mesa Road is ultimately constructed to its 6-lane Prime Arterial classification. The Ultimate Improvements are not needed to mitigate the Project's significant impacts.

10.2 On-Site Circulation

The Project will construct a number of roadways within the Project site to facilitate internal circulation and comply with the existing East Otay Mesa Specific Plan. All on-site roadways will be designed and constructed per County of San Diego Public Road Standards. In addition, all classified Mobility Element roadways within the Project site will be constructed to conform to the roadway classifications outlined in Table 2.2-1 of the *East Otay Mesa Specific Plan Circulation Element* (included in **Appendix I**). The on-site Mobility Element roadways and their corresponding classifications are summarized below in **Table 10-1**.

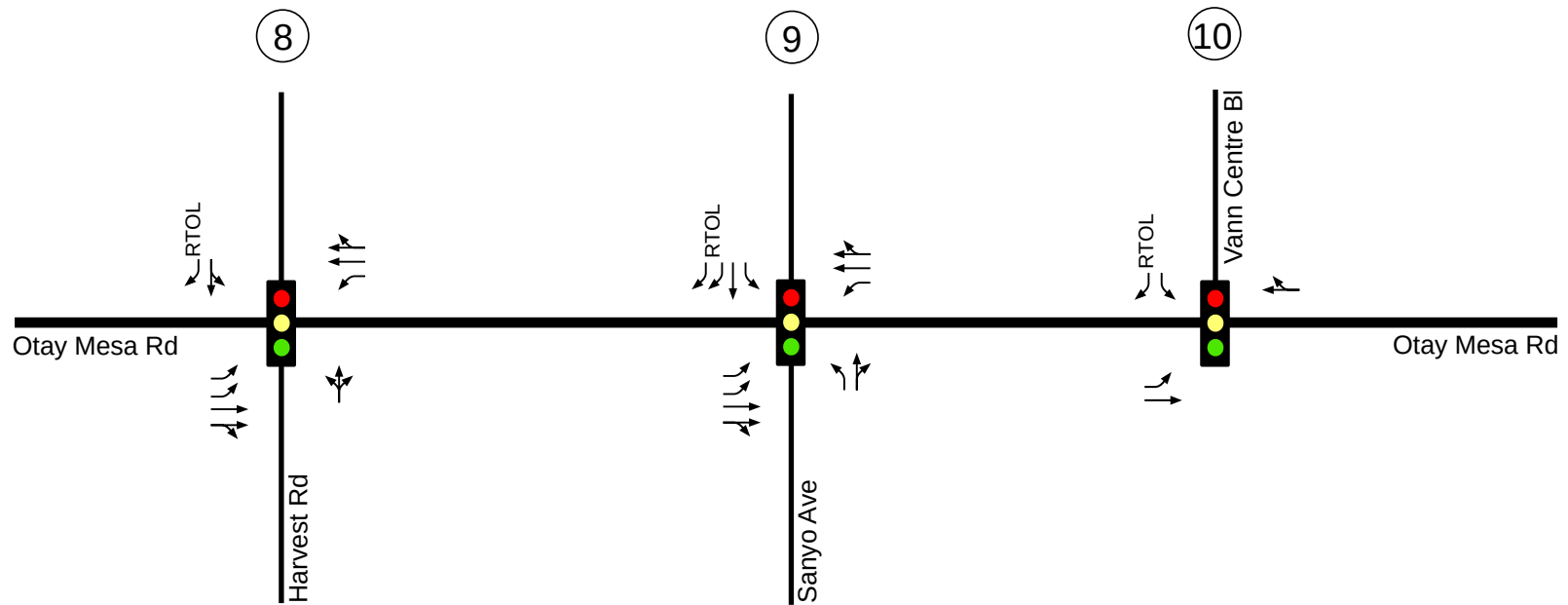
The Project will also be responsible for making ½ width frontage improvements along Otay Mesa Road between Harvest Road and Vann Centre Boulevard to improve the roadway to 6-lane Prime Arterial standards per the County's Centerline Ordinance.

TABLE 10-1
ON-SITE CIRCULATION ELEMENT ROADWAYS

On-Site Roadway	Classification ^a
David Ridge Drive: Sunroad Boulevard (Sanyo Avenue) to Alta Road	2-lane Collector with Bike Route
Harvest Road: Sunroad Boulevard (Sanyo Avenue) to Otay Mesa Road	4-lane Collector with Bike Route
Sunroad Boulevard (Sanyo Avenue): Lone Star Road to Otay Mesa Road	4-lane Major Road with Bike Route
Vann Centre Boulevard: Otay Mesa Road to Lone Star Road	4-lane Collector with Bike Route south of Lone Star Road
Zinser Road: west of Sunroad Boulevard (Sanyo Avenue)	4-lane Collector with Bike Route
Zinser Road: Sunroad Boulevard (Sanyo Avenue) to Lone Star Road	2-lane Collector with Bike Route

Footnotes:

a. As classified in the *East Otay Mesa Specific Plan Circulation Element*



Note:

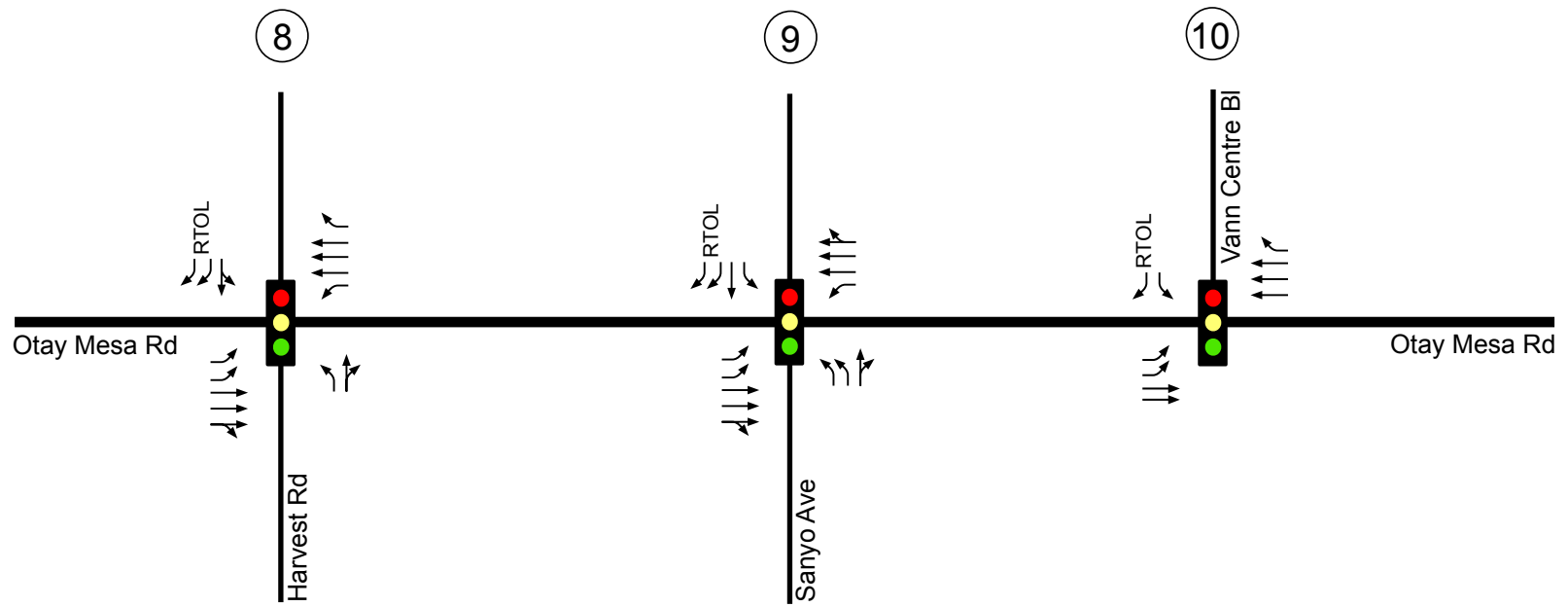
Pavement widening along the Otay Mesa Road project frontage should be provided to Country Prime Arterial standards as part of the direct impact mitigation. However, the striping of 6-Lanes on Otay Mesa Road would not be provided since 6-Lanes are not currently provided off-site.



Figure 10-1

Direct Impact Mitigation

EAST OTAY MESA



11.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Per the County of San Diego and City of San Diego's significance thresholds and the analysis methodologies presented in this report, Project-related and cumulative traffic are calculated to cause significant impacts within the study area under the direct and cumulative conditions. The following section lists the significant impacts and provides recommendations for mitigation measures to address operating deficiencies. For mitigation measures within the City of San Diego that recommend fair share contributions, the following formula is utilized by the City to calculate fair share percentages:

$$\text{Fair share \%} = \text{Project Traffic} / (\text{Buildout} - \text{Existing Traffic})$$

11.1 Direct Impacts

A summary of Project's direct impacts under Existing + Project conditions and proposed mitigation measures is provided in **Table 11-1**, and shown graphically in **Figure 11-1**.

Table 11-2 reports the results of the post-mitigation intersection analysis under Existing + Project conditions. **Appendix J** contains the post-mitigation intersection analysis worksheets. **Table 11-3** reports the results of the post-mitigation segment analysis under Existing + Project conditions.

11.2 Cumulative Impacts

A summary of Project's cumulative impacts under Year 2020 + Project conditions and proposed mitigation measures is provided in **Table 11-1**, and shown graphically in **Figure 11-2**.

The Project's cumulative impacts to facilities located within the County of San Diego's jurisdiction are mitigatable through payment of the County's Transportation Impact Fee (TIF). The County has developed an overall programmatic solution to address existing and projected future road deficiencies in San Diego County. This program includes the adoption of the TIF program to fund improvements to roadways necessary to mitigate potential cumulative impacts caused by traffic from future development. Based on SANDAG regional growth and land use forecasts, the SANDAG Regional Transportation Model was utilized to analyze projected Year 2030 development conditions on the existing circulation element roadway throughout the unincorporated area of the County. Based on the results of the traffic modeling, funding necessary to construct transportation facilities that will mitigate cumulative impacts from new development was identified. Existing roadway deficiencies will be corrected through improvement projects funded by other public funding sources, such as TransNet, gas tax and grants. Potential cumulative impacts to the region's freeways have been addressed in SANDAG's Regional Transportation Plan (RTP). This plan, which considers freeway buildout over the next 30 years, will use funds from TransNet, state and federal funding to improve freeways to projected level of service objectives in the RTP.

The County Board of Supervisors adopted the County of San Diego Traffic Impact Fee (TIF) program in April 2005. The TIF Ordinance Update was adopted by the Board of Supervisors on February 27, 2008. It should be noted that the actual traffic impact fees are subject to change as the TIF ordinance is updated annually as the fees are adjusted to reflect the engineering cost index.

Compliance with the County TIF ordinance will mitigate any cumulative impact that the project has on roadway segments and intersections located within the County's jurisdiction.

It should be noted that the Specific Plan Amendment / General Plan Amendment will require a contribution to update the County TIF program to reflect the new proposed land uses.

11.3 Mitigation Phasing

An analysis was conducted at each of the directly impacted locations to determine the number of units that could be built before the significant impact would occur and subsequent mitigation required. The Project consists of both residential and non-residential development. In order to determine the timing of when each mitigation measure is needed, the entire Project was converted to "Equivalent Dwelling Units" (EDU). The residential land use trip rate of 8 trips per dwelling unit was used to calculate EDUs. As shown in *Table 7-1*, the total Project is calculated to generate 34,124 ADT including residential and non-residential land uses. Using the residential trip rate of 8 trips per EDU, the total number of EDU's is 4,266.

Based on the Project's calculated EDU of 4,266, a trial and error exercise was conducted to determine the number of EDUs which could be built before each of the significant direct impacts would occur. **Table 11-4** summarizes the number of EDUs that may be built before each mitigation measure is required.

TABLE 11-1
SUMMARY OF SIGNIFICANT IMPACTS & MITIGATION MEASURES

Location	Impact Type	Mitigation Measure	Mitigated to Below a Significant Level? Yes/No?
Intersections			
#4. Otay Mesa Road / La Media Road (City of San Diego)	Direct & Cumulative	In order to mitigate the Project's direct and cumulative impacts to this intersection, it is recommended that the Project contribute a fairshare towards the planned improvements to this intersection as reported in the <i>Transportation Analysis for the Otay Mesa Community Plan Update</i>, Urban Systems, August 30, 2013. The study recommends providing the following lane configurations at the intersection: • Southbound movement: two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes. • Westbound movement: two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes. • Northbound movement: two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes. • Eastbound movement: two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes. Payment of the Project's fairshare towards these improvements would reduce this direct and cumulative impact to below a level of significance.	Yes
#8. Otay Mesa Road / Harvest Road (County of San Diego)	Direct & Cumulative	In order to mitigate the Project's direct impact to this Project access intersection, it is recommended that the Project signalize the intersection and provide the following lane configurations: • Southbound movement: one dedicated right turn lane with overlap phasing and a shared thru / left turn lane. • Westbound movement: one shared thru / right turn lane, one dedicated thru lane and one dedicated left turn lane. • Northbound movement: one shared thru / right turn / left turn lane. • Eastbound movement: one shared thru / right turn lane, one dedicated thru lane and two dedicated left turn lanes.	Yes

CONTINUED ON THE NEXT PAGE

TABLE 11-1
SUMMARY OF SIGNIFICANT IMPACTS & MITIGATION MEASURES

Location	Impact Type	Mitigation Measure	Mitigated to Below a Significant Level? Yes/No?
#8 (Continued). Otay Mesa Road Harvest Road (County of San Diego)	Direct & Cumulative	Since this intersection falls under Caltrans jurisdiction, a signal warrant was conducted to ensure the installation of a signal at the intersection is warranted. Based on the signal warrant included in Appendix K a signal is warranted at the intersection under Existing + Project conditions. In addition, the Project should pay the appropriate TIF amount toward the County TIF Program to mitigate the Project's cumulative impact. Implementation of these recommendations would reduce this direct and cumulative impact to below a level of significance.	
#9. Otay Mesa Road / Sanyo Road (County of San Diego)	Direct & Cumulative	In order to mitigate the Project's direct impact to this Project access intersection, it is recommended that the Project provide the following lane configurations: • Southbound movement: two dedicated right turn lanes with overlap phasing, one thru lane and one dedicated left turn lane. • Westbound movement: one shared thru / right turn lane, one dedicated thru lane and one dedicated left turn lane. • Northbound movement: one shared thru / right turn lane and one dedicated left turn lane. • Eastbound movement: one shared thru / right turn lane, one dedicated thru lane and two dedicated left turn lanes. The Project should also pay the appropriate TIF amount toward the County TIF Program to mitigate the Project's cumulative impact. Implementation of these recommendations would reduce this direct and cumulative impact to below a level of significance.	Yes

CONTINUED ON THE NEXT PAGE

TABLE 11-1
SUMMARY OF SIGNIFICANT IMPACTS & MITIGATION MEASURES

Location	Impact Type	Mitigation Measure	Mitigated to Below a Significant Level? Yes/No?
#10. Otay Mesa Road / Vann Centre Boulevard (County of San Diego)	Direct & Cumulative	In order to mitigate the Project's direct impact to this Project access intersection, it is recommended that the Project signalize the intersection and provide the following lane configurations: • Southbound movement: one dedicated right turn lane with overlap phasing and one dedicated left turn lane. • Westbound movement: one shared thru / right turn lane. • Eastbound movement: one thru lane and one dedicated left turn lane. The Project should also pay the appropriate TIF amount toward the County TIF Program to mitigate the Project's cumulative impact. Implementation of these recommendations would reduce this direct and cumulative impact to below a level of significance.	Yes
#16. Airway Road / Sanyo Avenue (City of San Diego)	Cumulative	In order to mitigate the Project's cumulative impact to this intersection, it is recommended that the Project contribute a fairshare towards the planned improvements to this intersection as reported in the <i>Transportation Analysis for the Otay Mesa Community Plan Update</i>, Urban Systems, August 30, 2013. The study recommends signalizing the intersection and providing the following lane configurations: • Southbound movement: two dedicated right turn lanes, two thru lanes and two dedicated left turn lanes. • Westbound movement: one dedicated right turn lane, two thru lanes and two dedicated left turn lanes. • Northbound movement: one dedicated right turn lane, two thru lanes and two dedicated left turn lanes. • Eastbound movement: two dedicated right turn lanes, two thru lanes and two dedicated left turn lanes. Payment of the Project's fairshare towards these improvements would reduce this cumulative impact to below a level of significance.	Yes

CONTINUED ON THE NEXT PAGE

TABLE 11-1
SUMMARY OF SIGNIFICANT IMPACTS & MITIGATION MEASURES

Location	Impact Type	Mitigation Measure	Mitigated to Below a Significant Level? Yes/No?
#17. Airway Road / Paseo de las Americas (County of San Diego)	Cumulative	Payment of the appropriate TIF amount toward the County TIF Program would reduce this cumulative impact to below a level of significance. .	Yes
#22. Siempre Viva Road / Paseo de las Americas (City of San Diego)	Cumulative	In order to mitigate the Project's cumulative impact to this intersection, it is recommended that the Project contribute a fairshare towards the planned improvements to this intersection as reported in the <i>Transportation Analysis for the Otay Mesa Community Plan Update</i>, Urban Systems, August 30, 2013. The study recommends providing the following lane configurations: • Southbound movement: two dedicated right turn lanes, one thru lane and one dedicated left turn lane. • Westbound movement: one dedicated right turn lane, two thru lanes and one dedicated left turn lane. • Northbound movement: one dedicated right turn lane, one shared thru / left turn lane and one dedicated left turn lane. • Eastbound movement: one dedicated right turn lane, three thru lanes and two dedicated left turn lanes. Payment of the Project's fairshare towards these improvements would reduce this cumulative impact to below a level of significance.	Yes
#23. Siempre Viva Road / Enrico Fermi Drive (County of San Diego)	Cumulative	Payment of the appropriate TIF amount toward the County TIF Program would reduce this cumulative impact to below a level of significance.	Yes
Street Segments			
Otay Mesa Road: Sanyo Avenue to Vann Centre Boulevard (County of San Diego)	Direct	Widening this segment of Otay Mesa Road between Sanyo Avenue and Vann Centre Boulevard along the Project frontage to 4-lanes would reduce this direct impact to below a level of significance. The Project will also be responsible for making ½ width frontage improvements along Otay Mesa Road between Harvest Road and Vann Centre Boulevard to improve the roadway to 6-lane Prime Arterial standards per the County's Centerline Ordinance.	Yes

CONTINUED ON THE NEXT PAGE

TABLE 11-1
SUMMARY OF SIGNIFICANT IMPACTS & MITIGATION MEASURES

Location	Impact Type	Mitigation Measure	Mitigated to Below a Significant Level? Yes/No?
Otay Mesa Road: Vann Centre Boulevard to Enrico Fermi Drive (County of San Diego)	Direct	This segment of Otay Mesa Road between Vann Centre Boulevard and Enrico Fermi Drive was analyzed under Existing conditions without the addition of SR 11 between SR 905 / SR 125 and Enrico Fermi Drive to the roadway network. SR 11 is currently under construction and expected to open during the fall of 2015, before completion of the East Otay Mesa Specific Plan Amendment Project. Under Year 2020 Cumulative conditions, with the addition of SR 11, a significant impact is not calculated along the segment (2 lanes provide adequate operations). Therefore, the construction of SR 11, which is fully funded, will mitigate the Project's direct impact, and no additional mitigation measures are necessary.	Yes
Enrico Fermi Drive: Otay Mesa Road to Airway Road (County of San Diego)	Cumulative	Payment of the appropriate TIF amount toward the County TIF Program would reduce this cumulative impact to below a level of significance.	Yes

TABLE 11-2
INTERSECTION POST-MITIGATION ANALYSIS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Existing + Project + Mitigation			Mitigation
			Delay ^a	LOS ^b	Delay	LOS	Delay	LOS	Δ^c	
4. Otay Mesa Road / La Media Road	Signal	AM	178.8	F	322.9	F	109.2	F	(69.6) ^d	<i>Contribute a fairshare towards the following planned improvements to this intersection:</i> <i>Southbound movement: two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes.</i> <i>Westbound Movement - two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes.</i> <i>Northbound Movement - two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes.</i> <i>Eastbound Movement - two dedicated right turn lanes, three thru lanes and two dedicated left turn lanes.</i>
		PM	61.4	E	237.8	F	61.1	E	(0.3) ^d	
8. Otay Mesa Road / Harvest Road	TWSC / Signal ^e	AM	48.0	E	>300	F	54.9	D	6.9	<i>Signalize the intersection and provide the following:</i> <i>Southbound movement - one dedicated right turn lane with overlap phasing and a shared thru / left turn lane.</i> <i>Westbound movement - one shared thru / right turn lane, one thru lane and one dedicated left turn lane.</i> <i>Northbound movement: one shared thru / right turn / left turn lane. Eastbound movement - one shared thru / right turn lane, one thru lane and two dedicated left turn lanes.</i>
		PM	11.8	B	>300	F	42.7	D	30.9	
9. Otay Mesa Road / Sanyo Road	Signal	AM	12.2	B	178.2	F	37.0	D	24.8	<i>Provide the following:</i> <i>Southbound movement - two dedicated right turn lanes with overlap phasing, one thru lane and one dedicated left turn lane. Westbound movement - one shared thru / right lane, one thru lane and one dedicated left turn lane.</i> <i>Northbound movement: one shared thru / right turn lane and one dedicated left turn lane. Eastbound movement - one shared thru / right turn lane, one thru lanes and two dedicated left turn lanes.</i>
		PM	17.6	B	170.4	F	44.8	D	27.2	

**TABLE 11-2
INTERSECTION POST-MITIGATION ANALYSIS**

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Existing + Project + Mitigation			Mitigation
			Delay ^a	LOS ^b	Delay	LOS	Delay	LOS	Δ^c	
10. Otay Mesa Road / Vann Centre Boulevard	DNE/Signal ^f	AM	-	-	>300	F	16.6	B	-	Signalize the intersection and provide the following: Southbound movement - one dedicated right turn lane with overlap phasing and one dedicated left turn lane. Westbound movement - one shared thru / right turn lane. Eastbound movement - one thru lane and one dedicated left turn lane.
		PM	-	-	>300	F	71.0	E	-	

Footnotes:

- Average delay expressed in seconds per vehicle.
- Level of Service.
- Δ denotes a decrease in delay with the addition of Project trips and proposed mitigation measures as compared to Existing conditions.
- Even though the level of service with mitigation is LOS E / F, the delay is lower than without the Project and mitigation. Therefore, the improvement fully mitigates the significant impact.
- TWSC – Two-way Stop Control. The mitigation measure proposes to signalize the intersection.
- DNE – Does Not Exist. The mitigation measure proposes to signalize the intersection.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 11-3
SEGMENT POST-MITIGATION ANALYSIS

Roadway Segment	Capacity (LOS E) ^a	Existing			Existing + Project			Existing + Project + Mitigation				
		ADT ^b	V/C ^c	LOS ^d	ADT	V/C	LOS	Capacity (LOS E) ^a	ADT	V/C	LOS	Δ ^e
Otay Mesa Road Sanyo Ave to Vann Centre Blvd	16,200	10,410	0.643	D	20,647	1.275	F	37,000	20,647	0.558	B	(0.085)

Footnotes:

- a. Capacity from City / County LOS threshold tables
- b. Average Daily Traffic
- c. Volume / Capacity
- d. Level of Service
- e. "Δ" denotes the decrease in V/C due to the mitigation measure.

TECHNICAL APPENDICES
EAST OTAY MESA SPECIFIC PLAN AMENDMENT
County of San Diego, California
December 8, 2016

LLG Ref. 3-15-2455

APPENDIX A

EXISTING INTERSECTION AND STREET SEGMENT MANUAL COUNT SHEETS

Turn Count Summary

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



Location: Otay Mesa Road @ Heritage Road

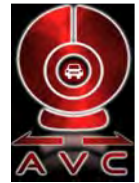
Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349





Location: Otay Mesa Road @ Heritage Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	13	7	23	15	14	8	2	3	8	22	12	5	132
7:15 AM	10	6	17	16	25	10	4	5	13	28	11	14	159
7:30 AM	19	8	21	19	23	8	7	8	7	35	34	19	208
7:45 AM	10	14	25	26	35	9	1	7	11	43	31	20	232
8:00 AM	14	4	23	29	34	10	2	17	12	51	39	50	285
8:15 AM	16	6	28	34	22	16	9	11	13	18	35	48	256
8:30 AM	22	7	27	39	26	7	5	7	15	22	26	35	238
8:45 AM	12	7	39	35	5	13	4	12	23	26	32	50	258
Total	116	59	203	213	184	81	34	70	102	245	220	241	1,768

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.91**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	64	24	117	137	87	46	20	47	63	117	132	183	1,037
PHF	0.73	0.86	0.75	0.88	0.64	0.72	0.56	0.69	0.68	0.57	0.85	0.92	0.91
Movement PHF		0.88			0.92			0.83			0.77		0.91

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	56	12	53	56	63	12	9	12	35	18	25	44	395
4:15 PM	27	19	61	51	43	6	7	15	35	13	29	50	356
4:30 PM	32	19	53	48	39	7	12	24	39	16	47	43	379
4:45 PM	51	18	61	57	35	6	15	20	43	22	36	39	403
5:00 PM	42	15	91	43	28	6	8	13	53	14	38	41	392
5:15 PM	49	21	57	38	27	12	4	13	28	11	25	45	330
5:30 PM	29	12	36	36	12	9	8	15	34	12	15	26	244
5:45 PM	38	13	45	28	17	2	8	9	22	12	16	20	230
Total	324	129	457	357	264	60	71	121	289	118	231	308	2,729

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.95**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	166	68	228	212	180	31	43	71	152	69	137	176	1533
PHF	0.74	0.895	0.934	0.93	0.714	0.646	0.717	0.74	0.884	0.784	0.729	0.88	0.95
Movement PHF		0.89			0.81			0.85			0.90		0.95

Turn Count Summary

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



Location: Otay Mesa Road @ Cactus Road

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Otay Mesa Road @ Cactus Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	0	1	0	31	9	5	0	5	4	30	1	86
7:15 AM	0	0	0	0	51	10	4	0	0	2	41	5	113
7:30 AM	2	0	1	2	42	7	5	0	5	3	50	1	118
7:45 AM	0	0	0	0	68	17	8	0	2	10	50	1	156
8:00 AM	3	0	0	0	66	11	11	0	4	7	51	5	158
8:15 AM	0	0	1	4	67	19	10	0	4	8	48	0	161
8:30 AM	0	0	1	0	69	15	15	0	2	9	45	2	158
8:45 AM	0	0	1	0	47	31	22	0	5	12	45	2	165
Total	5	0	5	6	441	119	80	0	27	55	360	17	1,115

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	3	0	3	4	249	76	58	0	15	36	189	9	642
PHF	0.25	#####	0.75	0.25	0.90	0.61	0.66	#####	0.75	0.75	0.93	0.45	0.97
Movement PHF		0.50			0.91			0.68			0.93		0.97

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	0	3	1	117	27	17	1	14	9	95	2	286
4:15 PM	0	1	1	0	89	18	18	1	10	13	58	0	209
4:30 PM	2	0	1	0	87	12	21	0	4	6	91	0	224
4:45 PM	0	0	0	0	94	15	30	0	3	9	87	4	242
5:00 PM	3	1	2	1	67	13	15	0	6	6	87	1	202
5:15 PM	0	1	1	1	66	19	25	1	10	6	82	6	218
5:30 PM	0	0	1	2	46	6	20	0	10	11	59	1	156
5:45 PM	0	0	1	0	45	9	16	0	2	4	29	0	106
Total	5	3	10	5	611	119	162	3	59	64	588	14	1,643

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.84**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	2	1	5	1	387	72	86	2	31	37	331	6	961
PHF	0.25	0.25	0.417	0.25	0.827	0.667	0.717	0.5	0.554	0.712	0.871	0.375	0.84
Movement PHF		0.67			0.79			0.90			0.88		0.84

Turn Count Summary

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



Location: Otay Mesa Road @ Britannia Boulevard

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

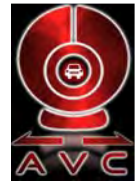
Weather: Sunny

AVC Proj No: 15-0349



Vehicular Count

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



Location: Otay Mesa Road @ Britannia Boulevard

AM Period (7:00 AM - 9:00 AM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
7:00 AM		16	15	47	24	15	24	141
7:15 AM		27	25	68	24	17	24	185
7:30 AM		30	30	64	31	14	40	209
7:45 AM		41	58	64	37	18	37	255
8:00 AM		43	42	77	40	23	41	266
8:15 AM		34	13	54	56	32	27	216
8:30 AM		38	24	70	47	40	32	251
8:45 AM		37	40	81	41	28	27	254
Total		266	247	525	300	187	252	1,777

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.93**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		156	137	265	180	113	137	988
PHF		0.91	0.59	0.86	0.80	0.71	0.84	0.93
Movement PHF		0.74		0.95		0.87		0.93

PM Period (4:00 PM - 6:00 PM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
4:00 PM		77	109	34	65	52	53	390
4:15 PM		60	42	51	49	59	31	292
4:30 PM		70	71	38	40	58	55	332
4:45 PM		53	52	35	45	63	54	302
5:00 PM		43	74	44	38	57	56	312
5:15 PM		50	49	41	28	58	40	266
5:30 PM		36	69	22	26	35	30	218
5:45 PM		29	41	16	25	43	43	197
Total		418	507	281	316	425	362	2,309

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.84**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		260	274	158	199	232	193	1316
PHF		0.844	0.628	0.775	0.765	0.921	0.877	0.84
Movement PHF		0.72		0.89		0.91		0.84

Turn Count Summary

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



Location: Otay Mesa Road @ Le Media Road

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Otay Mesa Road @ Le Media Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	3	10	5	4	27	58	88	23	10	11	36	2	277
7:15 AM	4	19	7	6	37	89	150	24	12	18	56	5	427
7:30 AM	5	13	8	6	75	101	184	25	13	14	40	13	497
7:45 AM	2	11	5	7	43	67	200	24	6	15	29	6	415
8:00 AM	4	22	3	14	34	82	143	11	4	17	50	12	396
8:15 AM	5	19	3	8	38	72	94	20	7	23	43	6	338
8:30 AM	7	16	4	7	43	66	71	22	12	18	38	13	317
8:45 AM	4	25	11	10	32	77	49	33	13	24	26	18	322
Total	34	135	46	62	329	612	979	182	77	140	318	75	2,989

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.87**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	15	65	23	33	189	339	677	84	35	64	175	36	1,735
PHF	0.75	0.74	0.72	0.59	0.63	0.84	0.85	0.84	0.67	0.89	0.78	0.69	0.87
Movement PHF		0.86			0.77			0.87			0.87		0.87

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	9	50	8	16	113	95	72	15	21	25	39	11	474
4:15 PM	4	24	10	14	64	126	47	19	20	37	40	6	411
4:30 PM	13	43	11	13	53	94	55	25	19	33	48	8	415
4:45 PM	5	26	7	9	61	98	97	21	14	36	38	13	425
5:00 PM	5	46	8	6	79	114	79	21	10	45	44	10	467
5:15 PM	5	37	7	8	53	108	73	15	6	25	39	16	392
5:30 PM	3	33	4	12	40	83	63	18	10	21	30	12	329
5:45 PM	3	25	5	10	23	76	49	19	6	21	31	10	278
Total	47	284	60	88	486	794	535	153	106	243	309	86	3,191

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.91**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	31	143	36	52	291	413	271	80	74	131	165	38	1725
PHF	0.60	0.715	0.818	0.813	0.644	0.819	0.698	0.8	0.881	0.885	0.859	0.731	0.91
Movement PHF		0.78			0.84			0.80			0.94		0.91

Turn Count Summary

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



Location: Otay Mesa Road @ Piper Ranch Road

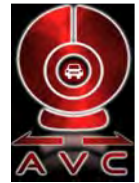
Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349





Location: Otay Mesa Road @ Piper Ranch Road

AM Period (7:00 AM - 9:00 AM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
7:00 AM	15	12	20	74		94	35	250
7:15 AM	20	15	12	112		166	47	372
7:30 AM	16	16	18	166		203	29	448
7:45 AM	18	22	25	99		184	50	398
8:00 AM	32	15	19	98		138	58	360
8:15 AM	32	13	30	86		100	40	301
8:30 AM	24	14	15	92		79	34	258
8:45 AM	19	13	21	100		49	37	239
Total	176	120	160	827		1,013	330	2,626

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.88**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	86	68	74	475		691	184	1,578
PHF	0.67	0.77	0.74	0.72		0.85	0.79	0.88
Movement PHF		0.82		0.75		0.93		0.88

PM Period (4:00 PM - 6:00 PM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
4:00 PM	81	31	31	143		93	26	405
4:15 PM	26	19	23	178		79	18	343
4:30 PM	34	8	36	126		93	21	318
4:45 PM	48	25	32	120		111	31	367
5:00 PM	108	9	22	91		108	23	361
5:15 PM	34	17	22	135		96	23	327
5:30 PM	32	21	21	103		79	18	274
5:45 PM	31	16	18	78		72	13	228
Total	394	146	205	974		731	173	2,623

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.88**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	189	83	122	567		376	96	1433
PHF	0.58	0.669	0.847	0.796		0.847	0.774	0.88
Movement PHF		0.61		0.86		0.83		0.88

Turn Count Summary

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



Location: Otay Mesa Road @ SR 125 SB Ramps

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Otay Mesa Road @ SR 125 SB Ramps

AM Period (7:00 AM - 9:00 AM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
7:00 AM	62	60	0	32		106	0	260
7:15 AM	99	74	0	25		181	0	379
7:30 AM	133	166	0	51		219	0	569
7:45 AM	77	110	0	47		206	0	440
8:00 AM	73	106	0	44		153	0	376
8:15 AM	73	76	0	43		113	0	305
8:30 AM	58	74	0	49		93	0	274
8:45 AM	63	66	0	58		62	0	249
Total	638	732	0	349		1,133	0	2,852

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.78**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	382	456	0	167		759	0	1,764
PHF	0.72	0.69	#####	0.82		0.87	#####	0.78
Movement PHF		0.70		0.82		0.87		0.78

PM Period (4:00 PM - 6:00 PM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
4:00 PM	22	13	0	152		124	0	311
4:15 PM	76	29	0	125		98	0	328
4:30 PM	13	23	0	149		101	0	286
4:45 PM	35	28	0	117		136	0	316
5:00 PM	29	17	0	84		117	0	247
5:15 PM	76	22	0	81		113	0	292
5:30 PM	39	22	0	85		100	0	246
5:45 PM	46	14	0	50		88	0	198
Total	336	168	0	843		877	0	2,224

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.95**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	146	93	0	543		459	0	1241
PHF	0.48	0.802	#####	0.893		0.844	#####	0.95
Movement PHF		0.57		0.89		0.84		0.95

Turn Count Summary

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



Location: Otay Mesa Road @ SR 125 NB Ramps

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Otay Mesa Road @ SR 125 NB Ramps

AM Period (7:00 AM - 9:00 AM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
7:00 AM	0	0	19	32		134	32	217
7:15 AM	0	0	14	25		221	34	294
7:30 AM	0	0	13	50		342	43	448
7:45 AM	0	0	23	47		265	51	386
8:00 AM	0	0	16	43		223	36	318
8:15 AM	0	0	15	43		156	33	247
8:30 AM	0	0	18	49		138	29	234
8:45 AM	0	0	28	57		103	25	213
Total	0	0	146	346		1,582	283	2,357

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.81**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	0	0	66	165		1,051	164	1,446
PHF	#####	#####	0.72	0.83		0.77	0.80	0.81
Movement PHF	#DIV/0!			0.83		0.79		0.81

PM Period (4:00 PM - 6:00 PM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
4:00 PM	0	0	84	152		54	83	373
4:15 PM	0	0	93	125		58	69	345
4:30 PM	0	0	104	149		46	78	377
4:45 PM	0	0	55	117		84	80	336
5:00 PM	0	0	78	84		50	84	296
5:15 PM	0	0	47	81		58	77	263
5:30 PM	0	0	53	85		61	61	260
5:45 PM	0	0	54	50		41	61	206
Total	0	0	568	843		452	593	2,456

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.95**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	0	0	336	543		242	310	1431
PHF	#####	#####	0.808	0.893		0.72	0.934	0.95
Movement PHF	#DIV/0!			0.87		0.84		0.95

Turn Count Summary

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



Location: Otay Mesa Road @ Harvest Road

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Otay Mesa Road @ Harvest Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	0	0	0	51	0	0	0	0	1	131	2	185
7:15 AM	0	0	0	0	39	0	0	0	0	1	219	1	260
7:30 AM	0	0	0	0	63	0	0	0	0	0	340	2	405
7:45 AM	2	0	0	1	68	0	0	0	0	0	265	0	336
8:00 AM	1	0	1	0	57	0	0	0	1	0	222	1	283
8:15 AM	0	0	0	1	58	0	0	0	0	0	154	2	215
8:30 AM	1	0	1	0	66	0	0	0	0	1	136	1	206
8:45 AM	1	0	0	0	84	0	0	0	0	0	102	1	188
Total	5	0	2	2	486	0	0	0	1	3	1,569	10	2,078

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.79**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	3	0	1	1	227	0	0	0	1	1,046	4		1,284
PHF	0.38	#####	0.25	0.25	0.83	#####	#####	#####	0.25	0.25	0.77	0.50	0.79
Movement PHF		0.50			0.83			0.25			0.77		0.79

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	1	0	0	0	235	0	0	0	0	0	53	1	290
4:15 PM	2	0	0	0	216	0	0	0	0	0	57	1	276
4:30 PM	2	0	0	0	251	0	0	0	0	0	44	2	299
4:45 PM	3	0	0	0	169	0	0	0	0	0	83	1	256
5:00 PM	1	0	2	1	161	0	0	0	0	0	49	1	215
5:15 PM	0	0	0	0	128	0	0	0	0	0	57	1	186
5:30 PM	2	0	0	1	136	0	0	0	0	0	61	0	200
5:45 PM	2	0	0	0	102	0	0	0	0	0	39	2	145
Total	13	0	2	2	1,398	0	0	0	0	0	443	9	1,867

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.94**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	8	0	0	0	871	0	0	0	0	0	237	5	1121
PHF	0.67	#####	#####	#####	0.868	#####	#####	#####	#####	#####	0.714	0.625	0.94
Movement PHF		0.67			0.87			#DIV/0!			0.72		0.94

Turn Count Summary

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



Location: Otay Mesa Road @ Sanyo Avenue

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Vehicular Count

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



Location: Otay Mesa Road @ Sanyo Avenue

AM Period (7:00 AM - 9:00 AM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
7:00 AM		25	7	2	26	42	89	191
7:15 AM		17	5	0	22	65	154	263
7:30 AM		46	0	0	17	94	246	403
7:45 AM		42	1	4	27	92	173	339
8:00 AM		37	1	4	20	94	129	285
8:15 AM		33	5	1	26	94	60	219
8:30 AM		39	2	8	27	84	53	213
8:45 AM		42	4	0	42	68	34	190
Total		281	25	19	207	633	938	2,103

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.80**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		142	7	8	86	345	702	1,290
PHF		0.77	0.35	0.50	0.80	0.92	0.71	0.80
Movement PHF		0.81		0.76		0.77		0.80

PM Period (4:00 PM - 6:00 PM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
4:00 PM		167	3	2	68	39	14	293
4:15 PM		151	9	1	65	36	21	283
4:30 PM		164	3	1	87	23	21	299
4:45 PM		105	1	0	64	43	40	253
5:00 PM		82	2	0	80	33	18	215
5:15 PM		67	3	0	61	40	17	188
5:30 PM		55	4	0	82	22	39	202
5:45 PM		54	4	0	48	26	13	145
Total		845	29	4	555	262	183	1,878

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.94**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		587	16	4	284	141	96	1128
PHF		0.879	0.444	0.5	0.816	0.82	0.6	0.94
Movement PHF		0.89		0.82		0.71		0.94

Turn Count Summary

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



Location: Otay Mesa Road @ Enrico Fermi Drive

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Vehicular Count

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



Location: Otay Mesa Road @ Enrico Fermi Drive

AM Period (7:00 AM - 9:00 AM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
7:00 AM		31	5	10	2	6	108	162
7:15 AM		20	3	11	2	5	154	195
7:30 AM		45	3	11	6	10	215	290
7:45 AM		42	2	15	6	10	159	234
8:00 AM		26	2	12	6	16	99	161
8:15 AM		32	4	7	7	10	73	133
8:30 AM		25	0	11	4	6	74	120
8:45 AM		44	0	12	8	6	46	116
Total		265	19	89	41	69	928	1,411

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.76**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		138	13	47	16	31	636	881
PHF		0.77	0.65	0.78	0.67	0.78	0.74	0.76
Movement PHF		0.79		0.75		0.74		0.76

PM Period (4:00 PM - 6:00 PM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
4:00 PM		193	8	5	11	4	23	244
4:15 PM		129	9	7	17	6	13	181
4:30 PM		168	6	6	11	5	21	217
4:45 PM		80	7	8	11	0	19	125
5:00 PM		79	1	6	12	5	18	121
5:15 PM		46	3	3	13	4	34	103
5:30 PM		49	5	5	12	2	42	115
5:45 PM		29	4	8	14	2	17	74
Total		773	43	48	101	28	187	1,180

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.79**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		570	30	26	50	15	76	767
PHF		0.738	0.833	0.813	0.735	0.625	0.826	0.79
Movement PHF		0.75		0.79		0.84		0.79

Turn Count Summary

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



Location: SR 905 WB Ramps @ Britannia Boulevard

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: SR 905 WB Ramps @ Britannia Boulevard

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	4	26	0	23	1	25	0	48	34	0	0	0	161
7:15 AM	9	33	0	22	0	24	0	70	23	0	0	0	181
7:30 AM	1	43	0	12	0	15	0	83	7	0	0	0	161
7:45 AM	5	71	0	44	0	24	0	57	27	0	0	0	228
8:00 AM	12	53	0	46	2	31	0	71	30	0	0	0	245
8:15 AM	5	40	0	56	1	39	0	54	27	0	0	0	222
8:30 AM	10	54	0	50	0	36	0	67	32	0	0	0	249
8:45 AM	5	63	0	64	1	30	0	58	40	0	0	0	261
Total	51	383	0	317	5	224	0	508	220	0	0	0	1,708

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.94**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	32	210	0	216	4	136	0	250	129	0	0	0	977
PHF	0.67	0.83	#####	0.84	0.50	0.87	#####	0.88	0.81	#####	#####	#####	0.94
Movement PHF		0.89			0.93			0.94		#DIV/0!			0.94

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	73	88	0	21	1	17	0	78	188	0	0	0	466
4:15 PM	46	55	0	27	0	25	0	73	126	0	0	0	352
4:30 PM	72	57	0	34	1	12	0	44	116	0	0	0	336
4:45 PM	46	69	0	28	2	8	0	52	89	0	0	0	294
5:00 PM	62	69	0	21	1	13	0	61	134	0	0	0	361
5:15 PM	40	67	0	18	0	14	0	51	140	0	0	0	330
5:30 PM	46	58	0	19	0	15	0	29	77	0	0	0	244
5:45 PM	28	56	0	14	0	11	0	27	79	0	0	0	215
Total	413	519	0	182	5	115	0	415	949	0	0	0	2,598

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.78**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	237	269	0	110	4	62	0	247	519	0	0	0	1448
PHF	0.81	0.764	#####	0.809	0.5	0.62	#####	0.792	0.69	#####	#####	#####	0.78
Movement PHF		0.79			0.85			0.72		#DIV/0!			0.78

Turn Count Summary

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



Location: SR 905 EB Ramps @ Britannia Boulevard

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: SR 905 EB Ramps @ Britannia Boulevard

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	46	5	0	0	0	10	50	0	131	1	32	275
7:15 AM	0	46	11	0	0	0	12	36	0	136	0	57	298
7:30 AM	0	48	6	0	0	0	16	44	0	102	0	47	263
7:45 AM	0	77	12	0	0	0	10	44	0	186	2	46	377
8:00 AM	0	70	14	0	0	0	12	50	0	153	0	51	350
8:15 AM	0	69	10	0	0	0	8	48	0	142	0	33	310
8:30 AM	0	74	16	0	0	0	8	69	0	140	0	30	337
8:45 AM	0	77	16	0	0	0	14	63	0	145	0	35	350
Total	0	507	90	0	0	0	90	404	0	1,135	3	331	2,560

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.91**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	290	52	0	0	0	38	211	0	621	2	160	1,374
PHF	#####	0.94	0.81	#####	#####	#####	0.79	0.76	#####	0.83	0.25	0.78	0.91
Movement PHF		0.95		#DIV/0!				0.81			0.84		0.91

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	59	46	0	0	0	46	236	0	55	1	30	473
4:15 PM	0	58	22	0	0	0	31	170	0	62	0	29	372
4:30 PM	0	34	35	0	0	0	26	143	0	44	0	17	299
4:45 PM	0	40	37	0	0	0	29	118	0	59	0	23	306
5:00 PM	0	31	51	0	0	0	45	176	0	58	0	19	380
5:15 PM	0	26	55	0	0	0	19	164	0	38	1	27	330
5:30 PM	0	39	34	0	0	0	20	99	0	30	0	7	229
5:45 PM	0	39	28	0	0	0	11	98	0	51	0	8	235
Total	0	326	308	0	0	0	227	1,204	0	397	2	160	2,624

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.77**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	191	140	0	0	0	132	667	0	220	1	99	1450
PHF	#####	0.809	0.761	#####	#####	#####	0.717	0.707	#####	0.887	0.25	0.825	0.77
Movement PHF		0.79		#DIV/0!				0.71			0.88		0.77

Turn Count Summary

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



Location: SR 905 WB Ramps @ La Media Road

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: SR 905 WB Ramps @ La Media Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	3	89	0	28	9	1	15	110	17	13	0	0	285
7:15 AM	2	92	0	18	11	4	18	198	33	14	0	0	390
7:30 AM	8	134	0	31	9	1	14	212	27	4	0	0	440
7:45 AM	7	156	0	32	10	2	32	216	33	7	0	0	495
8:00 AM	6	125	0	6	3	1	20	173	23	13	0	0	370
8:15 AM	5	107	0	0	0	1	33	131	18	14	1	2	312
8:30 AM	3	114	0	0	1	2	34	123	26	6	0	1	310
8:45 AM	4	120	0	1	0	0	35	89	25	17	0	0	291
Total	38	937	0	116	43	12	201	1,252	202	88	1	3	2,893

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.86**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	23	507	0	87	33	8	84	799	116	38	0	0	1,695
PHF	0.72	0.81	#####	0.68	0.75	0.50	0.66	0.92	0.88	0.68	#####	#####	0.86
Movement PHF		0.81			0.73			0.89			0.68		0.86

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	4	158	0	21	6	4	61	106	22	17	0	2	401
4:15 PM	1	192	0	20	11	3	44	67	22	26	0	0	386
4:30 PM	4	176	0	19	5	4	78	60	14	24	2	0	386
4:45 PM	5	161	0	31	5	3	64	116	30	31	3	0	449
5:00 PM	2	199	0	23	7	9	80	109	19	8	1	0	457
5:15 PM	3	186	0	19	3	6	73	100	10	9	0	4	413
5:30 PM	1	143	0	19	8	3	44	80	17	17	0	1	333
5:45 PM	1	124	0	14	5	6	16	57	12	15	0	1	251
Total	21	1339	0	166	50	38	460	695	146	147	6	8	3,076

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.93**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	14	722	0	92	20	22	295	385	73	72	6	4	1705
PHF	0.70	0.907	#####	0.742	0.714	0.611	0.922	0.83	0.608	0.581	0.5	0.25	0.93
Movement PHF		0.92			0.86			0.90			0.60		0.93

Turn Count Summary

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



Location: SR 905 EB Ramps @ La Media Road

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: SR 905 EB Ramps @ La Media Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	29	23	0	0	0	0	0	25	5	62	0	117	261
7:15 AM	23	34	0	0	0	0	0	48	1	90	0	201	397
7:30 AM	17	34	0	0	0	0	0	27	4	89	0	226	397
7:45 AM	25	52	0	0	0	0	0	51	0	149	0	230	507
8:00 AM	32	62	0	0	0	0	0	57	2	79	0	159	391
8:15 AM	38	46	0	0	0	0	0	40	2	61	0	142	329
8:30 AM	32	53	0	0	0	0	0	72	3	57	0	111	328
8:45 AM	25	46	0	0	0	0	0	52	0	66	0	97	286
Total	221	350	0	0	0	0	0	372	17	653	0	1,283	2,896

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.83**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	97	182	0	0	0	0	0	183	7	407	0	816	1,692
PHF	0.76	0.73	#####	#####	#####	#####	#####	0.80	0.44	0.68	#####	0.89	0.83
Movement PHF		0.74		#DIV/0!				0.81			0.81		0.83

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	44	47	0	0	0	0	0	116	7	44	0	73	331
4:15 PM	66	47	0	0	0	0	0	83	8	53	0	50	307
4:30 PM	62	50	0	0	0	0	0	100	10	46	0	52	320
4:45 PM	56	63	0	0	0	0	0	141	1	39	0	69	369
5:00 PM	61	45	0	0	0	0	0	124	14	38	0	84	366
5:15 PM	52	46	0	0	0	0	0	128	3	32	0	55	316
5:30 PM	46	51	0	0	0	0	0	72	9	26	0	69	273
5:45 PM	36	32	0	0	0	0	0	40	4	33	0	45	190
Total	423	381	0	0	0	0	0	804	56	311	0	497	2,472

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.93**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	231	204	0	0	0	0	0	493	28	155	0	260	1371
PHF	0.93	0.81	#####	#####	#####	#####	#####	0.874	0.5	0.842	#####	0.774	0.93
Movement PHF		0.91		#DIV/0!				0.92			0.85		0.93

Turn Count Summary

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



Location: Airway Road @ Sanyo Avenue

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Airway Road @ Sanyo Avenue

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	7	23	9	11	3	0	1	14	3	10	3	10	94
7:15 AM	12	25	5	6	19	0	0	11	5	12	7	8	110
7:30 AM	15	58	8	11	8	0	2	9	7	3	11	7	139
7:45 AM	22	47	12	7	13	1	2	9	3	14	15	14	159
8:00 AM	23	41	13	11	16	2	2	12	4	13	14	4	155
8:15 AM	8	43	11	16	19	0	1	12	4	12	12	3	141
8:30 AM	11	47	8	15	16	1	0	8	6	10	11	5	138
8:45 AM	14	30	11	27	16	1	2	8	7	7	18	7	148
Total	112	314	77	104	110	5	10	83	39	81	91	58	1,084

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

Intersection PHF : **0.93**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	68	189	44	45	56	3	7	42	18	42	52	28	594
PHF	0.74	0.81	0.85	0.70	0.74	0.38	0.88	0.88	0.64	0.75	0.87	0.50	0.93
Movement PHF		0.93			0.74			0.93			0.71		0.93

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	16	26	7	13	46	4	4	39	15	7	19	14	210
4:15 PM	15	15	10	21	28	1	1	20	16	10	18	9	164
4:30 PM	12	18	8	29	26	3	1	27	6	8	17	19	174
4:45 PM	8	20	12	20	41	0	1	28	11	10	10	7	168
5:00 PM	7	10	8	19	38	2	1	22	11	14	17	14	163
5:15 PM	6	12	8	21	22	1	0	28	11	6	19	11	145
5:30 PM	5	25	9	16	29	0	0	21	11	1	8	15	140
5:45 PM	4	10	8	16	24	0	1	18	6	0	9	6	102
Total	73	136	70	155	254	11	9	203	87	56	117	95	1,266

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.85**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	51	79	37	83	141	8	7	114	48	35	64	49	716
PHF	0.80	0.76	0.771	0.716	0.766	0.5	0.438	0.731	0.75	0.875	0.842	0.645	0.85
Movement PHF		0.85			0.92			0.73			0.84		0.85

Turn Count Summary

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



Location: Airway Road @ Paseo De Las Americas

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Vehicular Count

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



Location: Airway Road @ Paseo De Las Americas

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	1	2	0	0	3	2	5	8	8	2	9	4	44
7:15 AM	5	2	0	1	12	7	1	6	8	2	11	3	58
7:30 AM	0	3	0	0	6	4	7	5	12	1	8	7	53
7:45 AM	0	0	0	0	14	2	1	6	7	3	15	3	51
8:00 AM	1	5	0	1	15	2	4	7	13	1	11	4	64
8:15 AM	1	4	0	0	24	4	3	4	10	4	12	9	75
8:30 AM	4	17	0	1	13	7	4	10	13	1	10	4	84
8:45 AM	6	23	1	0	25	4	9	7	11	4	10	1	101
Total	18	56	1	3	112	32	34	53	82	18	86	35	530

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.80**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	12	49	1	2	77	17	20	28	47	10	43	18	324
PHF	0.50	0.53	0.25	0.50	0.77	0.61	0.56	0.70	0.90	0.63	0.90	0.50	0.80
Movement PHF		0.52			0.83			0.88			0.71		0.80

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	2	3	1	4	40	5	4	3	21	3	13	8	107
4:15 PM	1	5	0	2	28	8	5	0	19	3	14	8	93
4:30 PM	2	3	0	4	38	4	2	8	13	0	17	3	94
4:45 PM	4	17	1	5	31	8	2	13	26	9	15	10	141
5:00 PM	0	9	0	3	33	10	5	7	26	7	10	11	121
5:15 PM	1	7	3	0	26	5	4	6	12	10	11	10	95
5:30 PM	2	3	0	1	23	4	2	5	20	2	17	6	85
5:45 PM	2	3	0	1	22	4	4	3	16	1	4	6	66
Total	14	50	5	20	241	48	28	45	153	35	101	62	802

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.80**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	7	36	4	12	128	27	13	34	77	26	53	34	451
PHF	0.44	0.529	0.333	0.6	0.842	0.675	0.65	0.654	0.74	0.65	0.779	0.773	0.80
Movement PHF		0.53			0.91			0.76			0.83		0.80

Turn Count Summary

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



Location: Airway Road @ Enrico Fermi Drive

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Airway Road @ Enrico Fermi Drive

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	5	0	0	1	1	0	14	4	1	0	2	28
7:15 AM	2	5	0	1	4	1	1	17	12	1	0	1	45
7:30 AM	2	5	2	0	2	0	0	12	4	1	0	2	30
7:45 AM	0	11	0	0	1	0	2	23	13	1	2	2	55
8:00 AM	4	13	0	0	1	1	1	23	7	2	1	3	56
8:15 AM	4	11	0	1	1	1	7	11	15	4	1	4	60
8:30 AM	7	8	0	0	0	0	2	15	7	6	0	3	48
8:45 AM	2	13	1	0	3	3	5	17	9	5	0	3	61
Total	21	71	3	2	13	7	18	132	71	21	4	20	383

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.92**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	17	45	1	1	5	5	15	66	38	17	2	13	225
PHF	0.61	0.87	0.25	0.25	0.42	0.42	0.54	0.72	0.63	0.71	0.50	0.81	0.92
Movement PHF		0.93			0.46			0.90			0.89		0.92

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	7	13	0	0	5	1	1	15	16	5	2	4	69
4:15 PM	4	4	0	1	2	1	1	16	12	1	1	7	50
4:30 PM	10	16	1	1	1	1	3	28	20	1	0	6	88
4:45 PM	9	8	1	0	3	1	1	13	15	1	0	4	56
5:00 PM	11	12	1	1	4	1	2	23	12	1	0	2	70
5:15 PM	5	13	0	0	3	1	2	15	7	1	1	4	52
5:30 PM	4	7	0	0	1	0	0	16	10	1	0	5	44
5:45 PM	4	9	0	0	3	0	2	16	13	1	1	0	49
Total	54	82	3	3	22	6	12	142	105	12	5	32	478

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.76**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	35	49	3	2	11	4	8	79	54	4	1	16	266
PHF	0.80	0.766	0.75	0.5	0.688	1	0.667	0.705	0.675	1	0.25	0.667	0.76
Movement PHF		0.81			0.71			0.69			0.75		0.76

Turn Count Summary

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



Location: EB Siempre Viva Road @ SR 905 SB Ramp

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Vehicular Count

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



Location: EB Siempre Viva Road @ SR 905 SB Ramp

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	0	0	0	98	23	89	0	0	17	49	0	276
7:15 AM	0	0	0	0	117	18	103	0	0	13	52	0	303
7:30 AM	0	0	0	0	185	24	118	0	0	16	54	0	397
7:45 AM	0	0	0	0	218	40	160	0	0	30	57	0	505
8:00 AM	0	0	0	0	194	29	128	0	0	26	66	0	443
8:15 AM	0	0	0	0	178	18	122	0	0	16	65	0	399
8:30 AM	0	0	0	0	160	30	123	0	0	14	75	0	402
8:45 AM	0	0	0	0	201	22	123	0	0	15	68	0	429
Total	0	0	0	0	1,351	204	966	0	0	147	486	0	3,154

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.87**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	0	0	0	750	117	533	0	0	86	263	0	1,749
PHF	#####	#####	#####	#####	0.86	0.73	0.83	#####	#####	0.72	0.88	#####	0.87
Movement PHF	#DIV/0!				0.84			0.83			0.95		0.87

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	0	0	0	183	36	67	0	0	46	121	0	453
4:15 PM	0	0	0	0	154	59	69	0	0	53	129	0	464
4:30 PM	0	0	0	0	171	40	70	0	0	53	176	0	510
4:45 PM	0	0	0	0	132	53	84	0	0	60	121	0	450
5:00 PM	0	0	0	0	154	51	66	0	0	70	206	0	547
5:15 PM	0	0	0	0	169	49	87	0	0	61	140	0	506
5:30 PM	0	0	0	0	125	58	59	0	0	64	94	0	400
5:45 PM	0	0	0	0	158	35	56	0	0	51	109	0	409
Total	0	0	0	0	1,246	381	558	0	0	458	1,096	0	3,739

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.92**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	0	0	0	626	193	307	0	0	244	643	0	2013
PHF	#####	#####	#####	#####	0.915	0.91	0.882	#####	#####	0.871	0.78	#####	0.92
Movement PHF	#DIV/0!				0.94			0.88			0.80		0.92

Turn Count Summary

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



Location: WB Siempre Viva Road @ SR 905 SB Ramp

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Vehicular Count

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



Location: WB Siempre Viva Road @ SR 905 SB Ramp

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	42	0	0	0	79	0	0	0	0	0	138	0	259
7:15 AM	63	0	0	0	72	0	0	0	0	0	155	0	290
7:30 AM	87	0	0	0	122	0	0	0	0	0	172	0	381
7:45 AM	91	0	0	0	167	0	0	0	0	0	217	0	475
8:00 AM	85	0	0	0	138	0	0	0	0	0	194	0	417
8:15 AM	65	0	0	0	131	0	0	0	0	0	187	0	383
8:30 AM	53	0	0	0	137	0	0	0	0	0	199	0	389
8:45 AM	82	0	0	0	141	0	0	0	0	0	191	0	414
Total	568	0	0	0	987	0	0	0	0	0	1,453	0	3,008

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.88**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	294	0	0	0	573	0	0	0	0	0	797	0	1,664
PHF	0.81	#####	#####	#####	0.86	#####	#####	#####	#####	#####	0.92	#####	0.88
Movement PHF		0.81			0.86		#DIV/0!				0.92		0.88

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	88	0	0	0	131	0	0	0	0	0	188	0	407
4:15 PM	71	0	0	0	142	0	0	0	0	0	198	0	411
4:30 PM	60	0	0	0	151	0	0	0	0	0	246	0	457
4:45 PM	49	0	0	0	136	0	0	0	0	0	205	0	390
5:00 PM	61	0	0	0	144	0	0	0	0	0	272	0	477
5:15 PM	55	0	0	0	163	0	0	0	0	0	227	0	445
5:30 PM	57	0	0	0	126	0	0	0	0	0	153	0	336
5:45 PM	59	0	0	0	134	0	0	0	0	0	165	0	358
Total	500	0	0	0	1,127	0	0	0	0	0	1,654	0	3,281

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.93**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	225	0	0	0	594	0	0	0	0	0	950	0	1769
PHF	0.92	#####	#####	#####	0.911	#####	#####	#####	#####	#####	0.873	#####	0.93
Movement PHF		0.92			0.91		#DIV/0!				0.87		0.93

Turn Count Summary

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



Location: Siempre Viva Road @ SR 905 NB Ramp

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

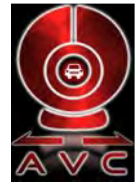
Weather: Sunny

AVC Proj No: 15-0349



Vehicular Count

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



Location: Siempre Viva Road @ SR 905 NB Ramp

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	0	0	83	45	0	64	1	34	0	104	34	365
7:15 AM	0	0	0	85	50	0	71	0	22	0	134	21	383
7:30 AM	0	0	0	87	72	0	66	1	50	0	150	22	448
7:45 AM	0	0	0	75	99	0	60	1	68	0	196	21	520
8:00 AM	0	0	0	85	70	0	72	1	68	0	163	31	490
8:15 AM	0	0	0	76	59	0	108	0	72	0	162	25	502
8:30 AM	0	0	0	119	70	0	64	0	67	0	157	42	519
8:45 AM	0	0	0	119	84	0	67	0	57	0	162	29	518
Total	0	0	0	729	549	0	572	4	438	0	1,228	225	3,745

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	0	0	355	298	0	304	2	275	0	678	119	2,031
PHF	#####	#####	#####	0.75	0.75	#####	0.70	0.50	0.95	#####	0.86	0.71	0.98
Movement PHF	#DIV/0!			0.86			0.81			0.92			0.98

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	0	0	146	110	0	47	0	21	0	129	59	512
4:15 PM	0	0	0	140	125	0	74	0	17	0	136	62	554
4:30 PM	0	0	0	143	135	0	55	0	16	0	140	106	595
4:45 PM	0	0	0	118	115	0	52	0	21	0	128	77	511
5:00 PM	0	0	0	152	126	0	61	0	18	0	151	121	629
5:15 PM	0	0	0	140	140	0	52	1	23	0	151	76	583
5:30 PM	0	0	0	210	108	0	44	0	18	0	82	71	533
5:45 PM	0	0	0	171	115	0	42	0	19	0	100	65	512
Total	0	0	0	1,220	974	0	427	1	153	0	1,017	637	4,429

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.92**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	0	0	553	516	0	220	1	78	0	570	380	2318
PHF	#####	#####	#####	0.91	0.921	#####	0.902	0.25	0.848	#####	0.944	0.785	0.92
Movement PHF	#DIV/0!			0.95			0.95			0.87			0.92

Turn Count Summary

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



Location: Siempre Viva Road @ Paseo De Las Americas

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Siemre Viva Road @ Paseo De Las Americas

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	16	13	1	0	85	0	1	10	22	23	22	31	224
7:15 AM	18	12	1	0	111	0	1	5	20	24	34	36	262
7:30 AM	17	21	3	2	125	1	0	15	25	25	29	47	310
7:45 AM	15	36	2	0	132	3	0	13	21	30	46	37	335
8:00 AM	12	12	1	1	106	1	1	10	33	41	53	52	323
8:15 AM	11	23	1	3	111	0	1	13	28	42	59	40	332
8:30 AM	23	20	1	1	175	4	0	14	32	38	35	38	381
8:45 AM	27	26	0	2	144	2	0	23	51	34	42	45	396
Total	139	163	10	9	989	11	4	103	232	257	320	326	2,563

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.90**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	73	81	3	7	536	7	2	60	144	155	189	175	1,432
PHF	0.68	0.78	0.75	0.58	0.77	0.44	0.50	0.65	0.71	0.92	0.80	0.84	0.90
Movement PHF		0.74			0.76			0.70			0.89		0.90

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	21	24	0	3	146	8	1	54	102	37	37	38	471
4:15 PM	31	13	2	3	179	3	1	42	94	33	41	29	471
4:30 PM	26	15	6	1	155	4	4	26	68	31	24	24	384
4:45 PM	29	23	0	3	124	2	3	27	67	25	27	32	362
5:00 PM	42	12	1	1	140	3	3	19	81	22	28	29	381
5:15 PM	33	17	1	2	152	7	6	18	74	29	23	29	391
5:30 PM	24	12	0	1	155	4	0	22	48	29	21	33	349
5:45 PM	17	9	0	3	136	7	3	16	48	18	19	13	289
Total	223	125	10	17	1,187	38	21	224	582	224	220	227	3,098

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.90**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	107	75	8	10	604	17	9	149	331	126	129	123	1688
PHF	0.86	0.781	0.333	0.833	0.844	0.531	0.563	0.69	0.811	0.851	0.787	0.809	0.90
Movement PHF		0.91			0.85			0.78			0.84		0.90

Turn Count Summary

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



Location: Siempre Viva Road @ Enrico Fermi Drive

Date of Count: Thursday, May 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0349



Location: Siemre Viva Road @ Enrico Fermi Drive

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	2	3	0	1	3	0	0	8	10	1	2	10	40
7:15 AM	2	1	1	3	7	1	0	10	25	0	1	21	72
7:30 AM	4	2	1	3	3	0	0	10	33	1	0	10	67
7:45 AM	6	7	1	5	7	0	0	19	39	0	2	15	101
8:00 AM	7	4	0	3	9	0	0	18	33	4	0	13	91
8:15 AM	5	5	1	0	8	0	0	21	33	4	4	16	97
8:30 AM	3	9	2	2	5	0	0	14	37	1	3	13	89
8:45 AM	8	8	3	5	5	0	0	20	37	6	4	8	104
Total	37	39	9	22	47	1	0	120	247	17	16	106	661

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.92**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	23	26	6	10	27	0	0	73	140	15	11	50	381
PHF	0.72	0.72	0.50	0.50	0.75	#####	#####	0.87	0.95	0.63	0.69	0.78	0.92
Movement PHF		0.72			0.77			0.93			0.79		0.92

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	9	7	0	1	5	0	0	24	46	1	3	6	102
4:15 PM	3	3	0	1	5	0	0	17	34	2	8	11	84
4:30 PM	14	13	0	2	4	0	0	38	26	2	3	12	114
4:45 PM	9	7	2	1	3	0	0	19	27	1	2	7	78
5:00 PM	6	6	0	2	11	0	0	18	21	2	6	12	84
5:15 PM	13	9	1	1	6	0	0	15	34	4	5	9	97
5:30 PM	9	3	0	2	10	0	0	18	39	3	2	7	93
5:45 PM	11	1	0	1	9	0	0	20	36	2	0	10	90
Total	74	49	3	11	53	0	0	169	263	17	29	74	742

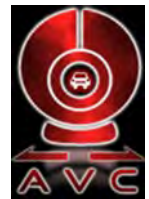
PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.83**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	35	30	2	5	17	0	0	98	133	6	16	36	378
PHF	0.63	0.577	0.25	0.625	0.85	#####	#####	0.645	0.723	0.75	0.5	0.75	0.83
Movement PHF		0.62			0.92			0.83			0.69		0.83

24 Hour Segment Count

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



Location: 1. Otay Mesa Rd, East of Heritage Rd

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

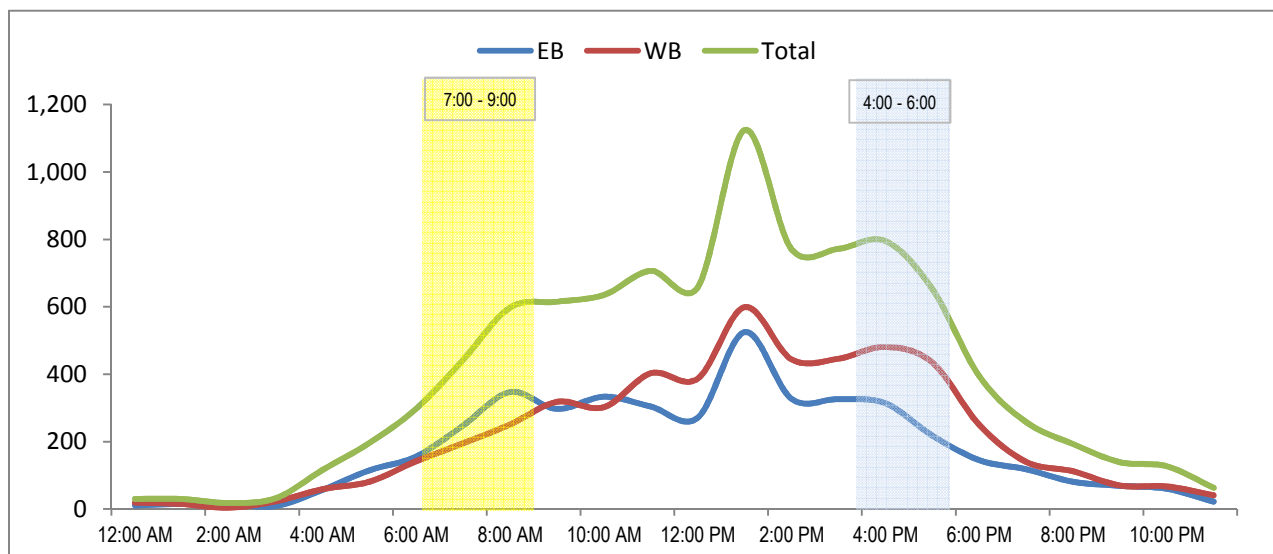
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

24 Hour Segment Volume						9,666				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		11	19	30		12:00 PM - 1:00 PM		271	387	658
1:00 AM - 2:00 AM		15	15	30		1:00 PM - 2:00 PM		525	599	1,124
2:00 AM - 3:00 AM		14	4	18		2:00 PM - 3:00 PM		327	444	771
3:00 AM - 4:00 AM		9	23	32		3:00 PM - 4:00 PM		326	446	772
4:00 AM - 5:00 AM		57	59	116		4:00 PM - 5:00 PM		314	481	795
5:00 AM - 6:00 AM		115	81	196		5:00 PM - 6:00 PM		218	435	653
6:00 AM - 7:00 AM		156	142	298		6:00 PM - 7:00 PM		145	250	395
7:00 AM - 8:00 AM		248	195	443		7:00 PM - 8:00 PM		118	140	258
8:00 AM - 9:00 AM		347	251	598		8:00 PM - 9:00 PM		81	112	193
9:00 AM - 10:00 AM		297	318	615	9:00 PM - 10:00 PM		69	70	139	
10:00 AM - 11:00 AM		333	302	635	10:00 PM - 11:00 PM		60	67	127	
11:00 AM - 12:00 PM		304	403	707	11:00 PM - 12:00 AM		22	41	63	
Total		1,906	1,812	3,718	Total		2,476	3,472	5,948	

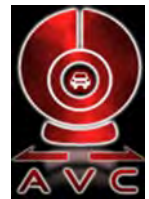
24-Hour	EB	Volume	4,382	24-Hour	WB	Volume	5,284
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------





24 Hour Segment Count

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



Location: 2. Otay Mesa Rd, Heritage Rd to Cactus Rd.

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

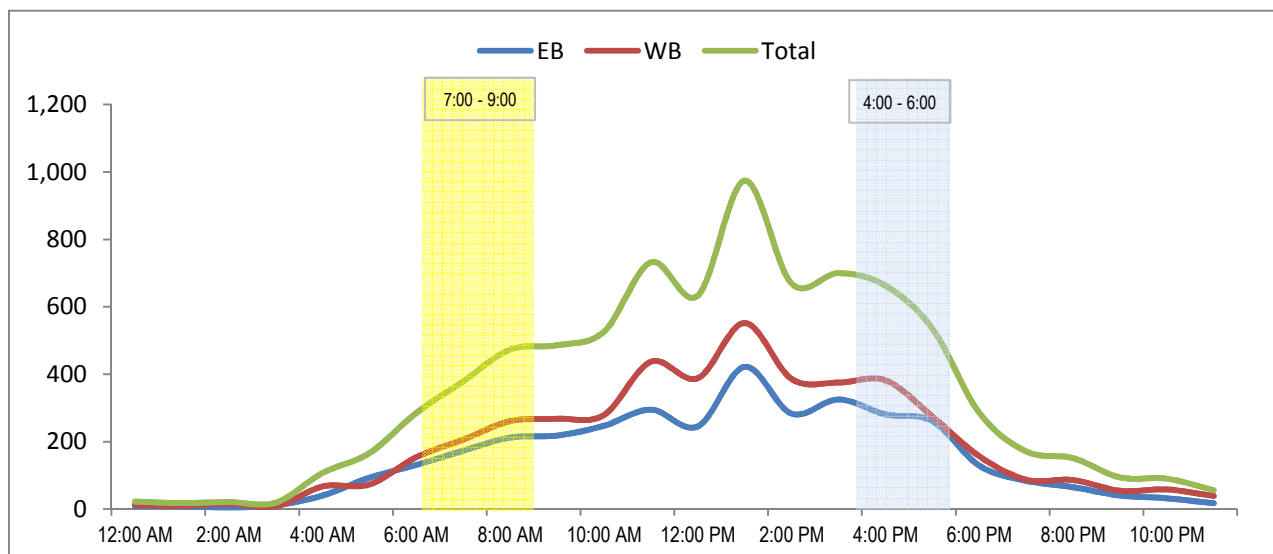
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

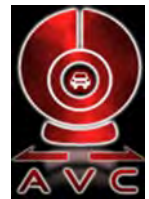
24 Hour Segment Volume						8,257				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		9	13	22		12:00 PM - 1:00 PM		245	388	633
1:00 AM - 2:00 AM		8	10	18		1:00 PM - 2:00 PM		422	552	974
2:00 AM - 3:00 AM		5	16	21		2:00 PM - 3:00 PM		283	386	669
3:00 AM - 4:00 AM		11	8	19		3:00 PM - 4:00 PM		325	375	700
4:00 AM - 5:00 AM		40	67	107		4:00 PM - 5:00 PM		281	382	663
5:00 AM - 6:00 AM		93	73	166		5:00 PM - 6:00 PM		261	275	536
6:00 AM - 7:00 AM		131	154	285		6:00 PM - 7:00 PM		129	157	286
7:00 AM - 8:00 AM		173	206	379		7:00 PM - 8:00 PM		84	87	171
8:00 AM - 9:00 AM		212	261	473		8:00 PM - 9:00 PM		65	86	151
9:00 AM - 10:00 AM		218	268	486	9:00 PM - 10:00 PM		40	54	94	
10:00 AM - 11:00 AM		247	279	526	10:00 PM - 11:00 PM		32	58	90	
11:00 AM - 12:00 PM		295	437	732	11:00 PM - 12:00 AM		17	39	56	
Total		1,442	1,792	3,234	Total		2,184	2,839	5,023	

24-Hour	EB	Volume	3,626	24-Hour	WB	Volume	4,631
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 3. Olay Mesa Rd, Cactus Road to Britannia Road

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

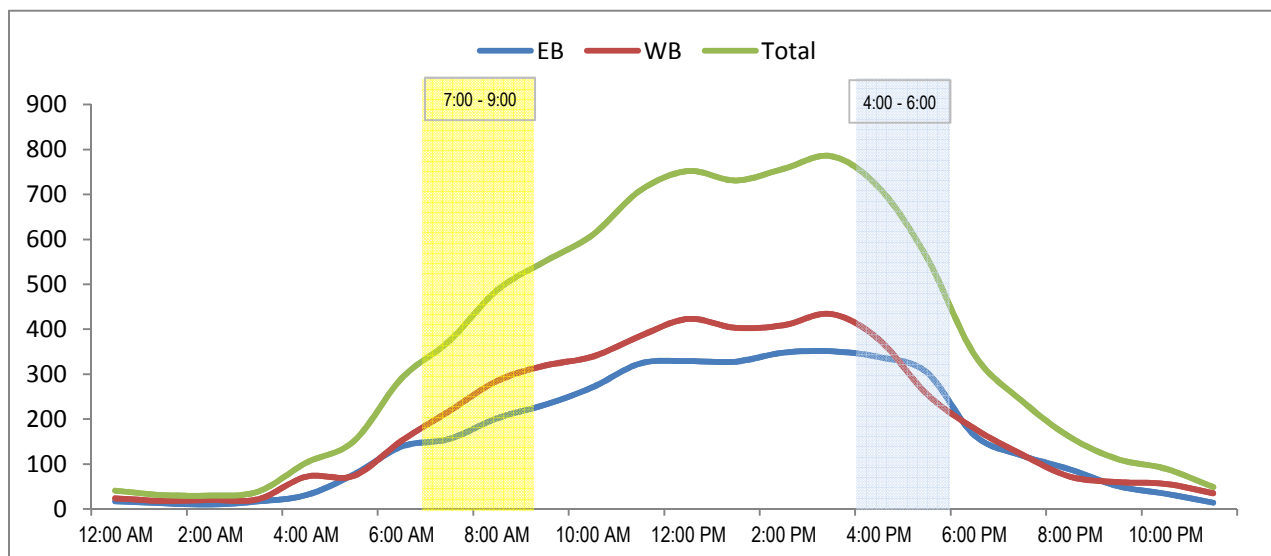
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

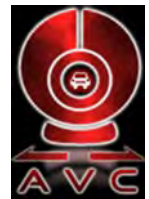
24 Hour Segment Volume						8,710				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		17	24	41		12:00 PM - 1:00 PM		329	423	752
1:00 AM - 2:00 AM		13	18	31		1:00 PM - 2:00 PM		328	403	731
2:00 AM - 3:00 AM		10	20	30		2:00 PM - 3:00 PM		348	409	757
3:00 AM - 4:00 AM		17	22	39		3:00 PM - 4:00 PM		351	434	785
4:00 AM - 5:00 AM		31	72	103		4:00 PM - 5:00 PM		338	377	715
5:00 AM - 6:00 AM		77	74	151		5:00 PM - 6:00 PM		304	256	560
6:00 AM - 7:00 AM		139	152	291		6:00 PM - 7:00 PM		164	179	343
7:00 AM - 8:00 AM		156	218	374		7:00 PM - 8:00 PM		119	121	240
8:00 AM - 9:00 AM		202	285	487		8:00 PM - 9:00 PM		88	72	160
9:00 AM - 10:00 AM		232	319	551	9:00 PM - 10:00 PM		51	60	111	
10:00 AM - 11:00 AM		271	339	610	10:00 PM - 11:00 PM		34	56	90	
11:00 AM - 12:00 PM		324	385	709	11:00 PM - 12:00 AM		14	35	49	
Total		1,489	1,928	3,417	Total		2,468	2,825	5,293	

24-Hour	EB	Volume	3,957	24-Hour	WB	Volume	4,753
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 4. Otay Mesa Rd, Britannia Road to La Media Road

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

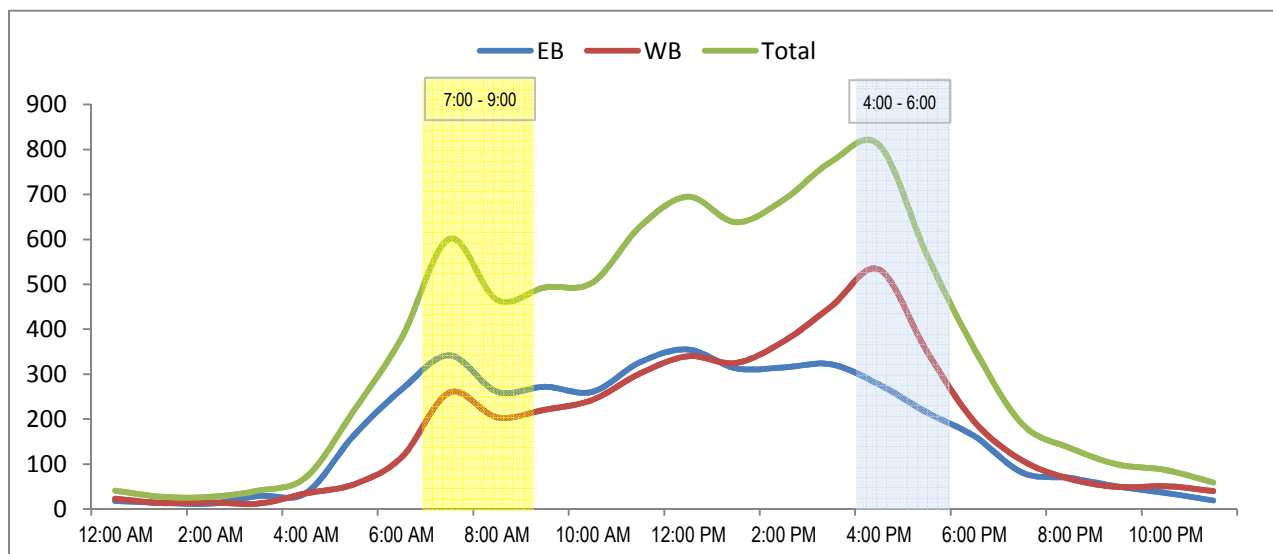
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

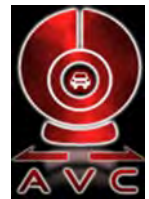
24 Hour Segment Volume						8,595				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		18	23	41		12:00 PM - 1:00 PM		355	340	695
1:00 AM - 2:00 AM		14	13	27		1:00 PM - 2:00 PM		313	325	638
2:00 AM - 3:00 AM		12	15	27		2:00 PM - 3:00 PM		315	373	688
3:00 AM - 4:00 AM		29	12	41		3:00 PM - 4:00 PM		322	451	773
4:00 AM - 5:00 AM		36	35	71		4:00 PM - 5:00 PM		277	533	810
5:00 AM - 6:00 AM		164	55	219		5:00 PM - 6:00 PM		215	351	566
6:00 AM - 7:00 AM		266	115	381		6:00 PM - 7:00 PM		162	194	356
7:00 AM - 8:00 AM		342	259	601		7:00 PM - 8:00 PM		81	108	189
8:00 AM - 9:00 AM		261	204	465		8:00 PM - 9:00 PM		69	67	136
9:00 AM - 10:00 AM		272	221	493	9:00 PM - 10:00 PM		50	49	99	
10:00 AM - 11:00 AM		261	243	504	10:00 PM - 11:00 PM		36	51	87	
11:00 AM - 12:00 PM		327	302	629	11:00 PM - 12:00 AM		19	40	59	
Total		2,002	1,497	3,499	Total		2,214	2,882	5,096	

24-Hour	EB	Volume	4,216	24-Hour	WB	Volume	4,379
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 5. Otay Mesa Rd, La Media Road to Piper Ranch Road

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

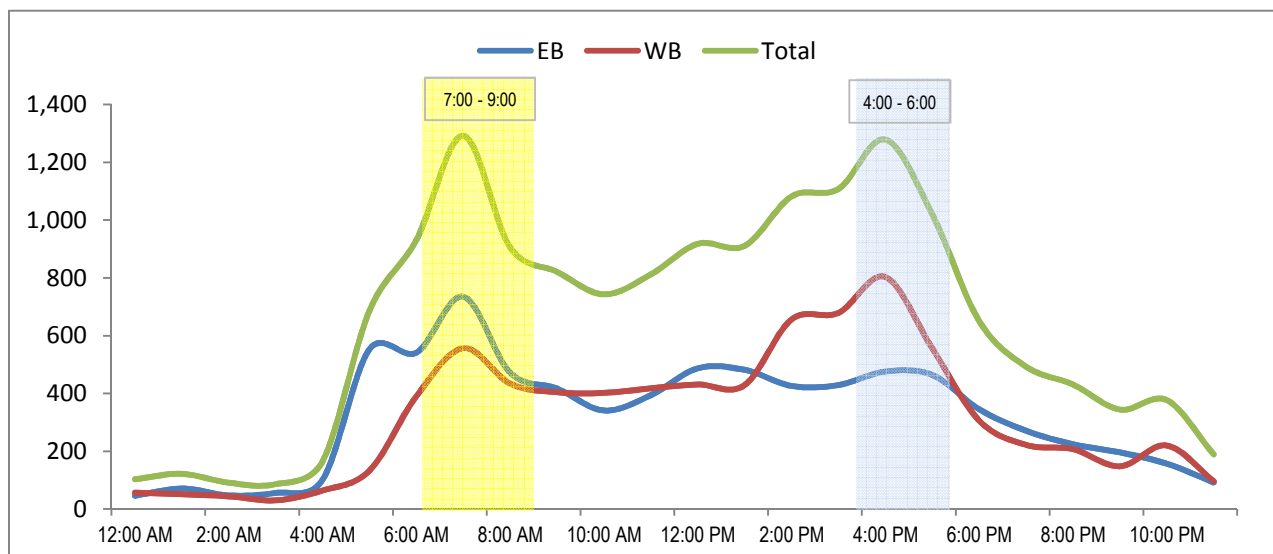
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

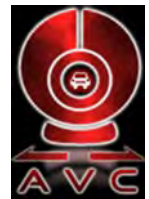
24 Hour Segment Volume						15,561				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		46	57	103		12:00 PM - 1:00 PM		487	431	918
1:00 AM - 2:00 AM		71	51	122		1:00 PM - 2:00 PM		482	429	911
2:00 AM - 3:00 AM		47	44	91		2:00 PM - 3:00 PM		426	656	1,082
3:00 AM - 4:00 AM		56	30	86		3:00 PM - 4:00 PM		429	679	1,108
4:00 AM - 5:00 AM		101	64	165		4:00 PM - 5:00 PM		476	803	1,279
5:00 AM - 6:00 AM		553	133	686		5:00 PM - 6:00 PM		464	556	1,020
6:00 AM - 7:00 AM		541	390	931		6:00 PM - 7:00 PM		345	306	651
7:00 AM - 8:00 AM		735	557	1,292		7:00 PM - 8:00 PM		271	222	493
8:00 AM - 9:00 AM		472	434	906		8:00 PM - 9:00 PM		224	207	431
9:00 AM - 10:00 AM		417	404	821	9:00 PM - 10:00 PM		196	148	344	
10:00 AM - 11:00 AM		341	402	743	10:00 PM - 11:00 PM		157	220	377	
11:00 AM - 12:00 PM		394	418	812	11:00 PM - 12:00 AM		92	97	189	
Total		3,774	2,984	6,758	Total		4,049	4,754	8,803	

24-Hour	EB	Volume	7,823	24-Hour	WB	Volume	7,738
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 6. Otay Mesa Rd, Piper Ranch Road to SR 125 Off Ramp

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

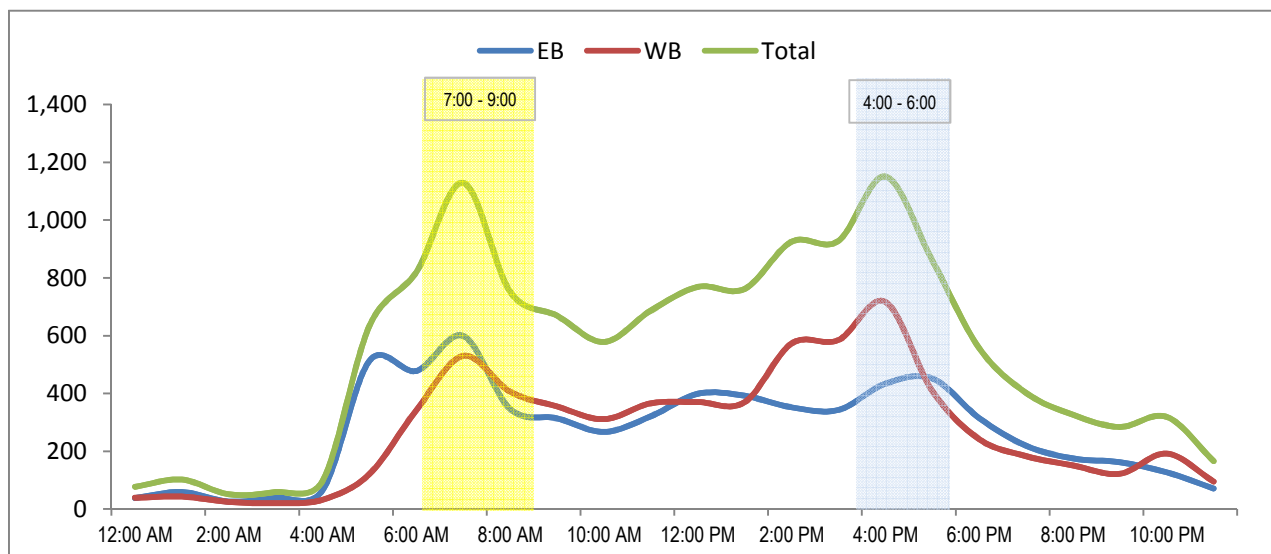
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

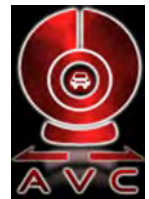
24 Hour Segment Volume						13,105				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		38	39	77		12:00 PM - 1:00 PM		399	370	769
1:00 AM - 2:00 AM		59	43	102		1:00 PM - 2:00 PM		392	370	762
2:00 AM - 3:00 AM		26	25	51		2:00 PM - 3:00 PM		352	573	925
3:00 AM - 4:00 AM		39	20	59		3:00 PM - 4:00 PM		343	585	928
4:00 AM - 5:00 AM		65	32	97		4:00 PM - 5:00 PM		434	717	1,151
5:00 AM - 6:00 AM		513	121	634		5:00 PM - 6:00 PM		452	409	861
6:00 AM - 7:00 AM		478	342	820		6:00 PM - 7:00 PM		315	242	557
7:00 AM - 8:00 AM		599	530	1,129		7:00 PM - 8:00 PM		219	183	402
8:00 AM - 9:00 AM		346	406	752		8:00 PM - 9:00 PM		175	151	326
9:00 AM - 10:00 AM		314	355	669		9:00 PM - 10:00 PM		162	122	284
10:00 AM - 11:00 AM		267	311	578	10:00 PM - 11:00 PM		127	192	319	
11:00 AM - 12:00 PM		321	366	687	11:00 PM - 12:00 AM		71	95	166	
Total		3,065	2,590	5,655	Total		3,441	4,009	7,450	

24-Hour	EB	Volume	6,506	24-Hour	WB	Volume	6,599
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 7. Otay Mesa Rd, SR 125 On Ramps to Harvest Road

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

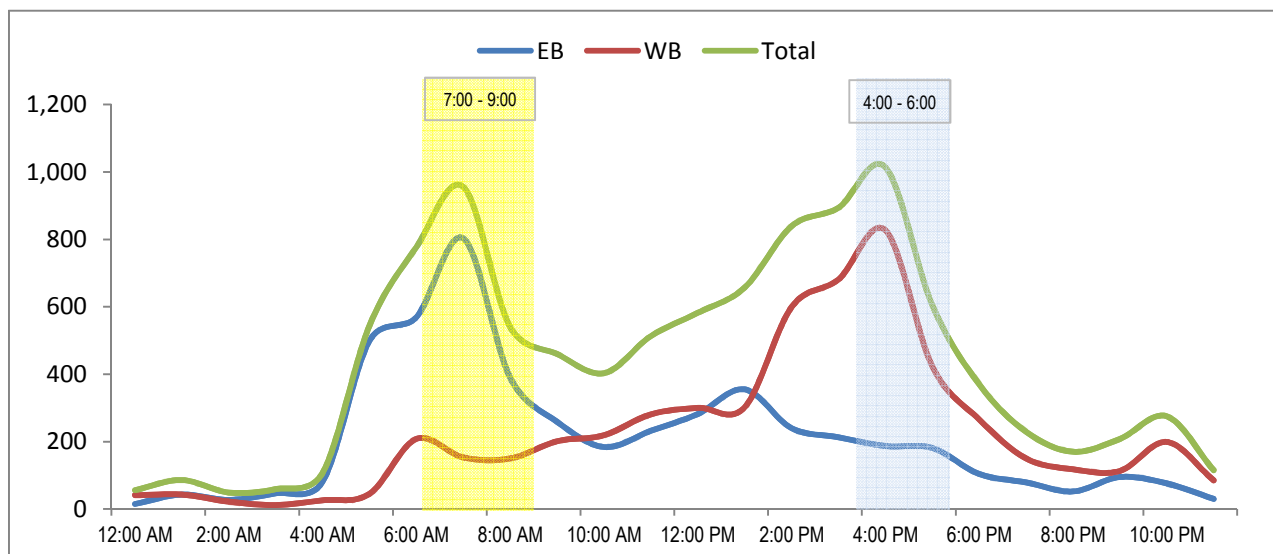
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

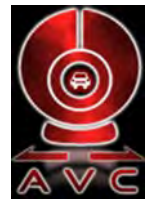
24 Hour Segment Volume						10,508				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		15	41	56		12:00 PM - 1:00 PM		282	300	582
1:00 AM - 2:00 AM		43	43	86		1:00 PM - 2:00 PM		355	302	657
2:00 AM - 3:00 AM		27	22	49		2:00 PM - 3:00 PM		240	599	839
3:00 AM - 4:00 AM		47	12	59		3:00 PM - 4:00 PM		213	681	894
4:00 AM - 5:00 AM		81	26	107		4:00 PM - 5:00 PM		187	827	1,014
5:00 AM - 6:00 AM		499	45	544		5:00 PM - 6:00 PM		181	424	605
6:00 AM - 7:00 AM		569	208	777		6:00 PM - 7:00 PM		104	266	370
7:00 AM - 8:00 AM		803	153	956		7:00 PM - 8:00 PM		79	150	229
8:00 AM - 9:00 AM		390	150	540		8:00 PM - 9:00 PM		52	118	170
9:00 AM - 10:00 AM		259	201	460		9:00 PM - 10:00 PM		95	113	208
10:00 AM - 11:00 AM		184	219	403	10:00 PM - 11:00 PM		76	199	275	
11:00 AM - 12:00 PM		232	281	513	11:00 PM - 12:00 AM		30	85	115	
Total		3,149	1,401	4,550	Total		1,894	4,064	5,958	

24-Hour	EB	Volume	5,043	24-Hour	WB	Volume	5,465
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 8. Otay Mesa Rd, Harvest Road to Sanyo Avenue

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

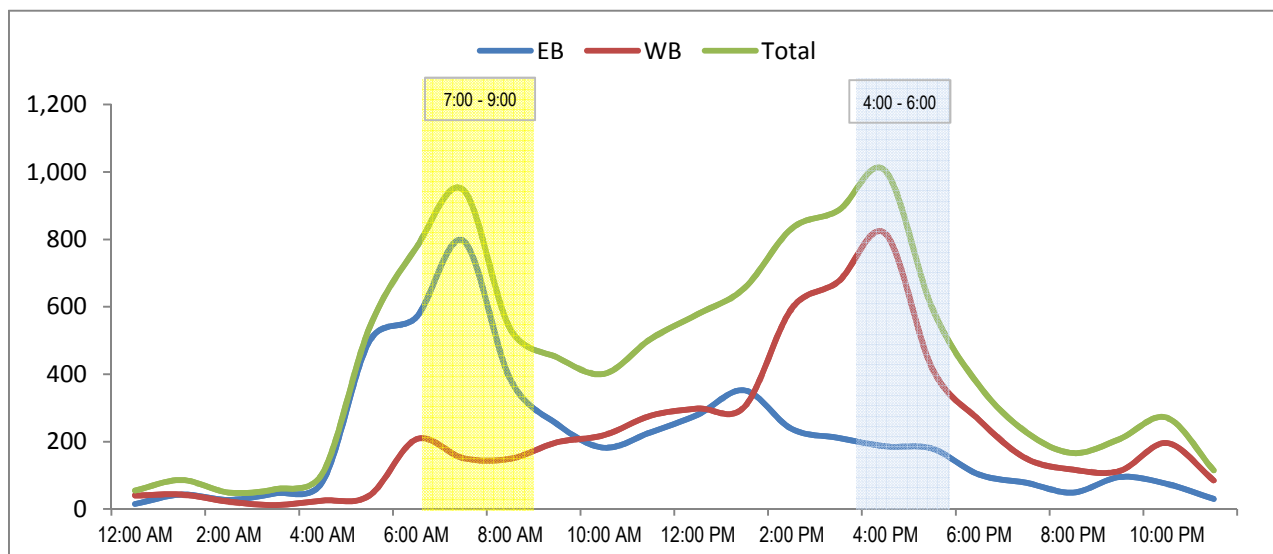
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

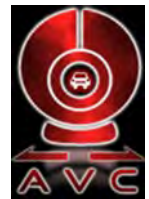
24 Hour Segment Volume						10,412				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		15	40	55		12:00 PM - 1:00 PM		280	298	578
1:00 AM - 2:00 AM		43	43	86		1:00 PM - 2:00 PM		352	304	656
2:00 AM - 3:00 AM		27	22	49		2:00 PM - 3:00 PM		238	594	832
3:00 AM - 4:00 AM		47	12	59		3:00 PM - 4:00 PM		211	675	886
4:00 AM - 5:00 AM		81	25	106		4:00 PM - 5:00 PM		186	817	1,003
5:00 AM - 6:00 AM		498	40	538		5:00 PM - 6:00 PM		179	417	596
6:00 AM - 7:00 AM		569	207	776		6:00 PM - 7:00 PM		102	264	366
7:00 AM - 8:00 AM		796	151	947		7:00 PM - 8:00 PM		78	150	228
8:00 AM - 9:00 AM		386	149	535		8:00 PM - 9:00 PM		49	117	166
9:00 AM - 10:00 AM		252	198	450		9:00 PM - 10:00 PM		95	113	208
10:00 AM - 11:00 AM		182	219	401	10:00 PM - 11:00 PM		75	196	271	
11:00 AM - 12:00 PM		228	277	505	11:00 PM - 12:00 AM		30	85	115	
Total		3,124	1,383	4,507	Total		1,875	4,030	5,905	

24-Hour	EB	Volume	4,999	24-Hour	WB	Volume	5,413
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 9. Otay Mesa Rd, Sanyo Avenue to Enrico Fermi Drive

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

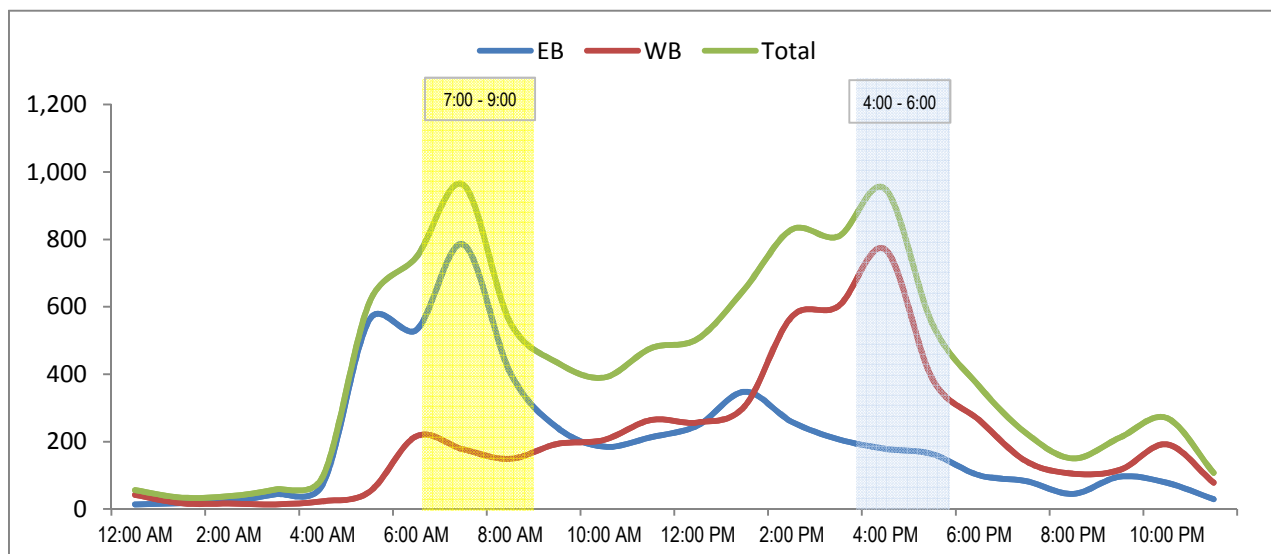
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

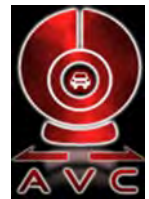
24 Hour Segment Volume						10,082				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		14	42	56		12:00 PM - 1:00 PM		248	257	505
1:00 AM - 2:00 AM		17	17	34		1:00 PM - 2:00 PM		348	305	653
2:00 AM - 3:00 AM		22	16	38		2:00 PM - 3:00 PM		259	570	829
3:00 AM - 4:00 AM		44	14	58		3:00 PM - 4:00 PM		207	602	809
4:00 AM - 5:00 AM		72	23	95		4:00 PM - 5:00 PM		179	770	949
5:00 AM - 6:00 AM		562	51	613		5:00 PM - 6:00 PM		163	387	550
6:00 AM - 7:00 AM		531	216	747		6:00 PM - 7:00 PM		100	264	364
7:00 AM - 8:00 AM		785	177	962		7:00 PM - 8:00 PM		83	142	225
8:00 AM - 9:00 AM		405	149	554		8:00 PM - 9:00 PM		45	105	150
9:00 AM - 10:00 AM		242	193	435		9:00 PM - 10:00 PM		96	116	212
10:00 AM - 11:00 AM		185	205	390	10:00 PM - 11:00 PM		78	192	270	
11:00 AM - 12:00 PM		213	264	477	11:00 PM - 12:00 AM		29	78	107	
Total		3,092	1,367	4,459	Total		1,835	3,788	5,623	

24-Hour	EB	Volume	4,927	24-Hour	WB	Volume	5,155
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 1. Britannia Boulevard, SR 905 WB Ramps to Otay Mesa Road

Orientation: North-South

Date of Count: Thursday, May 14, 2015

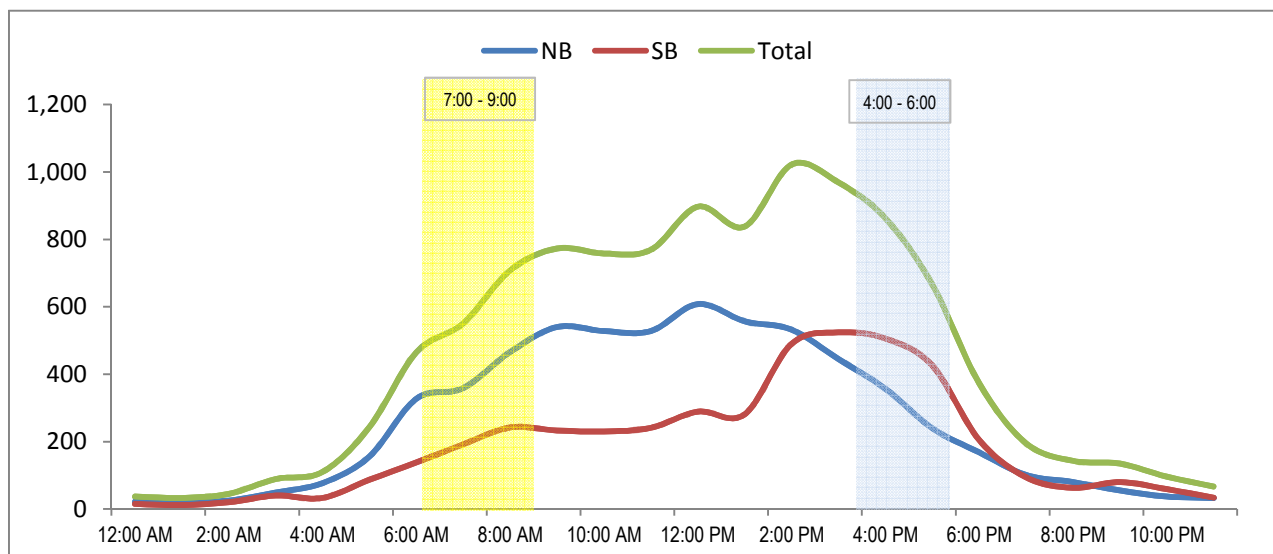
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0349

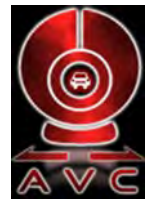
24 Hour Segment Volume						10,845				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		22	15	37		12:00 PM - 1:00 PM		608	289	897
1:00 AM - 2:00 AM		21	12	33		1:00 PM - 2:00 PM		557	281	838
2:00 AM - 3:00 AM		25	20	45		2:00 PM - 3:00 PM		532	490	1,022
3:00 AM - 4:00 AM		49	40	89		3:00 PM - 4:00 PM		445	524	969
4:00 AM - 5:00 AM		77	33	110		4:00 PM - 5:00 PM		357	506	863
5:00 AM - 6:00 AM		156	87	243		5:00 PM - 6:00 PM		240	426	666
6:00 AM - 7:00 AM		327	138	465		6:00 PM - 7:00 PM		168	205	373
7:00 AM - 8:00 AM		359	192	551		7:00 PM - 8:00 PM		101	94	195
8:00 AM - 9:00 AM		466	242	708		8:00 PM - 9:00 PM		80	63	143
9:00 AM - 10:00 AM		540	233	773	9:00 PM - 10:00 PM		55	80	135	
10:00 AM - 11:00 AM		528	230	758	10:00 PM - 11:00 PM		37	59	96	
11:00 AM - 12:00 PM		528	241	769	11:00 PM - 12:00 AM		33	34	67	
Total		3,098	1,483	4,581	Total		3,213	3,051	6,264	

24-Hour	NB	Volume	6,311	24-Hour	SB	Volume	4,534
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 3. Sanyo Avenue: Otay Mesa Road to Airway Road

Orientation: North-South

Date of Count: Thursday, May 14, 2015

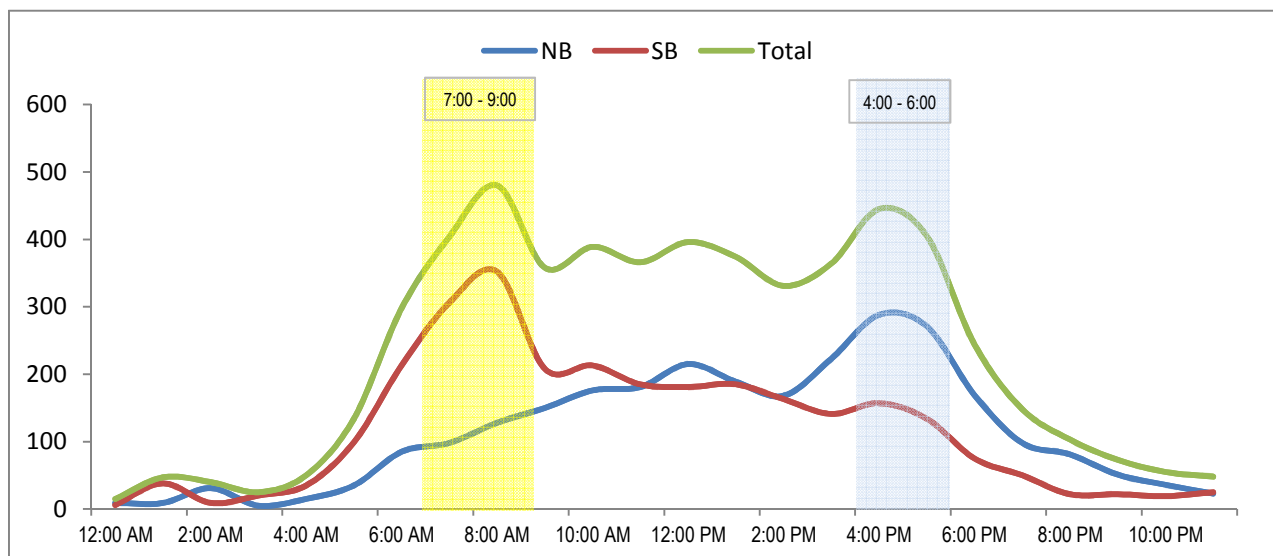
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0349

24 Hour Segment Volume					5,592			
Time	Hourly Volume				Time	Hourly Volume		
	NB	SB	Total			NB	SB	Total
12:00 AM - 1:00 AM	9	6	15		12:00 PM - 1:00 PM	215	181	396
1:00 AM - 2:00 AM	9	38	47		1:00 PM - 2:00 PM	189	185	374
2:00 AM - 3:00 AM	31	9	40		2:00 PM - 3:00 PM	168	163	331
3:00 AM - 4:00 AM	5	20	25		3:00 PM - 4:00 PM	223	141	364
4:00 AM - 5:00 AM	15	35	50		4:00 PM - 5:00 PM	288	157	445
5:00 AM - 6:00 AM	35	99	134		5:00 PM - 6:00 PM	271	134	405
6:00 AM - 7:00 AM	85	213	298		6:00 PM - 7:00 PM	169	75	244
7:00 AM - 8:00 AM	98	306	404		7:00 PM - 8:00 PM	98	50	148
8:00 AM - 9:00 AM	128	352	480		8:00 PM - 9:00 PM	81	22	103
9:00 AM - 10:00 AM	150	208	358		9:00 PM - 10:00 PM	51	22	73
10:00 AM - 11:00 AM	176	213	389		10:00 PM - 11:00 PM	36	19	55
11:00 AM - 12:00 PM	181	185	366		11:00 PM - 12:00 AM	23	25	48
Total	922	1,684	2,606		Total	1,812	1,174	2,986

24-Hour	NB	Volume	2,734	24-Hour	SB	Volume	2,858
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------





24 Hour Segment Count

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



Location: 11. Enrici Fermi Dr, Otay Mesa Road to Airway Road

Orientation: North-South

Date of Count: Tuesday, August 12, 2014

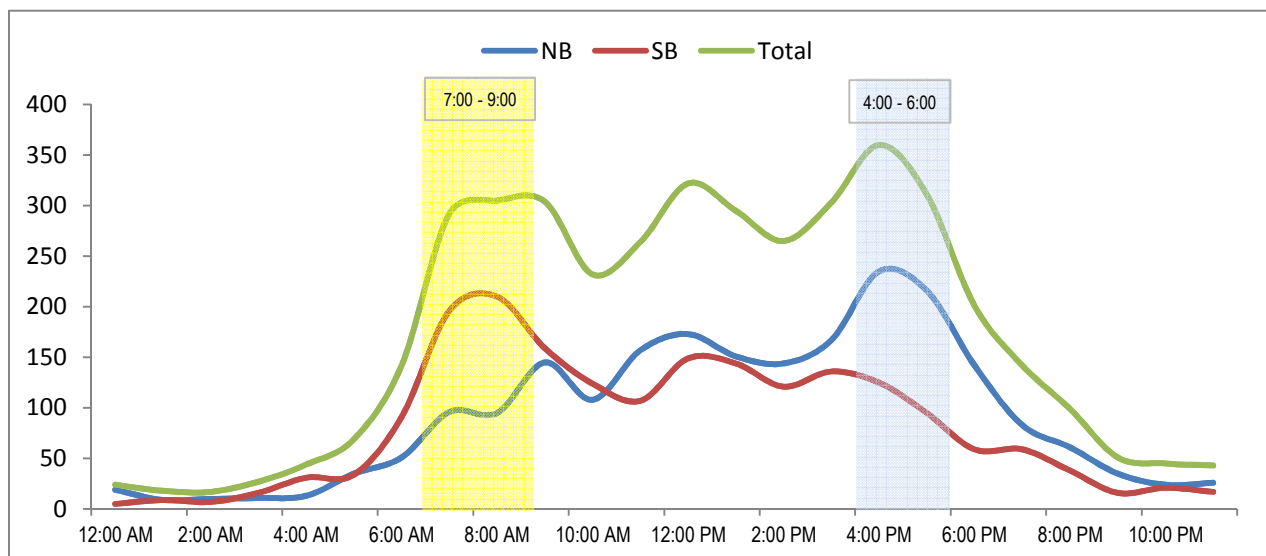
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

24 Hour Segment Volume							4,175			
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		19	5	24		12:00 PM - 1:00 PM		173	149	322
1:00 AM - 2:00 AM		9	9	18		1:00 PM - 2:00 PM		151	144	295
2:00 AM - 3:00 AM		10	7	17		2:00 PM - 3:00 PM		144	121	265
3:00 AM - 4:00 AM		11	16	27		3:00 PM - 4:00 PM		167	136	303
4:00 AM - 5:00 AM		13	31	44		4:00 PM - 5:00 PM		235	125	360
5:00 AM - 6:00 AM		35	34	69		5:00 PM - 6:00 PM		216	95	311
6:00 AM - 7:00 AM		51	91	142		6:00 PM - 7:00 PM		142	59	201
7:00 AM - 8:00 AM		96	196	292		7:00 PM - 8:00 PM		83	59	142
8:00 AM - 9:00 AM		95	210	305		8:00 PM - 9:00 PM		61	38	99
9:00 AM - 10:00 AM		145	159	304	9:00 PM - 10:00 PM		35	16	51	
10:00 AM - 11:00 AM		108	124	232	10:00 PM - 11:00 PM		24	21	45	
11:00 AM - 12:00 PM		157	107	264	11:00 PM - 12:00 AM		26	17	43	
Total		749	989	1,738	Total		1,457	980	2,437	

24-Hour	NB	Volume	2,206	24-Hour	SB	Volume	1,969
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------





24 Hour Segment Count

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



Location: 4. Enrico Fermi Drive: Airway Road to Siempre Viva Road

Orientation: North-South

Date of Count: Wednesday, May 13, 2015

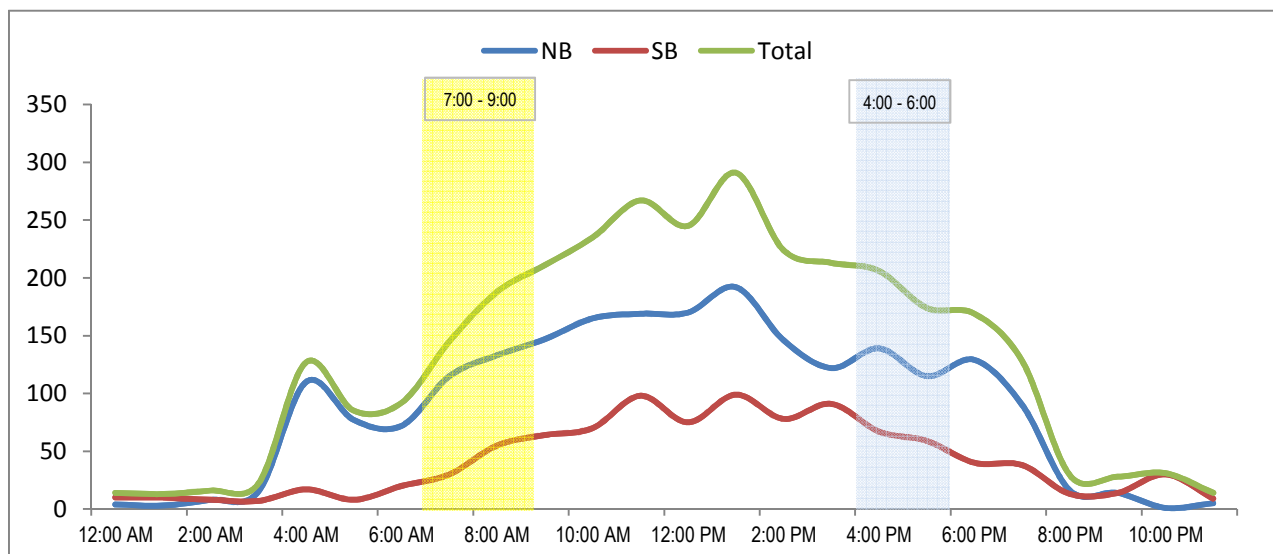
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0354

24 Hour Segment Volume						3,167				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		4	10	14		12:00 PM - 1:00 PM		170	75	245
1:00 AM - 2:00 AM		3	10	13		1:00 PM - 2:00 PM		192	99	291
2:00 AM - 3:00 AM		8	8	16		2:00 PM - 3:00 PM		146	78	224
3:00 AM - 4:00 AM		15	7	22		3:00 PM - 4:00 PM		122	91	213
4:00 AM - 5:00 AM		110	17	127		4:00 PM - 5:00 PM		139	67	206
5:00 AM - 6:00 AM		77	8	85		5:00 PM - 6:00 PM		115	59	174
6:00 AM - 7:00 AM		72	20	92		6:00 PM - 7:00 PM		129	40	169
7:00 AM - 8:00 AM		115	30	145		7:00 PM - 8:00 PM		90	38	128
8:00 AM - 9:00 AM		133	55	188		8:00 PM - 9:00 PM		16	13	29
9:00 AM - 10:00 AM		147	64	211		9:00 PM - 10:00 PM		14	14	28
10:00 AM - 11:00 AM		165	70	235	10:00 PM - 11:00 PM		1	30	31	
11:00 AM - 12:00 PM		169	98	267	11:00 PM - 12:00 AM		5	9	14	
Total		1,018	397	1,415	Total		1,139	613	1,752	

24-Hour	NB	Volume	2,157	24-Hour	SB	Volume	1,010
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------





24 Hour Segment Count

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



Location: 12. Airway Rd, Sanyo Avenue to Paseo de Las Americas

Orientation: East-West

Date of Count: Tuesday, August 12, 2014

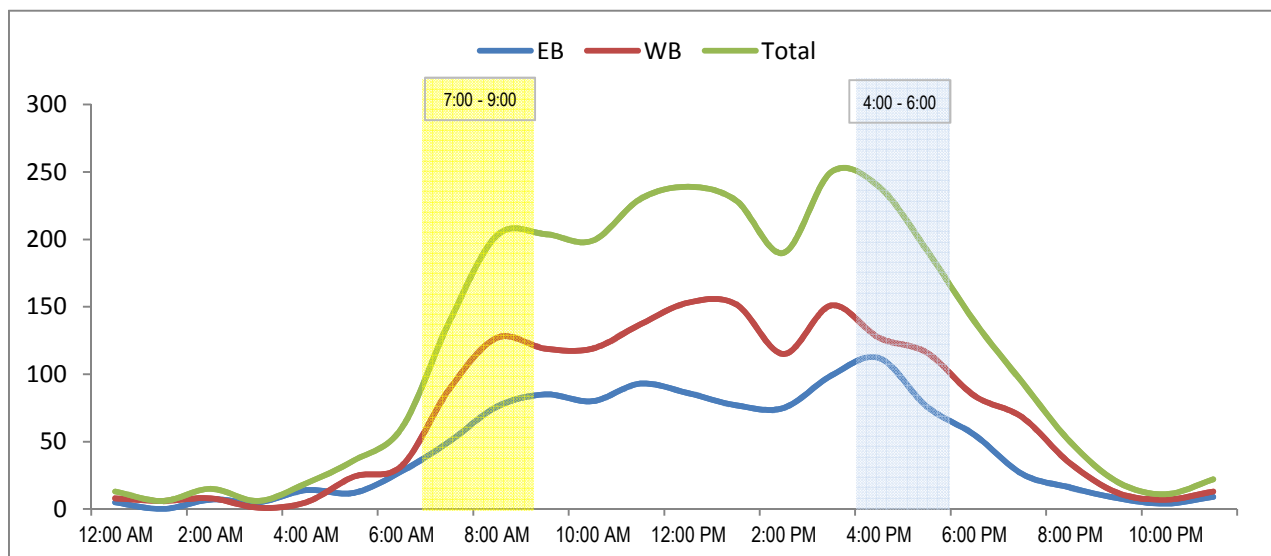
Analysts: DASH

Weather: Sunny

AVC Proj. No: 14-0237

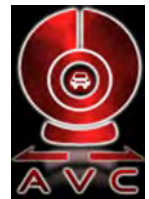
24 Hour Segment Volume						2,805				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		5	8	13		12:00 PM - 1:00 PM		86	153	239
1:00 AM - 2:00 AM		0	6	6		1:00 PM - 2:00 PM		77	152	229
2:00 AM - 3:00 AM		7	8	15		2:00 PM - 3:00 PM		75	115	190
3:00 AM - 4:00 AM		5	1	6		3:00 PM - 4:00 PM		99	151	250
4:00 AM - 5:00 AM		14	5	19		4:00 PM - 5:00 PM		112	127	239
5:00 AM - 6:00 AM		12	24	36		5:00 PM - 6:00 PM		76	116	192
6:00 AM - 7:00 AM		28	32	60		6:00 PM - 7:00 PM		55	84	139
7:00 AM - 8:00 AM		50	89	139		7:00 PM - 8:00 PM		26	68	94
8:00 AM - 9:00 AM		76	127	203		8:00 PM - 9:00 PM		16	34	50
9:00 AM - 10:00 AM		85	119	204	9:00 PM - 10:00 PM		8	12	20	
10:00 AM - 11:00 AM		80	119	199	10:00 PM - 11:00 PM		4	7	11	
11:00 AM - 12:00 PM		93	137	230	11:00 PM - 12:00 AM		9	13	22	
Total		455	675	1,130	Total		643	1,032	1,675	

24-Hour	EB	Volume	1,098	24-Hour	WB	Volume	1,707
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 2. La Media Road: Otay Mesa Road to St. Andrews Avenue / SR 905 WB Ramps

Orientation: North-South

Date of Count: Thursday, May 14, 2015

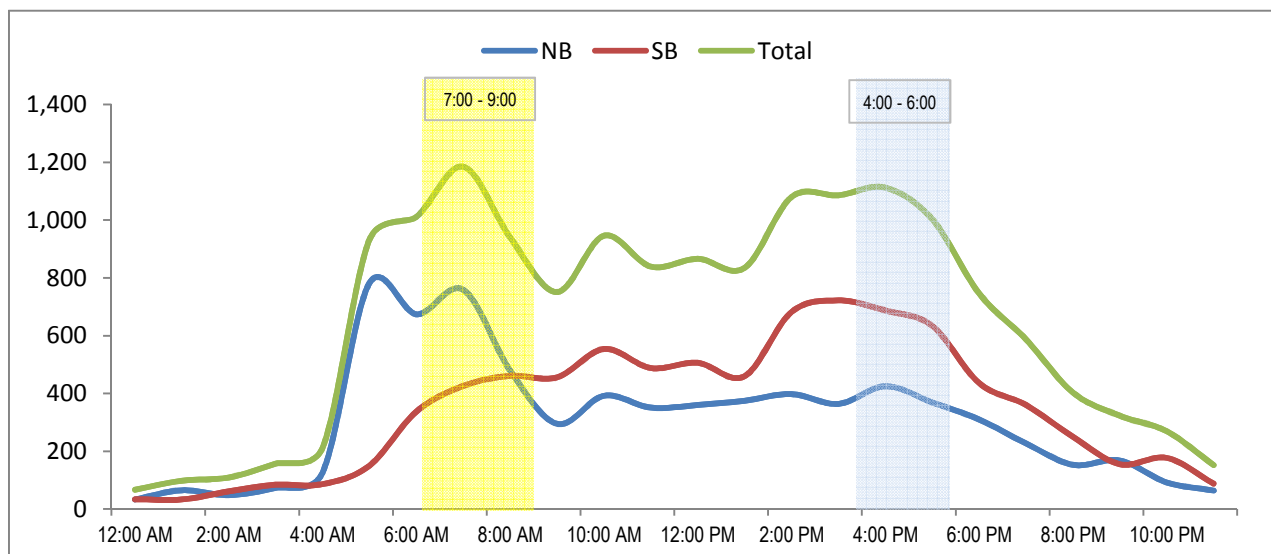
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0349

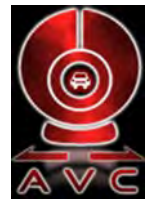
24 Hour Segment Volume						15,709				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		33	34	67		12:00 PM - 1:00 PM		360	506	866
1:00 AM - 2:00 AM		65	33	98		1:00 PM - 2:00 PM		375	460	835
2:00 AM - 3:00 AM		48	61	109		2:00 PM - 3:00 PM		398	682	1,080
3:00 AM - 4:00 AM		73	84	157		3:00 PM - 4:00 PM		364	722	1,086
4:00 AM - 5:00 AM		126	86	212		4:00 PM - 5:00 PM		425	687	1,112
5:00 AM - 6:00 AM		782	150	932		5:00 PM - 6:00 PM		369	634	1,003
6:00 AM - 7:00 AM		674	337	1,011		6:00 PM - 7:00 PM		310	436	746
7:00 AM - 8:00 AM		759	426	1,185		7:00 PM - 8:00 PM		227	360	587
8:00 AM - 9:00 AM		479	461	940		8:00 PM - 9:00 PM		153	250	403
9:00 AM - 10:00 AM		295	456	751		9:00 PM - 10:00 PM		168	155	323
10:00 AM - 11:00 AM		392	554	946	10:00 PM - 11:00 PM		92	177	269	
11:00 AM - 12:00 PM		351	488	839	11:00 PM - 12:00 AM		64	88	152	
Total		4,077	3,170	7,247	Total		3,305	5,157	8,462	

24-Hour	NB	Volume	7,382	24-Hour	SB	Volume	8,327
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



24 Hour Segment Count

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



Location: 5. Siempre Viva Road: SR 905 to Paseo De Las Americas

Orientation: East-West

Date of Count: Wednesday, May 13, 2015

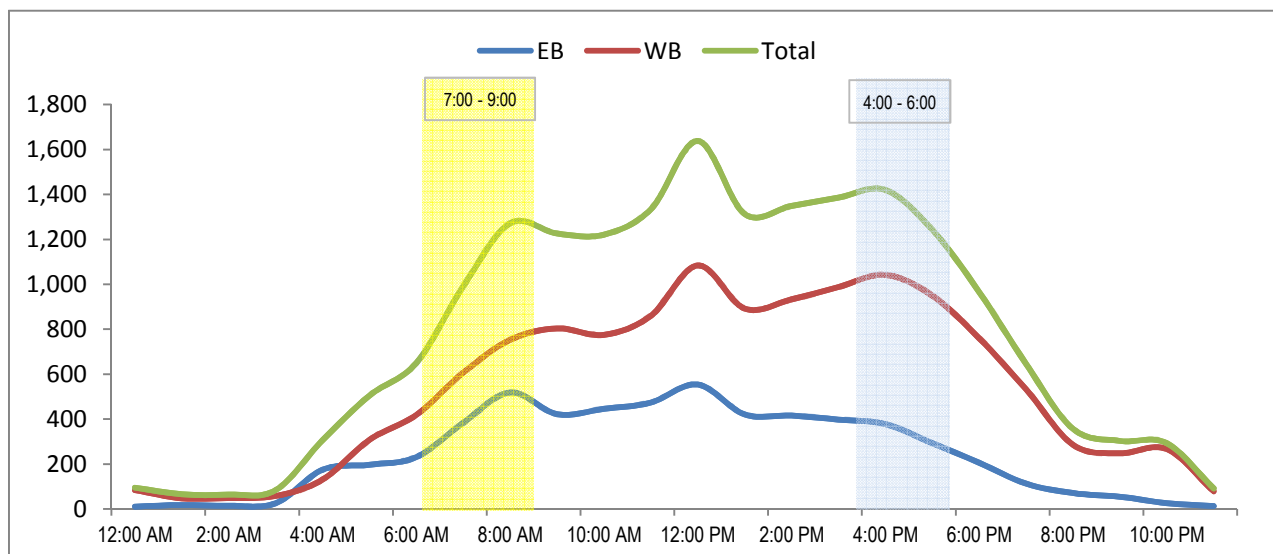
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0354

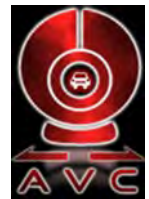
24 Hour Segment Volume						18,820				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		11	84	95		12:00 PM - 1:00 PM		554	1,084	1,638
1:00 AM - 2:00 AM		18	48	66		1:00 PM - 2:00 PM		421	892	1,313
2:00 AM - 3:00 AM		15	49	64		2:00 PM - 3:00 PM		416	933	1,349
3:00 AM - 4:00 AM		26	58	84		3:00 PM - 4:00 PM		398	988	1,386
4:00 AM - 5:00 AM		175	131	306		4:00 PM - 5:00 PM		378	1,042	1,420
5:00 AM - 6:00 AM		197	308	505		5:00 PM - 6:00 PM		293	950	1,243
6:00 AM - 7:00 AM		231	419	650		6:00 PM - 7:00 PM		206	760	966
7:00 AM - 8:00 AM		384	607	991		7:00 PM - 8:00 PM		113	533	646
8:00 AM - 9:00 AM		519	753	1,272		8:00 PM - 9:00 PM		71	286	357
9:00 AM - 10:00 AM		422	804	1,226	9:00 PM - 10:00 PM		55	248	303	
10:00 AM - 11:00 AM		446	775	1,221	10:00 PM - 11:00 PM		26	267	293	
11:00 AM - 12:00 PM		474	860	1334	11:00 PM - 12:00 AM		13	79	92	
Total		2,918	4,896	7,814	Total		2,944	8,062	11,006	

24-Hour	EB	Volume	5,862	24-Hour	WB	Volume	12,958
----------------	-----------	---------------	--------------	----------------	-----------	---------------	---------------



24 Hour Segment Count

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



Location: 6. Siempre Viva Road: Paseo De Las Americas to Enrico Fermi Drive

Orientation: East-West

Date of Count: Wednesday, May 13, 2015

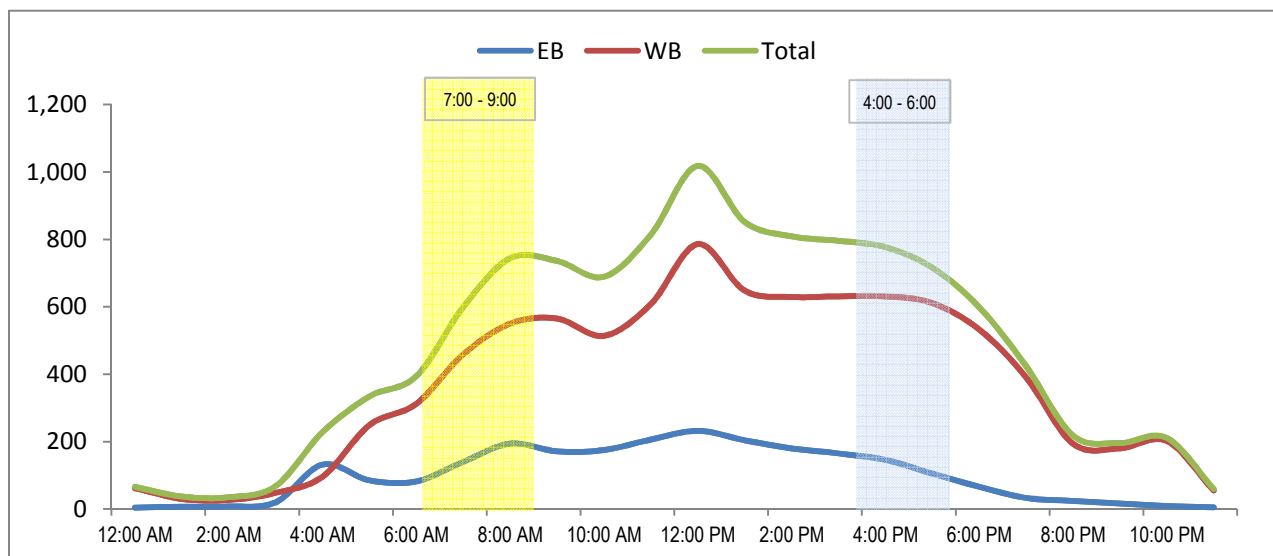
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0354

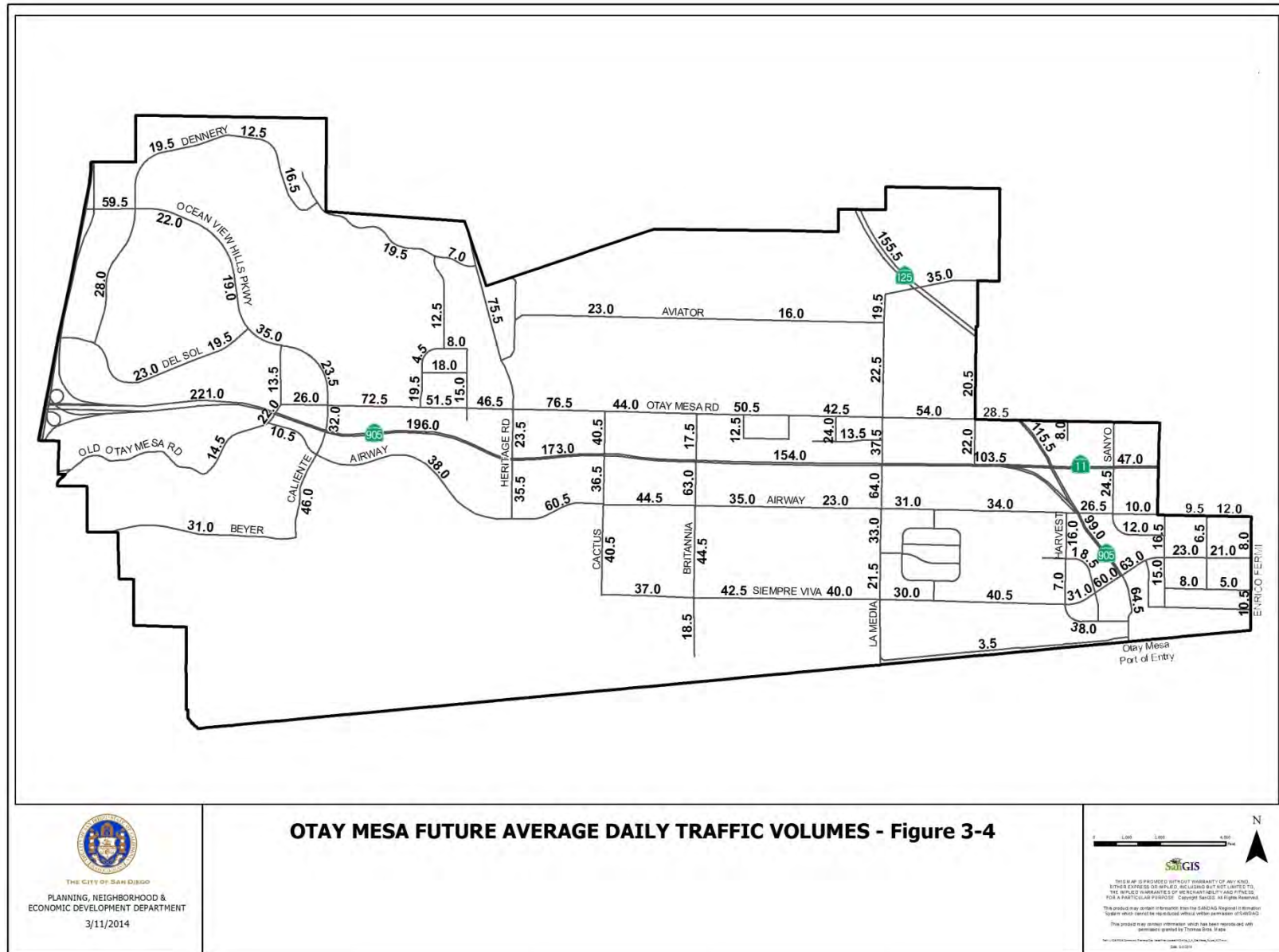
24 Hour Segment Volume						11,420				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		4	62	66		12:00 PM - 1:00 PM		232	786	1,018
1:00 AM - 2:00 AM		7	30	37		1:00 PM - 2:00 PM		204	648	852
2:00 AM - 3:00 AM		8	27	35		2:00 PM - 3:00 PM		180	629	809
3:00 AM - 4:00 AM		20	48	68		3:00 PM - 4:00 PM		165	631	796
4:00 AM - 5:00 AM		132	96	228		4:00 PM - 5:00 PM		146	631	777
5:00 AM - 6:00 AM		85	249	334		5:00 PM - 6:00 PM		105	611	716
6:00 AM - 7:00 AM		82	312	394		6:00 PM - 7:00 PM		66	533	599
7:00 AM - 8:00 AM		140	459	599		7:00 PM - 8:00 PM		33	391	424
8:00 AM - 9:00 AM		194	550	744		8:00 PM - 9:00 PM		24	194	218
9:00 AM - 10:00 AM		171	565	736		9:00 PM - 10:00 PM		16	180	196
10:00 AM - 11:00 AM		175	514	689	10:00 PM - 11:00 PM		9	202	211	
11:00 AM - 12:00 PM		206	608	814	11:00 PM - 12:00 AM		5	55	60	
Total		1,224	3,520	4,744	Total		1,185	5,491	6,676	

24-Hour	EB	Volume	2,409	24-Hour	WB	Volume	9,011
----------------	-----------	---------------	--------------	----------------	-----------	---------------	--------------



APPENDIX B

BUILDOUT EAST OTAY MESA TRAFFIC FORECAST



County of San Diego
GP Update EIR

2030 PLANNING
COMMISSION RECOMMENDED
LOS and Volume Plot

EAST OTAY MESA Area

2030 Proposed Network
Model Rerun 09/03/10
Without Road 3A

Levels of Service:

- A - C
- D
- E
- F

- Non-Circulation Element
- Zone Connector
- Traffic Analysis Zones

Forecasted Volumes:

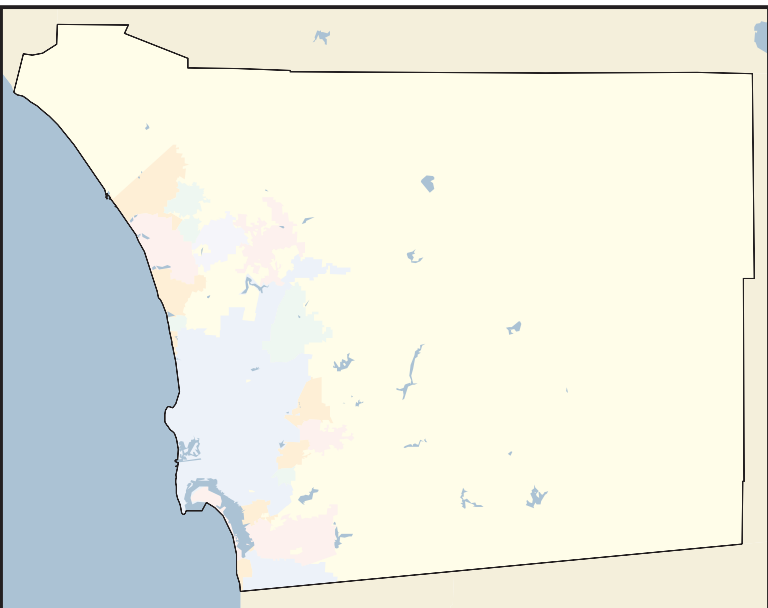
- Adjusted Volume
- Unadjusted Volume

Level of Service Calculations

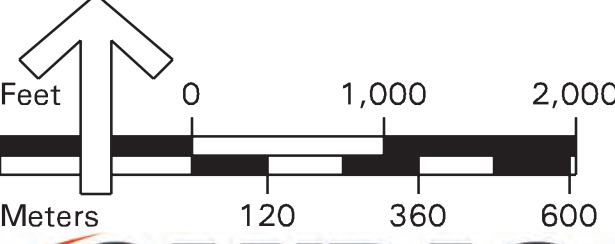
Peak Hour Standards for State Facilities
New County Daily ADT LOS Standards for non-State:

6.1	84	36000	54000	70000	86000	108000
6.2	75	22200	37000	44800	50000	57000
4.1A	74	14800	24700	28800	33400	37000
4.1B	86	13700	22800	27400	30800	34200
4.2A	59	5700	12500	19000	27000	32500
4.2B	71	5000	10900	17200	25000	30000
4.3C	41	2500	5450	8500	12500	15000
2.1A	56	2800	6500	10300	15000	20500
2.1B	64	3000	6000	9500	13500	19000
2.1C	64	3000	6000	9500	13500	19000
2.1D	52	3000	6000	9500	13500	19000
2.1E	48	1900	4100	7100	10900	16200
2.2A	55	3000	6000	9500	13500	19000
2.2B	65	3000	6000	9500	13500	19000
2.2C	65	3000	6000	9500	13500	19000
2.2D	50	3000	6000	9500	13500	19000
2.2E	45	1900	4100	7100	10900	16200
2.2F	45	1350	3300	5600	8700	16200
2.3A	54	1400	3000	5100	8000	12900
2.3B	66	1400	3000	5100	8000	12900
2.3C	42	1350	2700	4500	7000	11300
LPR	39	1350	2700	4500	7000	11300
LPR	34	1350	2700	4500	7000	11300

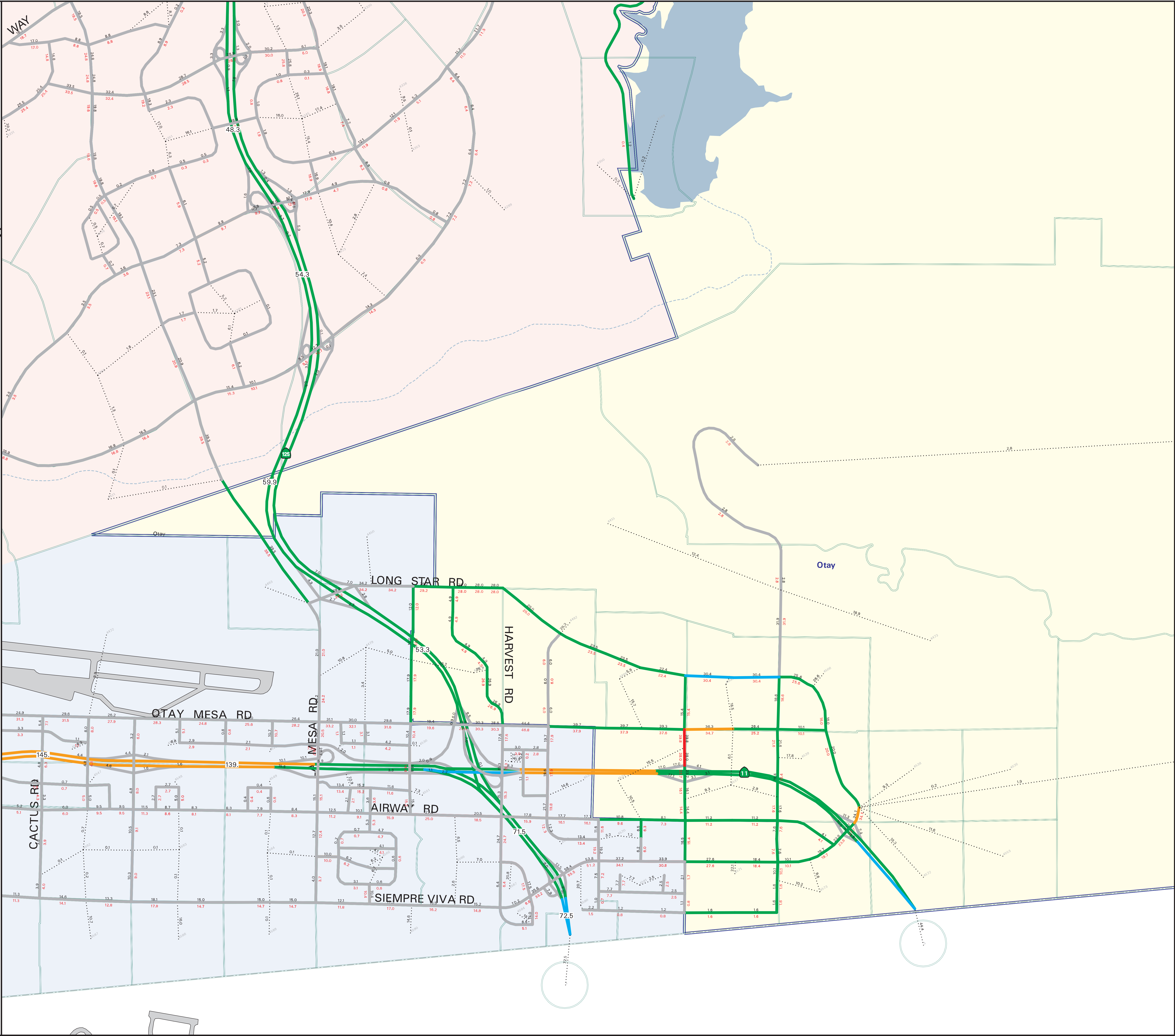
This traffic forecast is based on proprietary information of the County of San Diego and was produced to test the County's proposed DRAFT and BOARD land use assumptions. These data do not reflect SANDAG's 2030 Mobility Emphasis Cities/County Forecast.



San Diego Region



San Diego's Regional Planning Agency
September 3, 2010



APPENDIX C

COUNTY OF SAN DIEGO & CITY OF SAN DIEGO ROADWAY CLASSIFICATION TABLES

TABLE 1
AVERAGE DAILY VEHICLE TRIPS*

MOBILITY ELEMENT ROADS		LEVELS OF SERVICE				
Road Classification	# of Travel Lanes	A	B	C	D	E
Expressway (6.1)	6	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial (6.2)	6	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	w/ Raised Median (4.1A)	4	<14,800	<24,700	<29,600	<33,400
	w/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<30,800
Boulevard	w/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<27,000
	w/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000
Community Collector	w/ Raised Median (2.1A)	2	<10,000	<11,700	<13,400	<15,000
	w/ Continuous Left Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500
	w/ Intermittent Turn Lane (2.1C)	2	<3,000	<6,000	<9,500	<13,500
	w/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900
Light Collector	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500
	w/ Continuous Left Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500
	w/ Intermittent Turn Lane (2.2C)	2	<3,000	<6,000	<9,500	<13,500
	w/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700
Minor Collector	w/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000
	w/ Intermittent Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000
	No Median (2.3C)	2	<1,900	<4,100	<6,000	<7,000
NON-MOBILITY ELEMENT ROADS**		LEVELS OF SERVICE				
Residential Collector	2	-	-	<4,500	-	-
Rural Residential Collector***	2	-	-	<4,500	-	-
Residential Road	2	-	-	<1,500	-	-
Rural Residential Road***	2	-	-	<1,500	-	-
Residential Cul-de-Sac or Loop Road	2	-	-	<200	-	-

* The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

*** Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

**** See Tables 2A and 2B for roadway surfacing and right-of-way widths.

TABLE 2
Roadway Classifications, Levels of Service (LOS)
and Average Daily Traffic (ADT)

STREET CLASSIFICATION	LANES	CROSS SECTIONS	LEVEL OF SERVICE				
			A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Primary Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multifamily)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

LEGEND:

XXX/XXX = Curb to curb width (feet)/right-of-way width (feet): based on the City of San Diego Street Design Manual

XX/XXX= Approximate recommended ADT based on the City of San Diego Street Design Manual.

NOTES:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.
2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

APPENDIX D

EXISTING SYNCHRO INTERSECTION ANALYSIS
WORKSHEETS

HCM 2010 Signalized Intersection Summary

1: Heritage Road & Otay Mesa Rd

Existing AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	183	132	117	46	87	137	63	47	20	117	24	64
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	206	148	131	52	98	154	71	53	22	131	27	72
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	286	1741	584	1159	2938	984	202	92	38	170	106	390
Arrive On Green	0.08	0.37	0.37	0.34	0.62	0.62	0.11	0.08	0.07	0.10	0.06	0.06
Sat Flow, veh/h	3442	4715	1582	3442	4715	1580	1774	1230	511	1774	1863	2787
Grp Volume(v), veh/h	206	148	131	52	98	154	71	0	75	131	27	72
Grp Sat Flow(s),veh/h/ln	1721	1572	1582	1721	1572	1580	1774	0	1741	1774	1863	1393
Q Serve(g_s), s	7.6	2.7	7.4	1.3	1.0	3.0	4.8	0.0	5.4	9.4	1.8	2.2
Cycle Q Clear(g_c), s	7.6	2.7	7.4	1.3	1.0	3.0	4.8	0.0	5.4	9.4	1.8	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	286	1741	584	1159	2938	984	202	0	131	170	106	390
V/C Ratio(X)	0.72	0.09	0.22	0.04	0.03	0.16	0.35	0.00	0.57	0.77	0.25	0.18
Avail Cap(c_a), veh/h	635	1741	584	1159	2938	984	287	0	321	423	487	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	26.7	28.2	29.0	9.4	3.2	53.2	0.0	58.2	57.4	58.7	29.5
Incr Delay (d2), s/veh	3.4	0.1	0.9	0.0	0.0	0.3	1.0	0.0	3.9	7.2	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	1.2	3.4	0.6	0.5	1.4	2.4	0.0	2.7	4.9	1.0	0.9
LnGrp Delay(d),s/veh	61.5	26.8	29.1	29.0	9.5	3.6	54.2	0.0	62.1	64.6	59.9	29.7
LnGrp LOS	E	C	C	C	A	A	D		E	E	E	C
Approach Vol, veh/h		485			304			146			230	
Approach Delay, s/veh		42.2			9.8			58.3			53.1	
Approach LOS		D			A			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	47.8	52.0	18.8	11.4	14.8	85.0	16.5	13.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	47.5	20.5	33.5	23.5	34.5	30.5	23.5				
Max Q Clear Time (g_c+I1), s	3.3	9.4	6.8	4.2	9.6	5.0	11.4	7.4				
Green Ext Time (p_c), s	0.1	1.3	0.6	0.4	0.7	1.4	0.7	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			37.9									
HCM 2010 LOS			D									
Notes												
User approved changes to right turn type.												

HCM 2010 Signalized Intersection Summary

2: Cactus Rd & Otay Mesa Rd

Existing AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	189	36	76	256	4	15	0	58	3	0	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1748	1900	1863	1729	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	9	195	37	78	264	4	15	0	60	3	0	3
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	45	2596	472	135	3308	50	64	182	154	21	137	117
Arrive On Green	0.05	1.00	1.00	0.08	0.69	0.69	0.04	0.00	0.10	0.01	0.00	0.07
Sat Flow, veh/h	1774	4059	738	1774	4791	72	1774	1863	1574	1774	1863	1583
Grp Volume(v), veh/h	9	151	81	78	173	95	15	0	60	3	0	3
Grp Sat Flow(s),veh/h/ln	1774	1590	1616	1774	1574	1716	1774	1863	1574	1774	1863	1583
Q Serve(g_s), s	0.6	0.0	0.0	5.5	2.3	2.4	1.1	0.0	4.6	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.0	5.5	2.3	2.4	1.1	0.0	4.6	0.2	0.0	0.2
Prop In Lane	1.00		0.46	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	45	2034	1033	135	2173	1185	64	182	154	21	137	117
V/C Ratio(X)	0.20	0.07	0.08	0.58	0.08	0.08	0.23	0.00	0.39	0.14	0.00	0.03
Avail Cap(c_a), veh/h	143	2034	1033	161	2173	1185	143	695	587	143	695	591
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.99	0.99	0.99	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.5	0.0	0.0	58.0	6.6	6.6	60.9	0.0	55.0	63.6	0.0	55.9
Incr Delay (d2), s/veh	2.1	0.1	0.1	3.8	0.1	0.1	1.9	0.0	1.6	3.1	0.0	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	0.3	0.0	0.0	2.9	1.0	1.2	0.6	0.0	2.1	0.1	0.0	0.1
LnGrp Delay(d),s/veh	62.6	0.1	0.1	61.8	6.7	6.7	62.8	0.0	56.6	66.7	0.0	56.0
LnGrp LOS	E	A	A	E	A	A	E		E	E		E
Approach Vol, veh/h	241			346			75			6		
Approach Delay, s/veh	2.4			19.1			57.8			61.3		
Approach LOS	A			B			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	89.8	9.9	15.2	8.5	96.5	6.7	18.3				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	6.1	* 5.7	7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	11.5	36.0	* 10	48.0	* 10	37.3	* 10	48.0				
Max Q Clear Time (g_c+I1), s	17.5	2.0	3.1	2.2	2.6	4.4	2.2	6.6				
Green Ext Time (p_c), s	0.1	2.3	0.0	0.3	0.0	2.3	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			17.8									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary

3: Britannia Blvd & Otay Mesa Rd

Existing AM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑↑	↑
Volume (veh/h)	137	113	137	156	180	286
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1863	1863	1727	1863	1863
Adj Flow Rate, veh/h	147	122	147	168	194	308
Adj No. of Lanes	3	1	1	3	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	2	2	10	2	2
Cap, veh/h	1639	915	416	3045	793	365
Arrive On Green	0.35	0.35	0.23	0.65	0.23	0.23
Sat Flow, veh/h	4871	1583	1774	4871	3442	1583
Grp Volume(v), veh/h	147	122	147	168	194	308
Grp Sat Flow(s), veh/h/ln	1572	1583	1774	1572	1721	1583
Q Serve(g_s), s	2.2	3.7	7.3	1.4	4.8	19.5
Cycle Q Clear(g_c), s	2.2	3.7	7.3	1.4	4.8	19.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1639	915	416	3045	793	365
V/C Ratio(X)	0.09	0.13	0.35	0.06	0.24	0.84
Avail Cap(c_a), veh/h	1639	915	416	3045	1295	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.99	0.99	0.99	0.99
Uniform Delay (d), s/veh	23.1	10.1	33.6	6.8	32.9	38.6
Incr Delay (d2), s/veh	0.1	0.3	0.5	0.0	0.2	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.6	3.6	0.6	2.3	9.1
LnGrp Delay(d),s/veh	23.2	10.4	34.1	6.9	33.1	44.5
LnGrp LOS	C	B	C	A	C	D
Approach Vol, veh/h	269			315	502	
Approach Delay, s/veh	17.4			19.6	40.1	
Approach LOS	B			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	31.3	43.2				74.5		30.5
Change Period (Y+Rc), s	7.2	* 7.2				7.2		6.8
Max Green Setting (Gmax), s	10.3	* 36				52.0		39.0
Max Q Clear Time (g_c+1), s	19.3	5.7				3.4		21.5
Green Ext Time (p_c), s	0.1	1.2				1.4		2.2

Intersection Summary

HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

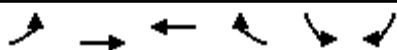
Existing AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	175	64	339	189	33	35	84	677	23	65	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1746	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	41	201	74	390	217	38	40	97	778	26	75	17
Adj No. of Lanes	1	3	1	1	3	0	1	1	0	2	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	10	2	2	10	10	2	2	2	2	2	2
Cap, veh/h	661	428	142	664	380	64	102	60	480	163	479	109
Arrive On Green	0.37	0.09	0.09	0.37	0.09	0.09	0.06	0.34	0.33	0.05	0.33	0.32
Sat Flow, veh/h	1774	4715	1568	1774	4103	690	1774	178	1429	3442	1469	333
Grp Volume(v), veh/h	41	201	74	390	166	89	40	0	875	26	0	92
Grp Sat Flow(s),veh/h/ln	1774	1572	1568	1774	1589	1615	1774	0	1607	1721	0	1802
Q Serve(g_s), s	2.2	6.1	5.7	26.4	7.5	7.9	3.3	0.0	50.4	1.1	0.0	5.4
Cycle Q Clear(g_c), s	2.2	6.1	5.7	26.4	7.5	7.9	3.3	0.0	50.4	1.1	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.89	1.00		0.18
Lane Grp Cap(c), veh/h	661	428	142	664	294	150	102	0	540	163	0	587
V/C Ratio(X)	0.06	0.47	0.52	0.59	0.56	0.59	0.39	0.00	1.62	0.16	0.00	0.16
Avail Cap(c_a), veh/h	661	1339	445	664	1184	602	124	0	540	241	0	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.99	0.99	0.99	0.94	0.00	0.94	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	64.8	46.2	37.6	65.1	65.4	68.2	0.0	50.0	68.6	0.0	35.9
Incr Delay (d2), s/veh	0.0	3.3	11.8	1.3	7.5	16.0	2.3	0.0	286.9	0.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.8	2.9	13.2	3.6	4.2	1.7	0.0	65.4	0.5	0.0	2.7
LnGrp Delay(d),s/veh	30.3	68.1	58.0	39.0	72.7	81.5	70.5	0.0	337.0	69.0	0.0	36.1
LnGrp LOS	C	E	E	D	E	F	E		F	E		D
Approach Vol, veh/h	316				645				915		118	
Approach Delay, s/veh	60.8				53.5				325.3		43.3	
Approach LOS	E				D				F		D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	61.4	20.3	13.8	54.5	61.1	20.6	12.3	56.0				
Change Period (Y+Rc), s	5.7	* 7.2	* 5.7	6.1	5.7	* 7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	23.3	* 42	* 10	49.9	10.0	* 55	* 10	49.9				
Max Q Clear Time (g_c+20), s	20.4	8.1	5.3	7.4	4.2	9.9	3.1	52.4				
Green Ext Time (p_c), s	0.0	1.3	0.0	6.6	1.0	1.2	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	178.8											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary

5: Otay Mesa Rd & Piper Ranch Rd

Existing AM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	184	691	475	74	68	86
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	209	785	540	84	58	118
Adj No. of Lanes	1	2	3	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	10	10	2	2	2
Cap, veh/h	659	2649	1729	687	119	213
Arrive On Green	0.37	0.81	0.37	0.37	0.07	0.07
Sat Flow, veh/h	1774	3368	4871	1583	1774	3167
Grp Volume(v), veh/h	209	785	540	84	58	118
Grp Sat Flow(s), veh/h/ln	1774	1641	1572	1583	1774	1583
Q Serve(g_s), s	7.6	5.5	7.4	2.9	2.8	3.2
Cycle Q Clear(g_c), s	7.6	5.5	7.4	2.9	2.8	3.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	659	2649	1729	687	119	213
V/C Ratio(X)	0.32	0.30	0.31	0.12	0.49	0.55
Avail Cap(c_a), veh/h	659	2649	1729	687	710	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.89	0.89	1.00	1.00
Uniform Delay (d), s/veh	20.1	2.2	20.4	15.2	40.5	40.7
Incr Delay (d2), s/veh	0.2	0.3	0.4	0.3	3.0	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8.8	2.5	3.3	1.5	1.5	2.9
LnGrp Delay(d), s/veh	20.4	2.5	20.8	15.6	43.5	42.9
LnGrp LOS	C	A	C	B	D	D
Approach Vol, veh/h		994	624		176	
Approach Delay, s/veh		6.2	20.1		43.1	
Approach LOS		A	C		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		78.9		11.1	39.7	39.2		
Change Period (Y+Rc), s		6.2		5.1	6.2	* 6.2		
Max Green Setting (Gmax), s		42.7		36.0	5.0	* 33		
Max Q Clear Time (g_c+I1), s		7.5		5.2	9.6	9.4		
Green Ext Time (p_c), s		5.4		0.8	0.0	3.1		

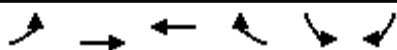
Intersection Summary								
HCM 2010 Ctrl Delay			14.7					
HCM 2010 LOS			B					

Notes
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

6: Otay Mesa Rd & SR 125 SB Off-Ramp

Existing AM
4/7/2016

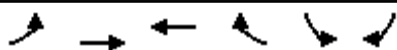


Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑↑	↑↑↑↑		↘↘	↗		
Volume (veh/h)	0	759	167	0	456	382		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1727	1727	0	1863	1863		
Adj Flow Rate, veh/h	0	973	214	0	585	490		
Adj No. of Lanes	0	3	3	0	2	1		
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78		
Percent Heavy Veh, %	0	10	10	0	2	2		
Cap, veh/h	0	2141	2141	0	1173	540		
Arrive On Green	0.00	0.45	0.45	0.00	0.34	0.34		
Sat Flow, veh/h	0	5026	5026	0	3442	1583		
Grp Volume(v), veh/h	0	973	214	0	585	490		
Grp Sat Flow(s),veh/h/ln	0	1572	1572	0	1721	1583		
Q Serve(g_s), s	0.0	8.5	1.6	0.0	8.1	17.7		
Cycle Q Clear(g_c), s	0.0	8.5	1.6	0.0	8.1	17.7		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2141	2141	0	1173	540		
V/C Ratio(X)	0.00	0.45	0.10	0.00	0.50	0.91		
Avail Cap(c_a), veh/h	0	2141	2141	0	1182	544		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	0.96	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	11.3	9.4	0.0	15.7	18.9		
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.0	0.3	19.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.8	0.7	0.0	3.9	10.5		
LnGrp Delay(d),s/veh	0.0	11.9	9.5	0.0	16.0	37.9		
LnGrp LOS		B	A		B	D		
Approach Vol, veh/h		973	214		1075			
Approach Delay, s/veh		11.9	9.5		26.0			
Approach LOS		B	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.9		26.1		33.9		
Change Period (Y+Rc), s		7.2		6.1		7.2		
Max Green Setting (Gmax), s		26.6		20.1		26.6		
Max Q Clear Time (g_c+I1), s		10.5		19.7		3.6		
Green Ext Time (p_c), s		5.6		0.2		6.4		
Intersection Summary								
HCM 2010 Ctrl Delay			18.4					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

7: Otay Mesa Rd & SR125 NB On-Ramp

Existing AM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LT	TH	TH	TH	LT	TH
Volume (veh/h)	164	1051	167	66	0	0
Number	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1737	1863		
Adj Flow Rate, veh/h	202	1298	220	72		
Adj No. of Lanes	2	2	3	1		
Peak Hour Factor	0.81	0.81	0.81	0.81		
Percent Heavy Veh, %	2	10	10	2		
Cap, veh/h	428	14448	21615	6566		
Arrive On Green	0.12	1.00	1.00	1.00		
Sat Flow, veh/h	3442	3368	5211	1583		
Grp Volume(v), veh/h	202	1298	220	72		
Grp Sat Flow(s),veh/h/ln	1721	1641	1737	1583		
Q Serve(g_s), s	2.2	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.0		
Prop In Lane	1.00			1.00		
Lane Grp Cap(c), veh/h	428	14448	21615	6566		
V/C Ratio(X)	0.47	0.09	0.01	0.01		
Avail Cap(c_a), veh/h	482	14448	21615	6566		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.88	0.88	1.00	1.00		
Uniform Delay (d), s/veh	16.3	0.0	0.0	0.0		
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.0		
LnGrp Delay(d),s/veh	17.0	0.0	0.0	0.0		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		1500	292			
Approach Delay, s/veh		2.3	0.0			
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		187.0			10.2	176.8		
Change Period (Y+Rc), s		* 7.2			* 5.7	7.2		
Max Green Setting (Gmax), s		* 37			* 5.1	22.0		
Max Q Clear Time (g_c+l1), s		2.0			4.2	2.0		
Green Ext Time (p_c), s		10.8			0.1	8.8		

Intersection Summary

HCM 2010 Ctrl Delay	1.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection												
Int Delay, s/veh		0.2										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	1046	1	0	229	1	1	0	0	1	0	3
Conflicting Peds, #/hr	0	0	1	0	0	1	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	5	1324	1	0	290	1	1	0	0	1	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	291	0	0	1326	0	0	1481	1627	665	964	1627	147
Stage 1	-	-	-	-	-	-	1336	1336	-	291	291	-
Stage 2	-	-	-	-	-	-	145	291	-	673	1336	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1268	-	-	517	-	-	87	101	403	210	101	873
Stage 1	-	-	-	-	-	-	162	221	-	693	670	-
Stage 2	-	-	-	-	-	-	843	670	-	411	221	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1267	-	-	517	-	-	85	99	402	207	99	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	85	99	-	207	99	-
Stage 1	-	-	-	-	-	-	159	218	-	683	670	-
Stage 2	-	-	-	-	-	-	839	670	-	404	218	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			48			12.5		
HCM LOS							E			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	85	1267	-	-	517	-	-	484				
HCM Lane V/C Ratio	0.015	0.004	-	-	-	-	-	0.01				
HCM Control Delay (s)	48	7.9	0.1	-	0	-	-	12.5				
HCM Lane LOS	E	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

HCM 2010 Signalized Intersection Summary
9: Sanyo Ave & Otay Mesa Rd

Existing AM
4/7/2016

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↰	↑	↰↰			
Volume (veh/h)	702	345	7	144	86	8		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1770	1900	1863	1727	1863	1900		
Adj Flow Rate, veh/h	878	431	9	180	117	0		
Adj No. of Lanes	2	0	1	1	2	1		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80		
Percent Heavy Veh, %	10	10	2	10	2	0		
Cap, veh/h	1308	635	21	1221	254	115		
Arrive On Green	0.60	0.60	0.01	0.71	0.07	0.00		
Sat Flow, veh/h	2268	1058	1774	1727	3548	1615		
Grp Volume(v), veh/h	675	634	9	180	117	0		
Grp Sat Flow(s),veh/h/ln	1681	1557	1774	1727	1774	1615		
Q Serve(g_s), s	16.1	16.5	0.3	2.0	1.9	0.0		
Cycle Q Clear(g_c), s	16.1	16.5	0.3	2.0	1.9	0.0		
Prop In Lane		0.68	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1009	934	21	1221	254	115		
V/C Ratio(X)	0.67	0.68	0.44	0.15	0.46	0.00		
Avail Cap(c_a), veh/h	1009	934	148	1221	296	135		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	8.0	8.1	29.5	2.9	26.7	0.0		
Incr Delay (d2), s/veh	3.5	4.0	13.9	0.3	1.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.3	7.9	0.2	1.0	1.0	0.0		
LnGrp Delay(d),s/veh	11.5	12.0	43.4	3.1	28.1	0.0		
LnGrp LOS	B	B	D	A	C			
Approach Vol, veh/h	1309			189	117			
Approach Delay, s/veh	11.8			5.0	28.1			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.4	43.2				49.6		10.4
Change Period (Y+Rc), s	* 5.7	7.2				7.2		6.1
Max Green Setting (Gmax), s	* 5	31.0				41.7		5.0
Max Q Clear Time (g_c+I1), s	2.3	18.5				4.0		3.9
Green Ext Time (p_c), s	0.0	6.0				9.2		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			12.2					
HCM 2010 LOS			B					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

11: Enrico Fermi Rd & Otay Mesa Rd

Existing AM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Volume (veh/h)	676	31	13	138	16	47		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1856	1900	1863	1727	1863	1863		
Adj Flow Rate, veh/h	889	41	17	182	21	62		
Adj No. of Lanes	1	0	1	1	1	1		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76		
Percent Heavy Veh, %	2	2	2	10	2	2		
Cap, veh/h	1046	48	30	1212	158	126		
Arrive On Green	0.59	0.58	0.02	0.70	0.09	0.08		
Sat Flow, veh/h	1761	81	1774	1727	1774	1583		
Grp Volume(v), veh/h	0	930	17	182	21	62		
Grp Sat Flow(s),veh/h/ln	0	1842	1774	1727	1774	1583		
Q Serve(g_s), s	0.0	21.8	0.5	1.8	0.6	2.0		
Cycle Q Clear(g_c), s	0.0	21.8	0.5	1.8	0.6	2.0		
Prop In Lane		0.04	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	0	1094	30	1212	158	126		
V/C Ratio(X)	0.00	0.85	0.57	0.15	0.13	0.49		
Avail Cap(c_a), veh/h	0	2767	192	2939	658	572		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	8.8	25.7	2.6	22.1	23.2		
Incr Delay (d2), s/veh	0.0	2.0	16.2	0.1	0.4	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	11.4	0.4	0.9	0.3	1.0		
LnGrp Delay(d),s/veh	0.0	10.7	41.9	2.7	22.5	26.1		
LnGrp LOS		B	D	A	C	C		
Approach Vol, veh/h	930			199	83			
Approach Delay, s/veh	10.7			6.0	25.2			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.7	36.7				42.4		10.2
Change Period (Y+Rc), s	4.8	6.0				6.0		6.0
Max Green Setting (Gmax), s	5.7	78.5				89.0		19.0
Max Q Clear Time (g_c+I), s	12.5	23.8				3.8		4.0
Green Ext Time (p_c), s	0.0	6.9				7.0		0.2
Intersection Summary								
HCM 2010 Ctrl Delay		11.0						
HCM 2010 LOS		B						

HCM 2010 Signalized Intersection Summary

12: Britannia Blvd & SR-905 WB Ramps

Existing AM
4/7/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	136	4	216	129	250	0	0	218	32
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1810	1807	1810	1810	1727	0	0	1737	1900
Adj Flow Rate, veh/h				145	0	233	137	266	0	0	232	34
Adj No. of Lanes				1	0	2	2	3	0	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				5	10	5	5	10	0	0	10	10
Cap, veh/h				202	0	361	211	3627	0	0	2745	390
Arrive On Green				0.12	0.00	0.12	0.06	0.77	0.00	0.00	0.65	0.65
Sat Flow, veh/h				1723	0	3076	3343	4871	0	0	4354	596
Grp Volume(v), veh/h				145	0	233	137	266	0	0	173	93
Grp Sat Flow(s),veh/h/ln				1723	0	1538	1672	1572	0	0	1581	1632
Q Serve(g_s), s				7.3	0.0	6.5	3.6	1.2	0.0	0.0	1.8	1.9
Cycle Q Clear(g_c), s				7.3	0.0	6.5	3.6	1.2	0.0	0.0	1.8	1.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.37
Lane Grp Cap(c), veh/h				202	0	361	211	3627	0	0	2068	1067
V/C Ratio(X)				0.72	0.00	0.64	0.65	0.07	0.00	0.00	0.08	0.09
Avail Cap(c_a), veh/h				553	0	988	568	3627	0	0	2068	1067
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.99	0.99	0.00	0.00	0.87	0.87
Uniform Delay (d), s/veh				38.3	0.0	37.9	41.2	2.5	0.0	0.0	5.7	5.7
Incr Delay (d2), s/veh				4.7	0.0	1.9	3.3	0.0	0.0	0.0	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.7	0.0	2.8	1.8	0.5	0.0	0.0	0.8	0.9
LnGrp Delay(d),s/veh				42.9	0.0	39.8	44.5	2.6	0.0	0.0	5.8	5.9
LnGrp LOS				D		D	D	A			A	A
Approach Vol, veh/h					378			403			266	
Approach Delay, s/veh					41.0			16.8			5.8	
Approach LOS					D			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		74.3			10.4	64.0		15.7				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		50.9			* 15	30.9		28.9				
Max Q Clear Time (g_c+I1), s		3.2			5.6	3.9		9.3				
Green Ext Time (p_c), s		4.0			0.3	3.7		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				22.8								
HCM 2010 LOS				C								

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

13: Britannia Blvd & SR-905 EB Ramps

Existing AM
4/7/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰		↱	↰	↱
Volume (veh/h)	160	2	621	0	0	0	0	219	38	52	302	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1809	1810				0	1739	1900	1810	1727	0
Adj Flow Rate, veh/h	176	2	682				0	241	42	57	332	0
Adj No. of Lanes	0	1	2				0	2	0	2	3	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	10	5				0	10	10	5	10	0
Cap, veh/h	499	6	793				0	1342	231	150	2732	0
Arrive On Green	0.29	0.29	0.29				0.00	0.48	0.48	0.04	0.58	0.00
Sat Flow, veh/h	1704	19	2707				0	2908	485	3343	4871	0
Grp Volume(v), veh/h	178	0	682				0	140	143	57	332	0
Grp Sat Flow(s),veh/h/ln	1723	0	1354				0	1652	1654	1672	1572	0
Q Serve(g_s), s	6.5	0.0	19.0				0.0	3.9	4.0	1.3	2.5	0.0
Cycle Q Clear(g_c), s	6.5	0.0	19.0				0.0	3.9	4.0	1.3	2.5	0.0
Prop In Lane	0.99		1.00				0.00		0.29	1.00		0.00
Lane Grp Cap(c), veh/h	505	0	793				0	786	787	150	2732	0
V/C Ratio(X)	0.35	0.00	0.86				0.00	0.18	0.18	0.38	0.12	0.00
Avail Cap(c_a), veh/h	601	0	944				0	786	787	305	2732	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	22.3	0.0	26.7				0.0	12.0	12.0	37.1	7.6	0.0
Incr Delay (d2), s/veh	0.4	0.0	7.1				0.0	0.5	0.5	1.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	7.9				0.0	1.9	1.9	0.6	1.1	0.0
LnGrp Delay(d),s/veh	22.7	0.0	33.8				0.0	12.5	12.5	38.7	7.7	0.0
LnGrp LOS	C		C					B	B	D	A	
Approach Vol, veh/h		860						283			389	
Approach Delay, s/veh		31.5						12.5			12.2	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	8.3	43.2		28.5		51.5		
Change Period (Y+Rc), s	4.7	5.1		5.1		5.1		
Max Green Setting (Gmax), s	7.3	29.9		27.9		41.9		
Max Q Clear Time (g_c+I), s	13.3	6.0		21.0		4.5		
Green Ext Time (p_c), s	0.0	4.1		2.4		4.5		

Intersection Summary

HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

14: La Media Rd & St Andrews Ave/SR-905 WB Ramps

Existing AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	38	8	33	87	116	799	84	0	507	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1729	1810	1810	1727	1810	0	1727	1810
Adj Flow Rate, veh/h	0	0	44	9	38	101	135	929	98	0	590	27
Adj No. of Lanes	1	1	0	1	1	1	2	2	1	0	3	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	5	10	10	5	10	5	5	10	5	0	10	5
Cap, veh/h	64	0	57	149	150	133	206	2318	1084	0	2794	911
Arrive On Green	0.00	0.00	0.04	0.09	0.09	0.09	0.06	0.71	0.71	0.00	0.59	0.59
Sat Flow, veh/h	1723	0	1538	1723	1729	1538	3343	3282	1535	0	4871	1538
Grp Volume(v), veh/h	0	0	44	9	38	101	135	929	98	0	590	27
Grp Sat Flow(s),veh/h/ln	1723	0	1538	1723	1729	1538	1672	1641	1535	0	1572	1538
Q Serve(g_s), s	0.0	0.0	2.6	0.4	1.8	5.8	3.6	10.4	1.8	0.0	5.2	0.7
Cycle Q Clear(g_c), s	0.0	0.0	2.6	0.4	1.8	5.8	3.6	10.4	1.8	0.0	5.2	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	64	0	57	149	150	133	206	2318	1084	0	2794	911
V/C Ratio(X)	0.00	0.00	0.77	0.06	0.25	0.76	0.66	0.40	0.09	0.00	0.21	0.03
Avail Cap(c_a), veh/h	151	0	135	266	267	238	420	2318	1084	0	2794	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69	0.00	0.84	0.84
Uniform Delay (d), s/veh	0.0	0.0	43.0	37.7	38.4	40.2	41.3	5.4	4.1	0.0	8.5	7.6
Incr Delay (d2), s/veh	0.0	0.0	19.4	0.2	0.9	8.4	2.4	0.4	0.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.4	0.2	0.9	2.8	1.7	4.8	0.8	0.0	2.3	0.3
LnGrp Delay(d),s/veh	0.0	0.0	62.4	37.9	39.3	48.6	43.7	5.8	4.3	0.0	8.7	7.7
LnGrp LOS			E	D	D	D	D	A	A		A	A
Approach Vol, veh/h		44			148			1162			617	
Approach Delay, s/veh		62.4			45.5			10.1			8.6	
Approach LOS		E			D			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		68.7		8.4	10.2	58.4		12.9				
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		52.9		7.9	* 11	36.9		13.9				
Max Q Clear Time (g_c+I1), s		12.4		4.6	5.6	7.2		7.8				
Green Ext Time (p_c), s		16.2		0.0	0.2	14.2		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			13.4									
HCM 2010 LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

15: La Media Rd & SR-905 EB Ramps

Existing AM
4/7/2016



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	816	407	7	183	182	97		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1810	1727	1727	1810		
Adj Flow Rate, veh/h	983	490	8	220	219	117		
Adj No. of Lanes	2	2	2	3	2	1		
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83		
Percent Heavy Veh, %	5	5	5	10	10	5		
Cap, veh/h	1143	926	33	2666	1683	1315		
Arrive On Green	0.34	0.34	0.01	0.57	0.51	0.51		
Sat Flow, veh/h	3343	2707	3343	4871	3368	1538		
Grp Volume(v), veh/h	983	490	8	220	219	117		
Grp Sat Flow(s),veh/h/ln	1672	1354	1672	1572	1641	1538		
Q Serve(g_s), s	30.1	16.0	0.3	2.3	3.8	1.3		
Cycle Q Clear(g_c), s	30.1	16.0	0.3	2.3	3.8	1.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1143	926	33	2666	1683	1315		
V/C Ratio(X)	0.86	0.53	0.24	0.08	0.13	0.09		
Avail Cap(c_a), veh/h	1395	1130	161	2666	1683	1315		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.99	0.99		
Uniform Delay (d), s/veh	33.7	29.1	54.1	10.9	14.0	1.3		
Incr Delay (d2), s/veh	4.8	0.5	3.7	0.1	0.2	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	14.7	12.4	0.1	1.0	1.8	1.9		
LnGrp Delay(d),s/veh	38.6	29.6	57.8	11.0	14.1	1.4		
LnGrp LOS	D	C	E	B	B	A		
Approach Vol, veh/h	1473			228	336			
Approach Delay, s/veh	35.6			12.6	9.7			
Approach LOS	D			B	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		67.3		42.7	5.8	61.5		
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		
Max Green Setting (Gmax), s		53.9		45.9	* 5.3	43.9		
Max Q Clear Time (g_c+l1), s		4.3		32.1	2.3	5.8		
Green Ext Time (p_c), s		3.7		5.5	0.0	3.6		
Intersection Summary								
HCM 2010 Ctrl Delay			28.7					
HCM 2010 LOS			C					

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh10.4

Intersection LOS B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	28	52	42	0	3	75	58	0	18	42	7	0	44	189	68
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	10	2	10	2	10	2	10	2	10	2	10	2	10	2	10	2
Mvmt Flow	0	30	56	45	0	3	81	62	0	19	45	8	0	47	203	73
Number of Lanes	0	0	1	0	0	1	2	0	0	1	1	0	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	1
HCM Control Delay	10.3	9	9.5	11.2
HCM LOS	B	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	23%	100%	0%	0%	19%	0%
Vol Thru, %	0%	86%	43%	0%	100%	30%	81%	0%
Vol Right, %	0%	14%	34%	0%	0%	70%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	49	122	3	50	83	233	68
LT Vol	18	0	28	3	0	0	44	0
Through Vol	0	42	52	0	50	25	189	0
RT Vol	0	7	42	0	0	58	0	68
Lane Flow Rate	19	53	131	3	54	89	251	73
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.036	0.091	0.218	0.006	0.088	0.13	0.39	0.1
Departure Headway (Hd)	6.659	6.19	5.976	6.346	5.979	5.348	5.714	5.052
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	540	582	603	567	603	675	634	714
Service Time	4.367	3.899	3.681	4.046	3.679	3.048	3.414	2.752
HCM Lane V/C Ratio	0.035	0.091	0.217	0.005	0.09	0.132	0.396	0.102
HCM Control Delay	9.6	9.5	10.3	9.1	9.3	8.8	12	8.3
HCM Lane LOS	A	A	B	A	A	A	B	A
HCM 95th-tile Q	0.1	0.3	0.8	0	0.3	0.4	1.8	0.3

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	43	10	17	77	2	47	28	20	1	49	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	150	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	10	2	2	10	2	2	10	2	2	10	2
Mvmt Flow	22	54	12	21	96	2	59	35	25	1	61	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	68	0	0	234	254	35	237	259	55
Stage 1	-	-	-	-	-	-	107	107	-	146	146	-
Stage 2	-	-	-	-	-	-	127	147	-	91	113	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.7	6.94	7.54	6.7	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.1	3.32	3.52	4.1	3.32
Pot Cap-1 Maneuver	1484	-	-	1531	-	-	701	630	1030	697	626	1000
Stage 1	-	-	-	-	-	-	887	787	-	842	756	-
Stage 2	-	-	-	-	-	-	863	756	-	906	782	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1484	-	-	1531	-	-	622	608	1028	633	604	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	622	608	-	633	604	-
Stage 1	-	-	-	-	-	-	872	774	-	825	742	-
Stage 2	-	-	-	-	-	-	769	742	-	831	769	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.9			1.3			10.8			11.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	622	733	1484	-	-	1531	-	-	654			
HCM Lane V/C Ratio	0.094	0.082	0.015	-	-	0.014	-	-	0.119			
HCM Control Delay (s)	11.4	10.3	7.5	-	-	7.4	-	-	11.2			
HCM Lane LOS	B	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.3	0.3	0	-	-	0	-	-	0.4			

HCM 2010 Signalized Intersection Summary
18: Enrico Fermi Rd & Airway Rd

Existing AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	2	17	5	5	1	38	66	15	1	45	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1750	1900	1863	1762	1900
Adj Flow Rate, veh/h	14	2	18	5	5	1	41	72	16	1	49	18
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	10	2	2	10	2	2	10	10	2	10	10
Cap, veh/h	55	272	392	10	256	234	132	614	132	6	411	143
Arrive On Green	0.03	0.16	0.17	0.01	0.15	0.15	0.07	0.23	0.21	0.00	0.17	0.17
Sat Flow, veh/h	1774	1727	1575	1774	1727	1578	1774	2721	586	1774	2435	849
Grp Volume(v), veh/h	14	2	18	5	5	1	41	43	45	1	33	34
Grp Sat Flow(s),veh/h/ln	1774	1727	1575	1774	1727	1578	1774	1663	1644	1774	1674	1610
Q Serve(g_s), s	0.2	0.0	0.3	0.1	0.1	0.0	0.7	0.6	0.7	0.0	0.5	0.5
Cycle Q Clear(g_c), s	0.2	0.0	0.3	0.1	0.1	0.0	0.7	0.6	0.7	0.0	0.5	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.53
Lane Grp Cap(c), veh/h	55	272	392	10	256	234	132	375	371	6	283	272
V/C Ratio(X)	0.25	0.01	0.05	0.52	0.02	0.00	0.31	0.11	0.12	0.17	0.12	0.13
Avail Cap(c_a), veh/h	765	2142	2097	735	2142	1957	1335	2068	2044	835	1637	1575
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	14.3	10.7	8.6	15.0	11.0	10.9	13.2	9.3	9.4	15.0	10.6	10.6
Incr Delay (d2), s/veh	2.4	0.0	0.0	37.0	0.0	0.0	1.3	0.1	0.1	13.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.0	0.0	0.4	0.3	0.3	0.0	0.2	0.3
LnGrp Delay(d),s/veh	16.6	10.7	8.7	51.9	11.0	10.9	14.5	9.4	9.5	28.1	10.8	10.8
LnGrp LOS	B	B	A	D	B	B	B	A	A	C	B	B
Approach Vol, veh/h		34			11			129			68	
Approach Delay, s/veh		12.1			29.6			11.1			11.1	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.7	9.4	6.5	10.6	3.9	9.1	4.8	12.3				
Change Period (Y+Rc), s	3.5	4.6	4.8	6.0	3.5	4.6	4.8	6.0				
Max Green Setting (Gmax), s	12.5	37.4	22.2	29.0	12.5	37.4	14.2	37.0				
Max Q Clear Time (g_c+I1), s	2.1	2.3	2.7	2.5	2.2	2.1	2.0	2.7				
Green Ext Time (p_c), s	0.0	0.1	0.1	0.6	0.0	0.1	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			12.1									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
19: SR905 SB Ramps & Siempre Viva Road/Siempre Viva

Existing AM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↱		↱↱	↑↑↑	↱	↱↱		
Volume (veh/h)	263	86	117	750	0	534		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1784	1900	1863	1759	1863	1863		
Adj Flow Rate, veh/h	302	99	134	862	0	614		
Adj No. of Lanes	3	0	2	3	1	2		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87		
Percent Heavy Veh, %	8	8	2	8	2	2		
Cap, veh/h	1968	606	208	3140	445	699		
Arrive On Green	0.54	0.53	0.06	0.65	0.00	0.25		
Sat Flow, veh/h	3828	1129	3442	4961	1774	2787		
Grp Volume(v), veh/h	265	136	134	862	0	614		
Grp Sat Flow(s),veh/h/ln	1623	1550	1721	1601	1774	1393		
Q Serve(g_s), s	3.7	4.0	3.4	6.8	0.0	19.1		
Cycle Q Clear(g_c), s	3.7	4.0	3.4	6.8	0.0	19.1		
Prop In Lane		0.73	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1742	832	208	3140	445	699		
V/C Ratio(X)	0.15	0.16	0.64	0.27	0.00	0.88		
Avail Cap(c_a), veh/h	1742	832	417	3140	513	805		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	10.5	10.7	41.3	6.6	0.0	32.4		
Incr Delay (d2), s/veh	0.2	0.4	3.3	0.2	0.0	9.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.7	1.8	1.7	3.0	0.0	8.2		
LnGrp Delay(d),s/veh	10.7	11.1	44.7	6.8	0.0	42.3		
LnGrp LOS	B	B	D	A		D		
Approach Vol, veh/h	401			996	614			
Approach Delay, s/veh	10.8			11.9	42.3			
Approach LOS	B			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.5	52.9				63.4		26.6
Change Period (Y+Rc), s	5.1	5.1				* 5.1		4.0
Max Green Setting (Gmax), s	10.5	38.9				* 56		26.0
Max Q Clear Time (g_c+1.5), s	15.4	6.0				8.8		21.1
Green Ext Time (p_c), s	0.2	7.2				7.5		1.5
Intersection Summary								
HCM 2010 Ctrl Delay			21.0					
HCM 2010 LOS			C					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	797	573	0	0	294
Conflicting Peds, #/hr	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	8	8	2	2	2
Mvmt Flow	0	906	651	0	0	334
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	651	0	-	0	1013	326
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	362	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	575	-	-	-	306	572
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	575	-	-	-	306	572
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	618	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		19.8	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	575	-	-	-	572	
HCM Lane V/C Ratio	-	-	-	-	0.584	
HCM Control Delay (s)	0	-	-	-	19.8	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	3.7	

HCM 2010 Signalized Intersection Summary
 21: SR 905 NB Off Ramp/SR 905 NB Ramps & Siempre Viva Road

Existing AM
 4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	119	678	0	0	298	355	275	2	304	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1759	0	0	1797	1863	1900	1863	1863			
Adj Flow Rate, veh/h	121	692	0	0	304	362	281	2	310			
Adj No. of Lanes	2	3	0	0	2	2	0	1	2			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	8	0	0	8	2	2	2	2			
Cap, veh/h	1098	3382	0	0	1200	1056	359	3	568			
Arrive On Green	0.32	0.70	0.00	0.00	0.33	0.33	0.20	0.20	0.20			
Sat Flow, veh/h	3442	4961	0	0	3593	3162	1762	13	2787			
Grp Volume(v), veh/h	121	692	0	0	304	362	283	0	310			
Grp Sat Flow(s),veh/h/ln	1721	1601	0	0	1797	1581	1775	0	1393			
Q Serve(g_s), s	2.5	5.0	0.0	0.0	6.2	8.6	15.1	0.0	10.0			
Cycle Q Clear(g_c), s	2.5	5.0	0.0	0.0	6.2	8.6	15.1	0.0	10.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	1098	3382	0	0	1200	1056	362	0	568			
V/C Ratio(X)	0.11	0.20	0.00	0.00	0.25	0.34	0.78	0.00	0.55			
Avail Cap(c_a), veh/h	1098	3382	0	0	1200	1056	681	0	1070			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.69	0.69	1.00	0.00	1.00			
Uniform Delay (d), s/veh	24.0	5.1	0.0	0.0	24.2	25.0	37.9	0.0	35.7			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.6	3.7	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	2.2	0.0	0.0	3.1	3.9	7.8	0.0	3.9			
LnGrp Delay(d),s/veh	24.1	5.3	0.0	0.0	24.6	25.7	41.7	0.0	36.5			
LnGrp LOS	C	A			C	C	D		D			
Approach Vol, veh/h		813			666			593				
Approach Delay, s/veh		8.1			25.2			39.0				
Approach LOS		A			C			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.0			37.0	38.0		25.0				
Change Period (Y+Rc), s		5.1			5.1	* 5.1		5.1				
Max Green Setting (Gmax), s		51.9			14.3	* 33		37.9				
Max Q Clear Time (g_c+I1), s		7.0			4.5	10.6		17.1				
Green Ext Time (p_c), s		4.4			2.9	3.3		2.8				
Intersection Summary												
HCM 2010 Ctrl Delay				22.4								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
22: Paseo De Las Americas & Siempre Viva Road

Existing AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	175	189	155	7	536	7	144	60	2	3	81	73
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1863	1761	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	194	210	172	8	596	8	160	67	2	3	90	81
Adj No. of Lanes	1	3	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	2	2	8	8	2	2	2	2	2	2
Cap, veh/h	252	1859	611	26	878	12	213	1299	39	17	480	387
Arrive On Green	0.14	0.39	0.39	0.01	0.26	0.25	0.12	0.37	0.37	0.01	0.26	0.25
Sat Flow, veh/h	1774	4803	1580	1774	3379	45	1774	3507	104	1774	1846	1489
Grp Volume(v), veh/h	194	210	172	8	295	309	160	34	35	3	86	85
Grp Sat Flow(s),veh/h/ln	1774	1601	1580	1774	1673	1751	1774	1770	1842	1774	1770	1566
Q Serve(g_s), s	8.0	2.1	5.7	0.3	12.1	12.1	6.6	0.9	0.9	0.1	2.9	3.3
Cycle Q Clear(g_c), s	8.0	2.1	5.7	0.3	12.1	12.1	6.6	0.9	0.9	0.1	2.9	3.3
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.06	1.00		0.95
Lane Grp Cap(c), veh/h	252	1859	611	26	434	455	213	655	682	17	460	407
V/C Ratio(X)	0.77	0.11	0.28	0.31	0.68	0.68	0.75	0.05	0.05	0.17	0.19	0.21
Avail Cap(c_a), veh/h	468	2857	940	105	652	683	398	1141	1188	105	848	751
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	31.5	15.0	16.1	37.1	25.3	25.3	32.4	15.4	15.4	37.4	21.9	22.2
Incr Delay (d2), s/veh	4.9	0.0	0.2	6.4	1.9	1.8	5.2	0.0	0.0	4.6	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.9	2.5	0.2	5.8	6.1	3.6	0.5	0.5	0.1	1.4	1.4
LnGrp Delay(d),s/veh	36.4	15.0	16.3	43.5	27.2	27.1	37.6	15.4	15.4	42.0	22.1	22.5
LnGrp LOS	D	B	B	D	C	C	D	B	B	D	C	C
Approach Vol, veh/h		576			612			229			174	
Approach Delay, s/veh		22.6			27.4			30.9			22.6	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	33.9	13.1	24.2	14.7	24.2	4.6	32.6				
Change Period (Y+Rc), s	4.4	4.9	4.4	4.9	4.4	4.9	4.4	4.9				
Max Green Setting (Gmax), s	4.0	44.8	16.6	36.0	19.6	29.2	4.0	48.6				
Max Q Clear Time (g_c+I), s	12.3	7.7	8.6	5.3	10.0	14.1	2.1	2.9				
Green Ext Time (p_c), s	0.0	4.8	0.3	0.9	0.5	3.9	0.0	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			25.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
23: Enrico Fermi Rd & Siempre Viva Road

Existing AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	11	15	0	27	10	140	73	0	6	26	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1817	1900	1863	1787	1900	1863	1759	1900	1863	1807	1900
Adj Flow Rate, veh/h	54	12	16	0	29	11	152	79	0	7	28	25
Adj No. of Lanes	2	1	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	8	8	2	8	8	2	8	8	2	8	8
Cap, veh/h	1934	397	529	158	218	78	181	611	0	12	161	126
Arrive On Green	0.56	0.56	0.56	0.00	0.09	0.09	0.10	0.18	0.00	0.01	0.09	0.09
Sat Flow, veh/h	3442	706	942	1774	2447	875	1774	3431	0	1774	1828	1436
Grp Volume(v), veh/h	54	0	28	0	20	20	152	79	0	7	26	27
Grp Sat Flow(s),veh/h/ln	1721	0	1648	1774	1697	1625	1774	1671	0	1774	1716	1547
Q Serve(g_s), s	0.8	0.0	0.9	0.0	1.3	1.4	10.1	2.4	0.0	0.5	1.7	1.9
Cycle Q Clear(g_c), s	0.8	0.0	0.9	0.0	1.3	1.4	10.1	2.4	0.0	0.5	1.7	1.9
Prop In Lane	1.00		0.57	1.00		0.54	1.00		0.00	1.00		0.93
Lane Grp Cap(c), veh/h	1934	0	927	158	151	144	181	611	0	12	151	136
V/C Ratio(X)	0.03	0.00	0.03	0.00	0.13	0.14	0.84	0.13	0.00	0.57	0.17	0.20
Avail Cap(c_a), veh/h	1934	0	927	444	424	406	245	1103	0	59	386	348
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.7	0.0	11.7	0.0	50.4	50.4	52.9	41.0	0.0	59.4	50.7	50.8
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.4	0.4	17.2	0.1	0.0	35.3	0.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.4	0.0	0.6	0.6	5.8	1.1	0.0	0.4	0.8	0.9
LnGrp Delay(d),s/veh	11.7	0.0	11.8	0.0	50.8	50.9	70.2	41.1	0.0	94.7	51.2	51.5
LnGrp LOS	B		B		D	D	E	D		F	D	D
Approach Vol, veh/h	82					40		231		60		
Approach Delay, s/veh	11.7					50.8		60.2		56.4		
Approach LOS	B					D		E		E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	72.3		16.6	15.5	15.6		5.2	26.8				
Change Period (Y+Rc), s	4.9		4.4	4.9	4.9		4.4	4.9				
Max Green Setting (Gmax), s	27.3		16.6	27.0	30.0		4.0	39.6				
Max Q Clear Time (g_c+I1), s	2.9		12.1	3.9	3.4		2.5	4.4				
Green Ext Time (p_c), s	0.3		0.2	0.5	0.1		0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	49.1											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary

1: Heritage Road & Otay Mesa Rd

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	176	137	69	31	180	212	152	71	43	228	68	166
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	198	154	78	35	202	238	171	80	48	256	76	187
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	272	1632	548	875	2458	824	336	111	67	304	162	463
Arrive On Green	0.08	0.35	0.35	0.42	0.87	0.87	0.19	0.10	0.10	0.17	0.09	0.09
Sat Flow, veh/h	3442	4715	1583	3442	4715	1581	1774	1063	638	1774	1863	2787
Grp Volume(v), veh/h	198	154	78	35	202	238	171	0	128	256	76	187
Grp Sat Flow(s),veh/h/ln	1721	1572	1583	1721	1572	1581	1774	0	1700	1774	1863	1393
Q Serve(g_s), s	7.3	2.9	4.4	0.8	0.8	1.7	11.2	0.0	9.5	18.2	5.0	5.1
Cycle Q Clear(g_c), s	7.3	2.9	4.4	0.8	0.8	1.7	11.2	0.0	9.5	18.2	5.0	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	272	1632	548	875	2458	824	336	0	178	304	162	463
V/C Ratio(X)	0.73	0.09	0.14	0.04	0.08	0.29	0.51	0.00	0.72	0.84	0.47	0.40
Avail Cap(c_a), veh/h	477	1632	548	875	2458	824	396	0	288	546	473	928
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	28.7	29.2	28.1	4.1	1.0	47.2	0.0	56.4	52.1	56.5	24.2
Incr Delay (d2), s/veh	3.7	0.1	0.5	0.0	0.1	0.9	1.2	0.0	5.3	6.2	2.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	1.3	2.0	0.4	0.4	0.9	5.6	0.0	4.7	9.4	2.7	2.0
LnGrp Delay(d),s/veh	62.2	28.8	29.8	28.1	4.1	1.9	48.4	0.0	61.8	58.3	58.6	24.8
LnGrp LOS	E	C	C	C	A	A	D		E	E	E	C
Approach Vol, veh/h		430			475			299			519	
Approach Delay, s/veh		44.4			4.8			54.1			46.3	
Approach LOS		D			A			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	37.1	49.0	28.6	15.3	14.3	71.8	26.3	17.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.5	44.5	28.5	32.5	17.5	33.5	39.5	21.5				
Max Q Clear Time (g_c+I1), s	2.8	6.4	13.2	7.1	9.3	3.7	20.2	11.5				
Green Ext Time (p_c), s	0.1	1.1	1.5	1.2	0.5	2.3	1.7	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			35.7									
HCM 2010 LOS			D									
Notes												
User approved changes to right turn type.												

HCM 2010 Signalized Intersection Summary 2: Cactus Rd & Otay Mesa Rd

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰ ↱ ↲ ↳			↰ ↱ ↲ ↳			↰ ↱ ↲ ↳			↰ ↱ ↲ ↳		
Volume (veh/h)	6	334	37	72	387	1	31	2	86	5	1	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1740	1900	1863	1728	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	398	44	86	461	1	37	2	102	6	1	2
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	37	2645	287	137	3228	7	107	226	192	33	148	126
Arrive On Green	0.04	1.00	1.00	0.08	0.66	0.66	0.06	0.12	0.12	0.02	0.08	0.08
Sat Flow, veh/h	1774	4350	473	1774	4859	11	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	7	288	154	86	298	164	37	2	102	6	1	2
Grp Sat Flow(s),veh/h/ln	1774	1583	1656	1774	1572	1726	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	0.0	0.0	6.1	4.6	4.6	2.6	0.1	7.9	0.4	0.1	0.2
Cycle Q Clear(g_c), s	0.5	0.0	0.0	6.1	4.6	4.6	2.6	0.1	7.9	0.4	0.1	0.2
Prop In Lane	1.00		0.29	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	37	1925	1007	137	2089	1146	107	226	192	33	148	126
V/C Ratio(X)	0.19	0.15	0.15	0.63	0.14	0.14	0.34	0.01	0.53	0.18	0.01	0.02
Avail Cap(c_a), veh/h	143	1925	1007	161	2089	1146	143	695	591	143	695	591
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	0.0	0.0	58.2	8.1	8.1	58.6	50.3	53.7	62.8	55.1	55.1
Incr Delay (d2), s/veh	2.1	0.1	0.3	5.6	0.1	0.3	1.9	0.0	2.3	2.5	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	0.3	0.0	0.1	3.2	2.0	2.3	1.3	0.1	3.6	0.2	0.0	0.1
LnGrp Delay(d),s/veh	63.3	0.1	0.3	63.8	8.2	8.3	60.5	50.3	55.9	65.3	55.1	55.2
LnGrp LOS	E	A	A	E	A	A	E	D	E	E	E	E
Approach Vol, veh/h		449			548			141			9	
Approach Delay, s/veh		1.2			17.0			57.0			61.9	
Approach LOS		A			B			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	85.7	13.1	15.9	7.9	93.1	7.6	21.4				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	6.1	* 5.7	7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	11.5	36.0	* 10	48.0	* 10	37.3	* 10	48.0				
Max Q Clear Time (g_c+1.1), s	19.1	2.0	4.6	2.2	2.5	6.6	2.4	9.9				
Green Ext Time (p_c), s	0.1	4.4	0.0	0.5	0.0	4.3	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			16.1									
HCM 2010 LOS			B									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Britannia Blvd & Otay Mesa Rd

Existing PM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑↑	↑
Volume (veh/h)	193	232	274	261	199	158
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1863	1863	1727	1863	1863
Adj Flow Rate, veh/h	230	276	326	311	237	188
Adj No. of Lanes	3	1	1	3	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	10	2	2	10	2	2
Cap, veh/h	1497	744	636	3462	526	242
Arrive On Green	0.32	0.32	0.36	0.73	0.15	0.15
Sat Flow, veh/h	4871	1583	1774	4871	3442	1583
Grp Volume(v), veh/h	230	276	326	311	237	188
Grp Sat Flow(s), veh/h/ln	1572	1583	1774	1572	1721	1583
Q Serve(g_s), s	4.0	12.9	16.6	2.2	7.2	13.1
Cycle Q Clear(g_c), s	4.0	12.9	16.6	2.2	7.2	13.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1497	744	636	3462	526	242
V/C Ratio(X)	0.15	0.37	0.51	0.09	0.45	0.78
Avail Cap(c_a), veh/h	1497	744	636	3462	1182	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.98	0.98	1.00	1.00
Uniform Delay (d), s/veh	28.2	19.5	29.0	4.4	44.3	46.8
Incr Delay (d2), s/veh	0.2	1.4	0.7	0.1	0.6	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	7.5	8.3	0.9	3.5	6.1
LnGrp Delay(d),s/veh	28.4	20.9	29.7	4.4	44.9	52.1
LnGrp LOS	C	C	C	A	D	D
Approach Vol, veh/h	506			637	425	
Approach Delay, s/veh	24.3			17.3	48.1	
Approach LOS	C			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	47.9	43.2				91.1		23.9
Change Period (Y+Rc), s	7.2	* 7.2				7.2		6.8
Max Green Setting (Gmax), s	20.3	* 36				62.0		39.0
Max Q Clear Time (g_c+1.6), s	19.6	14.9				4.2		15.1
Green Ext Time (p_c), s	0.4	2.3				3.1		1.9

Intersection Summary

HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

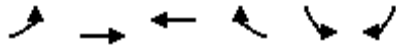
Existing PM
4/7/2016

	           											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	165	131	413	297	52	74	80	271	36	143	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1746	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	42	181	144	454	326	57	81	88	298	40	157	34
Adj No. of Lanes	1	3	1	1	3	0	1	1	0	2	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	10	2	2	10	10	2	2	2	2	2	2
Cap, veh/h	722	508	171	731	463	78	124	97	328	241	384	83
Arrive On Green	0.41	0.11	0.11	0.41	0.11	0.11	0.07	0.26	0.26	0.07	0.26	0.26
Sat Flow, veh/h	1774	4715	1583	1774	4100	694	1774	374	1266	3442	1484	321
Grp Volume(v), veh/h	42	181	144	454	250	133	81	0	386	40	0	191
Grp Sat Flow(s),veh/h/ln	1774	1572	1583	1774	1589	1616	1774	0	1639	1721	0	1805
Q Serve(g_s), s	2.2	5.3	11.0	30.3	11.4	11.9	6.7	0.0	34.3	1.6	0.0	13.2
Cycle Q Clear(g_c), s	2.2	5.3	11.0	30.3	11.4	11.9	6.7	0.0	34.3	1.6	0.0	13.2
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.77	1.00		0.18
Lane Grp Cap(c), veh/h	722	508	171	731	359	183	124	0	424	241	0	467
V/C Ratio(X)	0.06	0.36	0.84	0.62	0.70	0.73	0.65	0.00	0.91	0.17	0.00	0.41
Avail Cap(c_a), veh/h	722	1305	438	731	1288	655	181	0	497	241	0	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.00	0.99	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	62.1	44.7	34.8	64.1	64.4	68.0	0.0	54.1	65.6	0.0	46.1
Incr Delay (d2), s/veh	0.0	1.9	36.7	1.6	10.5	21.8	5.6	0.0	18.7	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.4	6.6	15.2	5.5	6.4	3.5	0.0	17.8	0.8	0.0	6.7
LnGrp Delay(d),s/veh	27.1	64.0	81.4	36.4	74.6	86.2	73.6	0.0	72.8	66.0	0.0	46.7
LnGrp LOS	C	E	F	D	E	F	E		E	E		D
Approach Vol, veh/h	367				837		467				231	
Approach Delay, s/veh	66.6				55.7		72.9				50.0	
Approach LOS	E				E		E				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	67.0	22.9	15.7	44.4	66.2	23.6	15.7	44.4				
Change Period (Y+Rc), s	5.7	* 7.2	* 5.7	6.1	5.7	* 7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	29.3	* 41	* 15	40.2	10.0	* 60	* 10	45.0				
Max Q Clear Time (g_c+Q), s	67.3	13.0	8.7	15.2	4.2	13.9	3.6	36.3				
Green Ext Time (p_c), s	0.0	1.5	0.1	2.6	1.1	1.8	0.0	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay	61.4											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary

5: Otay Mesa Rd & Piper Ranch Rd

Existing PM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	96	376	573	124	83	189
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	109	427	651	141	94	215
Adj No. of Lanes	1	2	3	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	10	10	2	2	2
Cap, veh/h	594	2529	1729	745	184	329
Arrive On Green	0.33	0.77	0.37	0.37	0.10	0.10
Sat Flow, veh/h	1774	3368	4871	1583	1774	3167
Grp Volume(v), veh/h	109	427	651	141	94	215
Grp Sat Flow(s),veh/h/ln	1774	1641	1572	1583	1774	1583
Q Serve(g_s), s	3.9	3.1	9.1	4.7	4.5	5.9
Cycle Q Clear(g_c), s	3.9	3.1	9.1	4.7	4.5	5.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	594	2529	1729	745	184	329
V/C Ratio(X)	0.18	0.17	0.38	0.19	0.51	0.65
Avail Cap(c_a), veh/h	594	2529	1729	745	710	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.98	0.98	1.00	1.00
Uniform Delay (d), s/veh	21.2	2.7	20.9	13.8	38.2	38.8
Incr Delay (d2), s/veh	0.1	0.1	0.6	0.6	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.4	4.0	2.5	2.3	5.2
LnGrp Delay(d),s/veh	21.4	2.9	21.6	14.4	40.3	41.0
LnGrp LOS	C	A	C	B	D	D
Approach Vol, veh/h		536	792		309	
Approach Delay, s/veh		6.6	20.3		40.8	
Approach LOS		A	C		D	

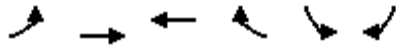
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		75.5		14.5	36.3	39.2		
Change Period (Y+Rc), s		6.2		5.1	6.2	* 6.2		
Max Green Setting (Gmax), s		42.7		36.0	5.0	* 33		
Max Q Clear Time (g_c+I1), s		5.1		7.9	5.9	11.1		
Green Ext Time (p_c), s		2.6		1.5	0.0	3.9		

Intersection Summary								
HCM 2010 Ctrl Delay			19.7					
HCM 2010 LOS			B					

Notes
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
6: Otay Mesa Rd & SR125 SB Off-Ramp

Existing PM
4/7/2016

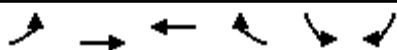


Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑↑	↑↑↑↑		↑↑	↑		
Volume (veh/h)	0	459	551	0	93	146		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1727	1727	0	1863	1863		
Adj Flow Rate, veh/h	0	483	580	0	98	154		
Adj No. of Lanes	0	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	10	10	0	2	2		
Cap, veh/h	0	3078	3078	0	490	225		
Arrive On Green	0.00	0.65	0.65	0.00	0.14	0.14		
Sat Flow, veh/h	0	5026	5026	0	3442	1583		
Grp Volume(v), veh/h	0	483	580	0	98	154		
Grp Sat Flow(s),veh/h/ln	0	1572	1572	0	1721	1583		
Q Serve(g_s), s	0.0	2.4	2.9	0.0	1.5	5.5		
Cycle Q Clear(g_c), s	0.0	2.4	2.9	0.0	1.5	5.5		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	3078	3078	0	490	225		
V/C Ratio(X)	0.00	0.16	0.19	0.00	0.20	0.68		
Avail Cap(c_a), veh/h	0	3078	3078	0	883	406		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	0.97	0.97	0.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	4.0	4.1	0.0	22.7	24.5		
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.2	3.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.3	0.0	0.7	2.6		
LnGrp Delay(d),s/veh	0.0	4.1	4.3	0.0	22.9	28.1		
LnGrp LOS		A	A		C	C		
Approach Vol, veh/h		483	580		252			
Approach Delay, s/veh		4.1	4.3		26.1			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		45.9		14.1		45.9		
Change Period (Y+Rc), s		7.2		6.1		7.2		
Max Green Setting (Gmax), s		31.8		14.9		31.8		
Max Q Clear Time (g_c+l1), s		4.4		7.5		4.9		
Green Ext Time (p_c), s		5.8		0.6		5.7		
Intersection Summary								
HCM 2010 Ctrl Delay			8.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

7: Otay Mesa Rd & SR125 NB On-Ramp

Existing PM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LT	TH	TH	TH	LT	TH
Volume (veh/h)	310	242	551	340	0	0
Number	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1753	1863		
Adj Flow Rate, veh/h	326	255	510	405		
Adj No. of Lanes	2	2	2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	10	10	2		
Cap, veh/h	473	14448	14498	13094		
Arrive On Green	0.14	1.00	1.00	1.00		
Sat Flow, veh/h	3442	3368	3506	3167		
Grp Volume(v), veh/h	326	255	510	405		
Grp Sat Flow(s),veh/h/ln	1721	1641	1753	1583		
Q Serve(g_s), s	3.6	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	3.6	0.0	0.0	0.0		
Prop In Lane	1.00			1.00		
Lane Grp Cap(c), veh/h	473	14448	14498	13094		
V/C Ratio(X)	0.69	0.02	0.04	0.03		
Avail Cap(c_a), veh/h	473	14448	14498	13094		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.99	0.99	1.00	1.00		
Uniform Delay (d), s/veh	16.4	0.0	0.0	0.0		
Incr Delay (d2), s/veh	4.2	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.0		
LnGrp Delay(d),s/veh	20.6	0.0	0.0	0.0		
LnGrp LOS	C	A	A	A		
Approach Vol, veh/h		581	915			
Approach Delay, s/veh		11.6	0.0			
Approach LOS		B	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		187.0			10.7	176.3		
Change Period (Y+Rc), s		* 7.2			* 5.7	7.2		
Max Green Setting (Gmax), s		* 37			* 5	22.1		
Max Q Clear Time (g_c+l1), s		2.0			5.6	2.0		
Green Ext Time (p_c), s		6.8			0.0	5.9		

Intersection Summary

HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	237	0	0	883	0	0	0	0	0	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	5	252	0	0	939	0	0	0	0	0	0	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	939	0	0	252	0	0	733	1202	126	1076	1202	470
Stage 1	-	-	-	-	-	-	263	263	-	939	939	-
Stage 2	-	-	-	-	-	-	470	939	-	137	263	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	726	-	-	1310	-	-	309	183	901	174	183	540
Stage 1	-	-	-	-	-	-	719	689	-	284	341	-
Stage 2	-	-	-	-	-	-	543	341	-	852	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	726	-	-	1310	-	-	302	182	901	173	182	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	182	-	173	182	-
Stage 1	-	-	-	-	-	-	713	683	-	282	341	-
Stage 2	-	-	-	-	-	-	534	341	-	845	683	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			0			11.8		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	726	-	-	1310	-	-	540				
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.016				
HCM Control Delay (s)	0	10	0	-	0	-	-	11.8				
HCM Lane LOS	A	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0				

HCM 2010 Signalized Intersection Summary
9: Sanyo Ave & Otay Mesa Rd

Existing PM
4/7/2016

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↰	↑	↰↰			
Volume (veh/h)	96	141	18	599	284	4		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1805	1900	1863	1727	1863	1900		
Adj Flow Rate, veh/h	102	150	19	637	306	0		
Adj No. of Lanes	2	0	1	1	2	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	10	10	2	10	2	0		
Cap, veh/h	965	845	40	1175	349	159		
Arrive On Green	0.56	0.56	0.02	0.68	0.10	0.00		
Sat Flow, veh/h	1805	1503	1774	1727	3548	1615		
Grp Volume(v), veh/h	102	150	19	637	306	0		
Grp Sat Flow(s),veh/h/ln	1715	1503	1774	1727	1774	1615		
Q Serve(g_s), s	1.7	2.9	0.6	11.2	5.1	0.0		
Cycle Q Clear(g_c), s	1.7	2.9	0.6	11.2	5.1	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	965	845	40	1175	349	159		
V/C Ratio(X)	0.11	0.18	0.47	0.54	0.88	0.00		
Avail Cap(c_a), veh/h	965	845	148	1175	349	159		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	6.1	6.4	29.0	4.9	26.7	0.0		
Incr Delay (d2), s/veh	0.2	0.5	8.4	1.8	21.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	1.3	0.4	5.7	3.5	0.0		
LnGrp Delay(d),s/veh	6.3	6.8	37.4	6.7	48.1	0.0		
LnGrp LOS	A	A	D	A	D			
Approach Vol, veh/h	252			656	306			
Approach Delay, s/veh	6.6			7.6	48.1			
Approach LOS	A			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.1	40.9				48.0		12.0
Change Period (Y+Rc), s	* 5.7	7.2				7.2		6.1
Max Green Setting (Gmax), s	* 5	30.1				40.8		5.9
Max Q Clear Time (g_c+l1), s	2.6	4.9				13.2		7.1
Green Ext Time (p_c), s	0.0	4.3				4.4		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			17.6					
HCM 2010 LOS			B					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

11: Enrico Fermi Rd & Otay Mesa Rd

Existing PM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Volume (veh/h)	82	15	30	570	50	26		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1747	1900	1863	1727	1863	1863		
Adj Flow Rate, veh/h	104	19	38	722	63	33		
Adj No. of Lanes	1	0	1	1	1	1		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79		
Percent Heavy Veh, %	10	10	2	10	2	2		
Cap, veh/h	518	95	63	931	237	188		
Arrive On Green	0.36	0.35	0.04	0.54	0.13	0.12		
Sat Flow, veh/h	1438	263	1774	1727	1774	1583		
Grp Volume(v), veh/h	0	123	38	722	63	33		
Grp Sat Flow(s),veh/h/ln	0	1701	1774	1727	1774	1583		
Q Serve(g_s), s	0.0	1.7	0.7	11.1	1.1	0.6		
Cycle Q Clear(g_c), s	0.0	1.7	0.7	11.1	1.1	0.6		
Prop In Lane		0.15	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	0	613	63	931	237	188		
V/C Ratio(X)	0.00	0.20	0.60	0.78	0.27	0.18		
Avail Cap(c_a), veh/h	0	3718	486	4496	1135	989		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	7.4	16.0	6.1	13.1	13.3		
Incr Delay (d2), s/veh	0.0	0.2	8.9	1.4	0.6	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.5	5.4	0.6	0.3		
LnGrp Delay(d),s/veh	0.0	7.6	24.9	7.6	13.7	13.8		
LnGrp LOS		A	C	A	B	B		
Approach Vol, veh/h	123			760	96			
Approach Delay, s/veh	7.6			8.4	13.7			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.0	17.6				23.6		10.0
Change Period (Y+Rc), s	4.8	6.0				6.0		6.0
Max Green Setting (Gmax), s	9.2	73.0				87.0		21.0
Max Q Clear Time (g_c+I2), s	12.5	3.7				13.1		3.1
Green Ext Time (p_c), s	0.0	4.5				4.5		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			8.8					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

12: Britannia Blvd & SR-905 WB Ramps

Existing PM
4/7/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	62	4	110	519	247	0	0	269	237
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1810	1804	1810	1810	1727	0	0	1765	1900
Adj Flow Rate, veh/h				79	0	144	665	317	0	0	345	304
Adj No. of Lanes				1	0	2	2	3	0	0	3	0
Peak Hour Factor				0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %				5	10	5	5	10	0	0	10	10
Cap, veh/h				124	0	221	790	3842	0	0	1690	789
Arrive On Green				0.07	0.00	0.07	0.24	0.81	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1723	0	3076	3343	4871	0	0	3371	1500
Grp Volume(v), veh/h				79	0	144	665	317	0	0	345	304
Grp Sat Flow(s),veh/h/ln				1723	0	1538	1672	1572	0	0	1606	1500
Q Serve(g_s), s				4.0	0.0	4.1	17.1	1.2	0.0	0.0	5.1	10.8
Cycle Q Clear(g_c), s				4.0	0.0	4.1	17.1	1.2	0.0	0.0	5.1	10.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				124	0	221	790	3842	0	0	1690	789
V/C Ratio(X)				0.64	0.00	0.65	0.84	0.08	0.00	0.00	0.20	0.39
Avail Cap(c_a), veh/h				247	0	441	1200	3842	0	0	1690	789
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.79	0.79	0.00	0.00	0.70	0.70
Uniform Delay (d), s/veh				40.6	0.0	40.7	32.8	1.7	0.0	0.0	11.3	12.7
Incr Delay (d2), s/veh				5.3	0.0	3.2	2.8	0.0	0.0	0.0	0.2	1.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	1.8	8.2	0.5	0.0	0.0	2.3	4.7
LnGrp Delay(d),s/veh				45.9	0.0	43.9	35.5	1.7	0.0	0.0	11.5	13.7
LnGrp LOS				D		D	D	A			B	B
Approach Vol, veh/h					223			982			649	
Approach Delay, s/veh					44.6			24.6			12.5	
Approach LOS					D			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.4			26.0	52.5		11.6				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		66.9			* 32	29.9		12.9				
Max Q Clear Time (g_c+I1), s		3.2			19.1	12.8		6.1				
Green Ext Time (p_c), s		8.5			2.2	6.2		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				22.8								
HCM 2010 LOS				C								

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

13: Britannia Blvd & SR-905 EB Ramps

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	99	1	220	0	0	0	0	667	132	140	191	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1809	1810				0	1740	1900	1810	1727	0
Adj Flow Rate, veh/h	129	1	286				0	866	171	182	248	0
Adj No. of Lanes	0	1	2				0	2	0	2	3	0
Peak Hour Factor	0.77	0.77	0.77				0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	5	10	5				0	10	10	5	10	0
Cap, veh/h	240	2	379				0	1637	323	265	3453	0
Arrive On Green	0.14	0.14	0.14				0.00	0.59	0.59	0.08	0.73	0.00
Sat Flow, veh/h	1710	13	2707				0	2841	544	3343	4871	0
Grp Volume(v), veh/h	130	0	286				0	520	517	182	248	0
Grp Sat Flow(s),veh/h/ln	1723	0	1354				0	1653	1644	1672	1572	0
Q Serve(g_s), s	5.6	0.0	8.1				0.0	14.9	14.9	4.2	1.2	0.0
Cycle Q Clear(g_c), s	5.6	0.0	8.1				0.0	14.9	14.9	4.2	1.2	0.0
Prop In Lane	0.99		1.00				0.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	242	0	379				0	983	977	265	3453	0
V/C Ratio(X)	0.54	0.00	0.75				0.00	0.53	0.53	0.69	0.07	0.00
Avail Cap(c_a), veh/h	364	0	572				0	983	977	430	3453	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	32.0	0.0	33.1				0.0	9.6	9.6	35.9	3.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	3.1				0.0	2.0	2.1	3.1	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
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.2				0.0	7.2	7.2	2.1	0.5	0.0
LnGrp Delay(d),s/veh	33.8	0.0	36.1				0.0	11.6	11.6	38.9	3.1	0.0
LnGrp LOS	C		D					B	B	D	A	
Approach Vol, veh/h		416						1037			430	
Approach Delay, s/veh		35.4						11.6			18.2	
Approach LOS		D						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	1.0	52.7		16.3		63.7						
Change Period (Y+Rc), s	4.7	5.1		5.1		5.1						
Max Green Setting (Gmax), s	1.0	37.9		16.9		52.9						
Max Q Clear Time (g_c+I), s	1.0	16.9		10.1		3.2						
Green Ext Time (p_c), s	0.2	9.2		1.1		12.1						
Intersection Summary												
HCM 2010 Ctrl Delay			18.4									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary

14: La Media Rd & St Andrews Ave/SR-905 WB Ramps

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	6	72	22	20	92	73	385	295	0	722	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1803	1900	1810	1734	1810	1810	1727	1810	0	1727	1810
Adj Flow Rate, veh/h	4	6	77	23	23	99	78	414	317	0	776	15
Adj No. of Lanes	1	1	0	1	1	1	2	2	1	0	3	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	10	10	5	10	5	5	10	5	0	10	5
Cap, veh/h	117	8	98	146	147	131	159	2222	1040	0	2722	888
Arrive On Green	0.07	0.07	0.07	0.08	0.08	0.08	0.10	1.00	1.00	0.00	0.58	0.58
Sat Flow, veh/h	1723	112	1438	1723	1734	1538	3343	3282	1536	0	4871	1538
Grp Volume(v), veh/h	4	0	83	23	23	99	78	414	317	0	776	15
Grp Sat Flow(s),veh/h/ln	1723	0	1550	1723	1734	1538	1672	1641	1536	0	1572	1538
Q Serve(g_s), s	0.2	0.0	4.7	1.1	1.1	5.7	2.0	0.0	0.0	0.0	7.5	0.4
Cycle Q Clear(g_c), s	0.2	0.0	4.7	1.1	1.1	5.7	2.0	0.0	0.0	0.0	7.5	0.4
Prop In Lane	1.00		0.93	1.00		1.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	117	0	105	146	147	131	159	2222	1040	0	2722	888
V/C Ratio(X)	0.03	0.00	0.79	0.16	0.16	0.76	0.49	0.19	0.30	0.00	0.29	0.02
Avail Cap(c_a), veh/h	247	0	222	247	249	220	308	2222	1040	0	2722	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97	0.00	0.78	0.78
Uniform Delay (d), s/veh	39.2	0.0	41.3	38.2	38.2	40.3	39.7	0.0	0.0	0.0	9.6	8.1
Incr Delay (d2), s/veh	0.1	0.0	12.1	0.5	0.5	8.7	2.2	0.2	0.7	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.4	0.6	0.6	2.7	1.0	0.1	0.2	0.0	3.3	0.2
LnGrp Delay(d),s/veh	39.3	0.0	53.4	38.7	38.7	48.9	41.9	0.2	0.7	0.0	9.8	8.2
LnGrp LOS	D		D	D	D	D	D	A	A		A	A
Approach Vol, veh/h	87				145				809		791	
Approach Delay, s/veh	52.7				45.7				4.4		9.8	
Approach LOS	D				D				A		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	66.0		11.2		9.0		57.0		12.7			
Change Period (Y+Rc), s	5.1		5.1		* 4.7		5.1		5.1			
Max Green Setting (Gmax), s	48.9		12.9		* 8.3		35.9		12.9			
Max Q Clear Time (g_c+I1), s	2.0		6.7		4.0		9.5		7.7			
Green Ext Time (p_c), s	13.4		0.2		0.1		11.2		0.2			
Intersection Summary												
HCM 2010 Ctrl Delay	12.3											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

15: La Media Rd & SR-905 EB Ramps

Existing PM
4/7/2016



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	260	155	28	493	204	231		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1810	1727	1727	1810		
Adj Flow Rate, veh/h	280	167	30	530	219	248		
Adj No. of Lanes	2	2	2	3	2	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	5	5	5	10	10	5		
Cap, veh/h	393	319	98	3626	2256	1238		
Arrive On Green	0.12	0.12	0.03	0.77	0.23	0.23		
Sat Flow, veh/h	3343	2707	3343	4871	3368	1538		
Grp Volume(v), veh/h	280	167	30	530	219	248		
Grp Sat Flow(s),veh/h/ln	1672	1354	1672	1572	1641	1538		
Q Serve(g_s), s	7.3	5.2	0.8	2.6	4.7	7.4		
Cycle Q Clear(g_c), s	7.3	5.2	0.8	2.6	4.7	7.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	393	319	98	3626	2256	1238		
V/C Ratio(X)	0.71	0.52	0.31	0.15	0.10	0.20		
Avail Cap(c_a), veh/h	776	629	308	3626	2256	1238		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.97	0.97		
Uniform Delay (d), s/veh	38.2	37.3	42.8	2.7	12.7	6.0		
Incr Delay (d2), s/veh	2.4	1.3	1.7	0.1	0.1	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.5	4.0	0.4	1.2	2.2	5.2		
LnGrp Delay(d),s/veh	40.6	38.7	44.5	2.8	12.8	6.4		
LnGrp LOS	D	D	D	A	B	A		
Approach Vol, veh/h	447			560	467			
Approach Delay, s/veh	39.9			5.0	9.4			
Approach LOS	D			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		74.3		15.7	7.3	67.0		
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		
Max Green Setting (Gmax), s		58.9		20.9	* 8.3	45.9		
Max Q Clear Time (g_c+I1), s		4.6		9.3	2.8	9.4		
Green Ext Time (p_c), s		7.3		1.3	0.0	7.1		
Intersection Summary								
HCM 2010 Ctrl Delay			17.0					
HCM 2010 LOS			B					
Notes								

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh11.1

Intersection LOS B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	49	64	35	0	8	141	83	0	48	114	7	0	37	79	51
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	10	2	10	2	10	2	10	2	10	2	10	2	10	2	10	2
Mvmt Flow	0	58	75	41	0	9	166	98	0	56	134	8	0	44	93	60
Number of Lanes	0	0	1	0	0	1	2	0	0	1	1	0	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	1
HCM Control Delay	12.3	10.2	11.4	11
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	33%	100%	0%	0%	32%	0%
Vol Thru, %	0%	94%	43%	0%	100%	36%	68%	0%
Vol Right, %	0%	6%	24%	0%	0%	64%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	121	148	8	94	130	116	51
LT Vol	48	0	49	8	0	0	37	0
Through Vol	0	114	64	0	94	47	79	0
RT Vol	0	7	35	0	0	83	0	51
Lane Flow Rate	56	142	174	9	111	153	136	60
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.11	0.261	0.317	0.017	0.19	0.238	0.253	0.099
Departure Headway (Hd)	7.002	6.593	6.55	6.568	6.199	5.609	6.684	5.952
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	510	544	547	544	577	638	536	600
Service Time	4.76	4.35	4.31	4.318	3.95	3.36	4.443	3.71
HCM Lane V/C Ratio	0.11	0.261	0.318	0.017	0.192	0.24	0.254	0.1
HCM Control Delay	10.6	11.7	12.3	9.4	10.4	10.1	11.7	9.4
HCM Lane LOS	B	B	B	A	B	B	B	A
HCM 95th-tile Q	0.4	1	1.4	0.1	0.7	0.9	1	0.3

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	34	53	26	27	148	12	77	34	13	4	36	7
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	3	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	150	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	10	2	2	10	2	2	10	2	2	10	2
Mvmt Flow	42	66	32	34	185	15	96	42	16	5	45	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	102	0	0	357	442	52	405	450	104
Stage 1	-	-	-	-	-	-	171	171	-	263	263	-
Stage 2	-	-	-	-	-	-	186	271	-	142	187	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.7	6.94	7.54	6.7	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.1	3.32	3.52	4.1	3.32
Pot Cap-1 Maneuver	1366	-	-	1488	-	-	574	491	1005	530	486	931
Stage 1	-	-	-	-	-	-	814	737	-	719	670	-
Stage 2	-	-	-	-	-	-	798	664	-	846	725	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1365	-	-	1488	-	-	503	462	1002	464	458	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	503	462	-	464	458	-
Stage 1	-	-	-	-	-	-	786	712	-	695	653	-
Stage 2	-	-	-	-	-	-	719	647	-	758	700	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.3			1.1			13.3			13.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	503	543	1365	-	-	1488	-	-	496			
HCM Lane V/C Ratio	0.191	0.108	0.031	-	-	0.023	-	-	0.118			
HCM Control Delay (s)	13.8	12.4	7.7	-	-	7.5	-	-	13.2			
HCM Lane LOS	B	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.7	0.4	0.1	-	-	0.1	-	-	0.4			

HCM 2010 Signalized Intersection Summary
18: Enrico Fermi Rd & Airway Rd

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	1	4	4	11	2	54	79	8	3	49	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1739	1900	1863	1781	1900
Adj Flow Rate, veh/h	21	1	5	5	14	3	71	104	11	4	64	46
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	2	10	2	2	10	2	2	10	10	2	10	10
Cap, veh/h	68	258	431	10	230	211	188	685	71	8	278	183
Arrive On Green	0.04	0.15	0.17	0.01	0.13	0.13	0.11	0.23	0.21	0.00	0.14	0.14
Sat Flow, veh/h	1774	1727	1583	1774	1727	1583	1774	3019	315	1774	1960	1287
Grp Volume(v), veh/h	21	1	5	5	14	3	71	56	59	4	54	56
Grp Sat Flow(s),veh/h/ln	1774	1727	1583	1774	1727	1583	1774	1652	1681	1774	1692	1554
Q Serve(g_s), s	0.3	0.0	0.1	0.1	0.2	0.0	1.1	0.8	0.8	0.1	0.9	1.0
Cycle Q Clear(g_c), s	0.3	0.0	0.1	0.1	0.2	0.0	1.1	0.8	0.8	0.1	0.9	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.83
Lane Grp Cap(c), veh/h	68	258	431	10	230	211	188	375	382	8	240	221
V/C Ratio(X)	0.31	0.00	0.01	0.52	0.06	0.01	0.38	0.15	0.15	0.52	0.23	0.25
Avail Cap(c_a), veh/h	769	2270	2275	503	2040	1870	1403	2398	2440	604	1722	1582
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	14.0	10.9	8.0	14.9	11.3	11.3	12.5	9.3	9.3	14.9	11.4	11.4
Incr Delay (d2), s/veh	2.6	0.0	0.0	37.0	0.1	0.0	1.2	0.2	0.2	44.4	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.1	0.1	0.0	0.6	0.4	0.4	0.1	0.4	0.4
LnGrp Delay(d),s/veh	16.6	10.9	8.0	51.8	11.5	11.3	13.7	9.5	9.5	59.3	11.9	12.0
LnGrp LOS	B	B	A	D	B	B	B	A	A	E	B	B
Approach Vol, veh/h	27				22				186			
Approach Delay, s/veh	14.8				20.6				11.1			
Approach LOS	B				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.7	9.1	7.5	9.8	4.1	8.6	4.9	12.3				
Change Period (Y+Rc), s	3.5	4.6	4.8	6.0	3.5	4.6	4.8	6.0				
Max Green Setting (Gmax), s	8.5	39.4	23.2	30.0	12.5	35.4	10.2	43.0				
Max Q Clear Time (g_c+I1), s	2.1	2.1	3.1	3.0	2.3	2.2	2.1	2.8				
Green Ext Time (p_c), s	0.0	0.1	0.2	0.9	0.0	0.1	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay	12.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

19: SR 905 SB Ramps & Siempre Viva Road/Siempre Viva

Existing PM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↵		↵↵	↑↑↑	↵	↵↵		
Volume (veh/h)	643	244	193	626	0	307		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1787	1900	1863	1759	1863	1863		
Adj Flow Rate, veh/h	699	265	210	680	0	334		
Adj No. of Lanes	3	0	2	3	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	8	8	2	8	2	2		
Cap, veh/h	2150	803	298	3648	257	404		
Arrive On Green	0.62	0.61	0.09	0.76	0.00	0.14		
Sat Flow, veh/h	3649	1303	3442	4961	1774	2787		
Grp Volume(v), veh/h	651	313	210	680	0	334		
Grp Sat Flow(s),veh/h/ln	1626	1540	1721	1601	1774	1393		
Q Serve(g_s), s	8.6	8.9	5.3	3.6	0.0	10.5		
Cycle Q Clear(g_c), s	8.6	8.9	5.3	3.6	0.0	10.5		
Prop In Lane		0.85	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2004	949	298	3648	257	404		
V/C Ratio(X)	0.32	0.33	0.70	0.19	0.00	0.83		
Avail Cap(c_a), veh/h	2004	949	570	3648	315	495		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	8.3	8.4	40.0	3.0	0.0	37.4		
Incr Delay (d2), s/veh	0.4	0.9	3.0	0.1	0.0	9.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.0	4.0	2.7	1.6	0.0	4.6		
LnGrp Delay(d),s/veh	8.7	9.4	43.0	3.1	0.0	46.7		
LnGrp LOS	A	A	D	A		D		
Approach Vol, veh/h	964			890	334			
Approach Delay, s/veh	8.9			12.5	46.7			
Approach LOS	A			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	12.9	60.1				73.0		17.0
Change Period (Y+Rc), s	5.1	5.1				* 5.1		4.0
Max Green Setting (Gmax), s	44.9	44.9				* 66		16.0
Max Q Clear Time (g_c+17, s)	17.3	10.9				5.6		12.5
Green Ext Time (p_c), s	0.5	10.2				11.1		0.6
Intersection Summary								
HCM 2010 Ctrl Delay		16.2						
HCM 2010 LOS		B						
Notes								

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	950	594	0	0	225
Conflicting Peds, #/hr	0	0	0	5	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	8	8	2	2	2
Mvmt Flow	0	1022	639	0	0	242
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	639	0	-	0	1048	319
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	409	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	582	-	-	-	294	577
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	585	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	582	-	-	-	294	577
Mov Cap-2 Maneuver	-	-	-	-	339	-
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	585	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		15.7	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	582	-	-	-	577	
HCM Lane V/C Ratio	-	-	-	-	0.419	
HCM Control Delay (s)	0	-	-	-	15.7	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	2.1	

HCM 2010 Signalized Intersection Summary
21: SR 905 NB Ramps & Siempre Viva Road

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	380	570	0	0	516	553	78	1	220	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1759	0	0	1794	1863	1900	1863	1863			
Adj Flow Rate, veh/h	413	620	0	0	561	601	85	1	239			
Adj No. of Lanes	2	3	0	0	2	2	0	1	2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	8	0	0	8	2	2	2	2			
Cap, veh/h	1090	3803	0	0	1521	1336	204	2	324			
Arrive On Green	0.32	0.79	0.00	0.00	0.42	0.42	0.11	0.12	0.12			
Sat Flow, veh/h	3442	4961	0	0	3588	3152	1754	21	2787			
Grp Volume(v), veh/h	413	620	0	0	561	601	86	0	239			
Grp Sat Flow(s),veh/h/ln	1721	1601	0	0	1794	1576	1775	0	1393			
Q Serve(g_s), s	9.3	3.1	0.0	0.0	10.7	13.6	4.5	0.0	8.3			
Cycle Q Clear(g_c), s	9.3	3.1	0.0	0.0	10.7	13.6	4.5	0.0	8.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	1090	3803	0	0	1521	1336	206	0	324			
V/C Ratio(X)	0.38	0.16	0.00	0.00	0.37	0.45	0.42	0.00	0.74			
Avail Cap(c_a), veh/h	1090	3803	0	0	1521	1336	309	0	485			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.55	0.55	1.00	0.00	1.00			
Uniform Delay (d), s/veh	26.5	2.5	0.0	0.0	19.7	20.5	41.3	0.0	42.7			
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.0	0.4	0.6	1.3	0.0	3.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.4	1.4	0.0	0.0	5.4	6.0	2.3	0.0	3.3			
LnGrp Delay(d),s/veh	26.7	2.6	0.0	0.0	20.0	21.1	42.6	0.0	46.0			
LnGrp LOS	C	A			C	C	D		D			
Approach Vol, veh/h	1033				1162				325			
Approach Delay, s/veh	12.2				20.6				45.1			
Approach LOS	B				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5				6			
Phs Duration (G+Y+Rc), s	83.8				36.8				47.0			
Change Period (Y+Rc), s	5.1				5.1				* 5.1			
Max Green Setting (Gmax), s	72.9				26.3				* 42			
Max Q Clear Time (g_c+I1), s	5.1				11.3				15.6			
Green Ext Time (p_c), s	5.9				4.6				6.7			
Intersection Summary												
HCM 2010 Ctrl Delay	20.3											
HCM 2010 LOS	C											
Notes												

HCM 2010 Signalized Intersection Summary
22: Paseo De Las Americas & Siempre Viva Road

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑		↰	↑↑		↰	↑↑	
Volume (veh/h)	123	129	126	17	604	10	331	149	9	8	75	107
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1863	1761	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	137	143	140	19	671	11	368	166	10	9	83	119
Adj No. of Lanes	1	3	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	2	2	8	8	2	2	2	2	2	2
Cap, veh/h	178	1594	524	40	854	14	420	1521	91	26	401	351
Arrive On Green	0.10	0.33	0.33	0.02	0.25	0.25	0.24	0.45	0.45	0.01	0.23	0.22
Sat Flow, veh/h	1774	4803	1578	1774	3368	55	1774	3390	203	1774	1770	1549
Grp Volume(v), veh/h	137	143	140	19	333	349	368	86	90	9	83	119
Grp Sat Flow(s),veh/h/ln	1774	1601	1578	1774	1673	1750	1774	1770	1823	1774	1770	1549
Q Serve(g_s), s	6.8	1.9	5.9	1.0	16.9	16.9	18.1	2.6	2.6	0.5	3.5	5.9
Cycle Q Clear(g_c), s	6.8	1.9	5.9	1.0	16.9	16.9	18.1	2.6	2.6	0.5	3.5	5.9
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	178	1594	524	40	424	444	420	794	818	26	401	351
V/C Ratio(X)	0.77	0.09	0.27	0.48	0.79	0.79	0.88	0.11	0.11	0.35	0.21	0.34
Avail Cap(c_a), veh/h	217	1814	596	107	529	553	529	1152	1187	88	711	623
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	39.8	20.9	22.2	43.9	31.6	31.6	33.4	14.5	14.5	44.3	28.5	29.7
Incr Delay (d2), s/veh	12.6	0.0	0.3	8.8	6.1	5.9	12.9	0.1	0.1	8.0	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.8	2.6	0.6	8.5	8.9	10.4	1.3	1.3	0.3	1.7	2.6
LnGrp Delay(d),s/veh	52.4	20.9	22.5	52.6	37.7	37.5	46.3	14.6	14.6	52.3	28.8	30.2
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	C	C
Approach Vol, veh/h	420			701			544			211		
Approach Delay, s/veh	31.7			38.0			36.0			30.6		
Approach LOS	C			D			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	34.5	25.4	25.0	13.0	27.4	5.2	45.1				
Change Period (Y+Rc), s	4.4	4.9	4.4	4.9	4.4	4.9	4.4	4.9				
Max Green Setting (Gmax), s	5.0	33.8	26.6	36.0	10.6	28.2	4.0	58.6				
Max Q Clear Time (g_c+I), s	13.0	7.9	20.1	7.9	8.8	18.9	2.5	4.6				
Green Ext Time (p_c), s	0.0	4.4	0.9	1.5	0.1	3.0	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	35.2											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
23: Enrico Fermi Rd & Siempre Viva Road

Existing PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	16	6	0	17	5	133	98	0	2	30	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1786	1900	1863	1782	1900	1863	1759	1900	1863	1814	1900
Adj Flow Rate, veh/h	43	19	7	0	20	6	160	118	0	2	36	42
Adj No. of Lanes	2	1	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	8	8	2	8	8	2	8	8	2	8	8
Cap, veh/h	1954	707	261	148	217	62	189	627	0	4	144	128
Arrive On Green	0.57	0.57	0.57	0.00	0.08	0.08	0.11	0.19	0.00	0.00	0.08	0.08
Sat Flow, veh/h	3442	1246	459	1774	2599	744	1774	3431	0	1774	1723	1541
Grp Volume(v), veh/h	43	0	26	0	13	13	160	118	0	2	36	42
Grp Sat Flow(s),veh/h/ln	1721	0	1705	1774	1693	1651	1774	1671	0	1774	1723	1541
Q Serve(g_s), s	0.7	0.0	0.8	0.0	0.8	0.9	10.6	3.6	0.0	0.1	2.3	3.1
Cycle Q Clear(g_c), s	0.7	0.0	0.8	0.0	0.8	0.9	10.6	3.6	0.0	0.1	2.3	3.1
Prop In Lane	1.00		0.27	1.00		0.45	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1954	0	968	148	141	138	189	627	0	4	144	128
V/C Ratio(X)	0.02	0.00	0.03	0.00	0.09	0.10	0.85	0.19	0.00	0.52	0.25	0.33
Avail Cap(c_a), veh/h	1954	0	968	444	423	413	245	1103	0	59	388	347
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	11.4	0.0	50.8	50.8	52.7	41.1	0.0	59.8	51.5	51.8
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.3	0.3	19.0	0.1	0.0	81.3	0.9	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	0.0	0.4	0.4	6.2	1.7	0.0	0.2	1.2	1.4
LnGrp Delay(d),s/veh	11.4	0.0	11.4	0.0	51.1	51.1	71.7	41.2	0.0	141.1	52.4	53.3
LnGrp LOS	B		B		D	D	E	D		F	D	D
Approach Vol, veh/h	69			26			278			80		
Approach Delay, s/veh	11.4			51.1			58.7			55.1		
Approach LOS	B			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	73.0		17.2	14.9	14.9		4.7	27.4				
Change Period (Y+Rc), s	4.9		4.4	4.9	4.9		4.4	4.9				
Max Green Setting (Gmax), s	27.3		16.6	27.0	30.0		4.0	39.6				
Max Q Clear Time (g_c+I1), s	2.8		12.6	5.1	2.9		2.1	5.6				
Green Ext Time (p_c), s	0.2		0.2	0.8	0.1		0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	50.4											
HCM 2010 LOS	D											

APPENDIX E

EXISTING + PROJECT SYNCHRO INTERSECTION ANALYSIS WORKSHEETS

Explanation of Intersection Delay Decrease with the Addition of Project Traffic:

For purposes of this report, a decrease in delay was not shown in the report tables. Where a project induced decrease occurred, the previous scenario's (without project) delay was shown. This reduces any confusion on behalf of the reviewer while still showing there is no significant change in delay due to the project.

Under the HCM unsignalized/signalized methodology, it is possible to have better LOS or a decrease in delay with the project (in comparison to base conditions without the project), because the delay reported for the entire intersection is a weighted average of the different traffic movements on each approach based upon volumes. Therefore, the project-generated traffic may have been added to those movements with very good LOS, so that this benefit is further exemplified in the weighted average reported for the entire intersection.

Typically when the delay improves when volume is added it is due to the effect of volumes being added to movements that previously had lower delays than the intersection average delay, and therefore by adding more volume to those movements the intersection average delay actually decreases. Another factor may be that the allocation of green time given to each phase to balance the allocated green time for heavier movements.

HCM 2010 Signalized Intersection Summary

1: Heritage Road & Otay Mesa Rd

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	183	197	117	63	189	154	63	47	31	128	24	64
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	206	221	131	71	212	173	71	53	35	144	27	72
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	284	653	219	1903	2871	962	229	84	56	184	105	388
Arrive On Green	0.08	0.14	0.14	0.92	1.00	1.00	0.13	0.08	0.08	0.10	0.06	0.06
Sat Flow, veh/h	3442	4715	1580	3442	4715	1580	1774	1027	678	1774	1863	2787
Grp Volume(v), veh/h	206	221	131	71	212	173	71	0	88	144	27	72
Grp Sat Flow(s),veh/h/ln	1721	1572	1580	1721	1572	1580	1774	0	1705	1774	1863	1393
Q Serve(g_s), s	7.6	5.5	10.1	0.2	0.0	0.0	4.7	0.0	6.5	10.3	1.8	2.2
Cycle Q Clear(g_c), s	7.6	5.5	10.1	0.2	0.0	0.0	4.7	0.0	6.5	10.3	1.8	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	284	653	219	1903	2871	962	229	0	140	184	105	388
V/C Ratio(X)	0.72	0.34	0.60	0.04	0.07	0.18	0.31	0.00	0.63	0.78	0.26	0.19
Avail Cap(c_a), veh/h	582	653	219	1903	2871	962	273	0	315	423	502	981
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	50.6	52.6	2.2	0.0	0.0	51.4	0.0	57.9	56.9	58.7	28.6
Incr Delay (d2), s/veh	3.5	1.4	11.5	0.0	0.0	0.4	0.8	0.0	4.6	7.2	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.5	5.1	0.1	0.0	0.1	2.4	0.0	3.2	5.4	1.0	0.9
LnGrp Delay(d),s/veh	61.7	52.0	64.2	2.2	0.0	0.4	52.1	0.0	62.5	64.0	60.0	28.8
LnGrp LOS	E	D	E	A	A	A	D		E	E	E	C
Approach Vol, veh/h		558			456			159			243	
Approach Delay, s/veh		58.4			0.5			57.9			53.1	
Approach LOS		E			A			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	75.9	22.0	20.8	11.4	14.7	83.1	17.5	14.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	40.5	17.5	19.5	34.5	21.5	36.5	30.5	23.5				
Max Q Clear Time (g_c+I1), s	2.2	12.1	6.7	4.2	9.6	2.0	12.3	8.5				
Green Ext Time (p_c), s	2.2	0.8	0.6	0.4	0.7	2.2	0.7	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			38.8									
HCM 2010 LOS			D									
Notes												
User approved changes to right turn type.												

HCM 2010 Signalized Intersection Summary

2: Cactus Rd & Otay Mesa Rd

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	276	36	93	392	4	15	0	69	3	0	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1742	1900	1863	1729	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	9	285	37	96	404	4	15	0	71	3	0	3
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	45	2714	344	139	3316	33	64	187	158	21	142	120
Arrive On Green	0.05	1.00	1.00	0.08	0.69	0.68	0.04	0.00	0.10	0.01	0.00	0.08
Sat Flow, veh/h	1774	4274	541	1774	4818	48	1774	1863	1574	1774	1863	1583
Grp Volume(v), veh/h	9	209	113	96	264	144	15	0	71	3	0	3
Grp Sat Flow(s),veh/h/ln	1774	1585	1645	1774	1573	1720	1774	1863	1574	1774	1863	1583
Q Serve(g_s), s	0.6	0.0	0.0	6.9	3.7	3.7	1.1	0.0	5.5	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.0	6.9	3.7	3.7	1.1	0.0	5.5	0.2	0.0	0.2
Prop In Lane	1.00		0.33	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	45	2013	1045	139	2165	1184	64	187	158	21	142	120
V/C Ratio(X)	0.20	0.10	0.11	0.69	0.12	0.12	0.23	0.00	0.45	0.14	0.00	0.02
Avail Cap(c_a), veh/h	143	2013	1045	161	2165	1184	143	695	587	143	695	591
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.99	0.99	0.99	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.5	0.0	0.0	58.4	6.9	6.9	60.9	0.0	55.1	63.6	0.0	55.6
Incr Delay (d2), s/veh	2.1	0.1	0.2	9.8	0.1	0.2	1.9	0.0	2.0	3.1	0.0	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	0.3	0.0	0.1	3.7	1.6	1.8	0.6	0.0	2.5	0.1	0.0	0.1
LnGrp Delay(d),s/veh	62.6	0.1	0.2	68.2	7.0	7.1	62.8	0.0	57.1	66.7	0.0	55.7
LnGrp LOS	E	A	A	E	A	A	E		E	E		E
Approach Vol, veh/h	331			504			86			6		
Approach Delay, s/veh	1.8			18.7			58.1			61.2		
Approach LOS	A			B			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	89.3	9.9	15.5	8.5	96.2	6.7	18.6				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	6.1	* 5.7	7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	11.5	36.0	* 10	48.0	* 10	37.3	* 10	48.0				
Max Q Clear Time (g_c+1/9), s	10.9	2.0	3.1	2.2	2.6	5.7	2.2	7.5				
Green Ext Time (p_c), s	0.1	3.4	0.0	0.3	0.0	3.4	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			16.6									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary

3: Britannia Blvd & Otay Mesa Rd

Existing + Project AM

4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↑	↑	↑	↑↑↑↑	↑↑	↑		
Volume (veh/h)	235	113	272	309	180	373		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1727	1863	1863	1727	1863	1863		
Adj Flow Rate, veh/h	253	122	292	332	194	401		
Adj No. of Lanes	3	1	1	3	2	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	10	2	2	10	2	2		
Cap, veh/h	1639	1005	315	2777	989	455		
Arrive On Green	0.35	0.35	0.18	0.59	0.29	0.29		
Sat Flow, veh/h	4871	1583	1774	4871	3442	1583		
Grp Volume(v), veh/h	253	122	292	332	194	401		
Grp Sat Flow(s),veh/h/ln	1572	1583	1774	1572	1721	1583		
Q Serve(g_s), s	3.9	3.2	17.0	3.3	4.5	25.4		
Cycle Q Clear(g_c), s	3.9	3.2	17.0	3.3	4.5	25.4		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1639	1005	315	2777	989	455		
V/C Ratio(X)	0.15	0.12	0.93	0.12	0.20	0.88		
Avail Cap(c_a), veh/h	1639	1005	315	2777	1295	596		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.85	0.85	0.99	0.99		
Uniform Delay (d), s/veh	23.6	7.6	42.5	9.5	28.3	35.7		
Incr Delay (d2), s/veh	0.2	0.2	29.0	0.1	0.1	11.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.7	2.6	10.9	1.4	2.1	12.6		
LnGrp Delay(d),s/veh	23.8	7.8	71.5	9.6	28.4	47.4		
LnGrp LOS	C	A	E	A	C	D		
Approach Vol, veh/h	375			624	595			
Approach Delay, s/veh	18.6			38.6	41.2			
Approach LOS	B			D	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	25.3	43.2				68.5		36.5
Change Period (Y+Rc), s	7.2	* 7.2				7.2		6.8
Max Green Setting (Gmax), s	10.3	* 36				52.0		39.0
Max Q Clear Time (g_c+1.0), s	11.0	5.9				5.3		27.4
Green Ext Time (p_c), s	0.0	1.8				3.0		2.3
Intersection Summary								
HCM 2010 Ctrl Delay		34.9						
HCM 2010 LOS		C						
Notes								

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

Existing + Project AM

4/7/2016

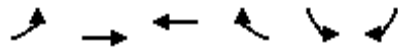
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  					 		
Volume (veh/h)	36	360	64	780	477	50	35	84	961	34	65	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1739	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	41	414	74	897	548	57	40	97	1105	39	75	17
Adj No. of Lanes	1	3	1	1	3	0	1	1	0	2	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	10	2	2	10	10	2	2	2	2	2	2
Cap, veh/h	517	624	208	574	720	74	102	43	494	196	493	112
Arrive On Green	0.29	0.13	0.13	0.32	0.16	0.16	0.06	0.34	0.33	0.06	0.34	0.33
Sat Flow, veh/h	1774	4715	1573	1774	4372	449	1774	129	1471	3442	1469	333
Grp Volume(v), veh/h	41	414	74	897	395	210	40	0	1202	39	0	92
Grp Sat Flow(s),veh/h/ln	1774	1572	1573	1774	1583	1657	1774	0	1600	1721	0	1802
Q Serve(g_s), s	2.5	12.5	5.4	48.5	17.9	18.2	3.3	0.0	50.4	1.6	0.0	5.4
Cycle Q Clear(g_c), s	2.5	12.5	5.4	48.5	17.9	18.2	3.3	0.0	50.4	1.6	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.92	1.00		0.18
Lane Grp Cap(c), veh/h	517	624	208	574	521	273	102	0	538	196	0	604
V/C Ratio(X)	0.08	0.66	0.36	1.56	0.76	0.77	0.39	0.00	2.24	0.20	0.00	0.15
Avail Cap(c_a), veh/h	517	1339	447	574	1180	617	124	0	538	241	0	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.90	0.90	0.90	0.86	0.00	0.86	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	61.9	41.3	50.7	59.8	60.0	68.2	0.0	50.0	67.5	0.0	34.9
Incr Delay (d2), s/veh	0.1	4.9	4.2	261.0	9.0	17.2	2.1	0.0	561.3	0.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.7	2.6	65.4	8.5	9.6	1.7	0.0	106.1	0.8	0.0	2.7
LnGrp Delay(d),s/veh	38.6	66.8	45.5	311.7	68.8	77.2	70.3	0.0	611.3	68.0	0.0	35.1
LnGrp LOS	D	E	D	F	E	E	E		F	E		D
Approach Vol, veh/h	529				1502		1242				131	
Approach Delay, s/veh	61.7				215.0		593.9				44.9	
Approach LOS	E				F		F				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.7	26.5	13.8	55.9	48.9	31.4	13.7	56.0				
Change Period (Y+Rc), s	5.7	* 7.2	* 5.7	6.1	5.7	* 7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	23.3	* 42	* 10	49.9	10.0	* 55	* 10	49.9				
Max Q Clear Time (g_c+5), s	50.5	14.5	5.3	7.4	4.5	20.2	3.6	52.4				
Green Ext Time (p_c), s	0.0	2.4	0.0	12.8	2.5	2.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	322.9											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary

5: Otay Mesa Rd & Piper Ranch Rd

Existing + Project AM

4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	184	1171	1221	125	101	86
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	209	1331	1388	142	140	71
Adj No. of Lanes	1	2	3	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	10	10	2	2	2
Cap, veh/h	644	2620	1729	701	270	120
Arrive On Green	0.36	0.80	0.37	0.37	0.08	0.08
Sat Flow, veh/h	1774	3368	4871	1583	3548	1583
Grp Volume(v), veh/h	209	1331	1388	142	140	71
Grp Sat Flow(s), veh/h/ln	1774	1641	1572	1583	1774	1583
Q Serve(g_s), s	7.7	12.4	23.8	4.9	3.4	3.9
Cycle Q Clear(g_c), s	7.7	12.4	23.8	4.9	3.4	3.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	644	2620	1729	701	270	120
V/C Ratio(X)	0.32	0.51	0.80	0.20	0.52	0.59
Avail Cap(c_a), veh/h	644	2620	1729	701	1419	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.70	0.70	1.00	1.00
Uniform Delay (d), s/veh	20.7	3.1	25.6	15.4	40.0	40.2
Incr Delay (d2), s/veh	0.2	0.5	2.9	0.5	1.5	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8.8	5.5	10.7	2.5	1.7	3.5
LnGrp Delay(d), s/veh	20.9	3.6	28.4	15.8	41.5	44.8
LnGrp LOS	C	A	C	B	D	D
Approach Vol, veh/h		1540	1530		211	
Approach Delay, s/veh		5.9	27.3		42.6	
Approach LOS		A	C		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		78.1		11.9	38.9	39.2		
Change Period (Y+Rc), s		6.2		5.1	6.2	* 6.2		
Max Green Setting (Gmax), s		42.7		36.0	5.0	* 33		
Max Q Clear Time (g_c+I1), s		14.4		5.9	9.7	25.8		
Green Ext Time (p_c), s		9.7		0.9	0.0	4.4		

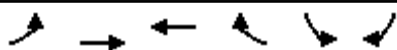
Intersection Summary								
HCM 2010 Ctrl Delay			18.2					
HCM 2010 LOS			B					

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
6: Otay Mesa Rd & SR 125 SB Off-Ramp

Existing + Project AM
4/7/2016



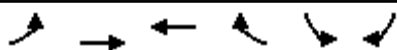
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑↑	↑↑↑↑		↘↘	↗		
Volume (veh/h)	0	1272	964	0	804	382		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1727	1727	0	1863	1863		
Adj Flow Rate, veh/h	0	1631	1236	0	1031	490		
Adj No. of Lanes	0	3	3	0	2	1		
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78		
Percent Heavy Veh, %	0	10	10	0	2	2		
Cap, veh/h	0	2148	2148	0	1168	538		
Arrive On Green	0.00	0.46	0.46	0.00	0.34	0.34		
Sat Flow, veh/h	0	5026	5026	0	3442	1583		
Grp Volume(v), veh/h	0	1631	1236	0	1031	490		
Grp Sat Flow(s),veh/h/ln	0	1572	1572	0	1721	1583		
Q Serve(g_s), s	0.0	17.3	11.6	0.0	16.9	17.8		
Cycle Q Clear(g_c), s	0.0	17.3	11.6	0.0	16.9	17.8		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2148	2148	0	1168	538		
V/C Ratio(X)	0.00	0.76	0.58	0.00	0.88	0.91		
Avail Cap(c_a), veh/h	0	2148	2148	0	1170	538		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	0.85	0.84	0.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	13.6	12.1	0.0	18.7	19.0		
Incr Delay (d2), s/veh	0.0	2.2	1.0	0.0	8.2	19.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	7.8	5.1	0.0	9.3	10.7		
LnGrp Delay(d),s/veh	0.0	15.8	13.0	0.0	26.8	38.8		
LnGrp LOS		B	B		C	D		
Approach Vol, veh/h		1631	1236		1521			
Approach Delay, s/veh		15.8	13.0		30.7			
Approach LOS		B	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		34.0		26.0		34.0		
Change Period (Y+Rc), s		7.2		6.1		7.2		
Max Green Setting (Gmax), s		26.8		19.9		26.8		
Max Q Clear Time (g_c+I1), s		19.3		19.8		13.6		
Green Ext Time (p_c), s		6.6		0.1		10.9		
Intersection Summary								
HCM 2010 Ctrl Delay			20.2					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

7: Otay Mesa Rd & SR125 NB On-Ramp

Existing + Project AM

4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↱	↰↱	↰↱↰↱	↰↱		
Volume (veh/h)	164	1912	964	609	0	0
Number	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1753	1863		
Adj Flow Rate, veh/h	202	2360	1060	839		
Adj No. of Lanes	2	2	2	2		
Peak Hour Factor	0.81	0.81	0.81	0.81		
Percent Heavy Veh, %	2	10	10	2		
Cap, veh/h	428	14448	14548	13133		
Arrive On Green	0.12	1.00	1.00	1.00		
Sat Flow, veh/h	3442	3368	3507	3166		
Grp Volume(v), veh/h	202	2360	1060	839		
Grp Sat Flow(s),veh/h/ln	1721	1641	1753	1583		
Q Serve(g_s), s	2.2	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.0		
Prop In Lane	1.00			1.00		
Lane Grp Cap(c), veh/h	428	14448	14548	13133		
V/C Ratio(X)	0.47	0.16	0.07	0.06		
Avail Cap(c_a), veh/h	482	14448	14548	13133		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.49	0.49	1.00	1.00		
Uniform Delay (d), s/veh	16.3	0.0	0.0	0.0		
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.0		
LnGrp Delay(d),s/veh	16.7	0.0	0.0	0.0		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2562	1899			
Approach Delay, s/veh		1.3	0.0			
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		187.0			10.2	176.8		
Change Period (Y+Rc), s		* 7.2			* 5.7	7.2		
Max Green Setting (Gmax), s		* 37			* 5.1	22.0		
Max Q Clear Time (g_c+l1), s		2.0			4.2	2.0		
Green Ext Time (p_c), s		32.5			0.1	19.1		

Intersection Summary								
HCM 2010 Ctrl Delay			0.8					
HCM 2010 LOS			A					

Notes

User approved volume balancing among the lanes for turning movement.

Intersection												
Int Delay, s/veh		1737										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	342	1569	1	0	1043	45	1	0	0	69	0	529
Conflicting Peds, #/hr	0	0	1	0	0	1	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	433	1986	1	0	1320	57	1	0	0	87	0	670
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1377	0	0	1988	0	0	3514	4231	996	3209	4203	690
Stage 1	-	-	-	-	-	-	2854	2854	-	1349	1349	-
Stage 2	-	-	-	-	-	-	660	1377	-	1860	2854	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	494	-	-	286	-	-	2	2	243	~ 4	2	~ 388
Stage 1	-	-	-	-	-	-	17	37	-	159	217	-
Stage 2	-	-	-	-	-	-	418	211	-	~ 76	37	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	494	-	-	286	-	-	-	2	243	~ 4	2	~ 388
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	2	-	~ 4	2	-
Stage 1	-	-	-	-	-	-	17	37	-	159	217	-
Stage 2	-	-	-	-	-	-	-	211	-	~ 76	37	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	8			0						\$ 10428.4		
HCM LOS							-			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	494	-	-	286	-	-	32				
HCM Lane V/C Ratio	-	0.876	-	-	-	-	-	23.655				
HCM Control Delay (s)	-	44.9	0	-	0	-		\$ 10428.4				
HCM Lane LOS	-	E	A	-	A	-	-	F				
HCM 95th %tile Q(veh)	-	9.5	-	-	0	-	-	93.7				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon				

HCM 2010 Signalized Intersection Summary

9: Sanyo Ave/Sunroad Blvd & Otay Mesa Rd

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	294	982	362	41	533	43	97	44	30	68	68	458
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1777	1900	1863	1736	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	320	1228	452	51	666	47	104	72	38	74	74	498
Adj No. of Lanes	0	2	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.80	0.80	0.80	0.80	0.92	0.80	0.92	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	244	945	411	66	1156	82	141	268	142	66	46	264
Arrive On Green	0.21	0.21	0.21	0.04	0.72	0.72	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	321	1483	644	1774	1603	113	837	1149	607	140	196	1130
Grp Volume(v), veh/h	952	0	1048	51	0	713	104	0	110	646	0	0
Grp Sat Flow(s),veh/h/ln	954	0	1494	1774	0	1716	837	0	1756	1466	0	0
Q Serve(g_s), s	62.3	0.0	76.5	3.4	0.0	23.8	0.0	0.0	6.1	21.9	0.0	0.0
Cycle Q Clear(g_c), s	76.5	0.0	76.5	3.4	0.0	23.8	28.0	0.0	6.1	28.0	0.0	0.0
Prop In Lane	0.34		0.43	1.00		0.07	1.00		0.35	0.11		0.77
Lane Grp Cap(c), veh/h	648	0	952	66	0	1238	141	0	410	375	0	0
V/C Ratio(X)	1.47	0.00	1.10	0.78	0.00	0.58	0.74	0.00	0.27	1.72	0.00	0.00
Avail Cap(c_a), veh/h	648	0	952	93	0	1238	141	0	410	375	0	0
HCM Platoon Ratio	0.33	0.33	0.33	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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.4	0.0	47.4	57.3	0.0	8.0	49.0	0.0	37.6	47.8	0.0	0.0
Incr Delay (d2), s/veh	219.3	0.0	60.9	22.7	0.0	2.0	18.0	0.0	0.3	335.5	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	61.0	0.0	47.8	2.1	0.0	11.8	4.1	0.0	3.0	47.4	0.0	0.0
LnGrp Delay(d),s/veh	275.7	0.0	108.3	80.0	0.0	9.9	67.1	0.0	38.0	383.2	0.0	0.0
LnGrp LOS	F		F	F		A	E		D	F		
Approach Vol, veh/h	2000			764			214			646		
Approach Delay, s/veh	187.9			14.6			52.1			383.2		
Approach LOS	F			B			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.1	83.9		34.1		94.0		34.1				
Change Period (Y+Rc), s	* 5.7	7.2		* 6.1		7.2		6.1				
Max Green Setting (Gmax), s	* 6.3	68.8		* 28		80.8		25.9				
Max Q Clear Time (g_c+l1), s	5.4	78.5		30.0		25.8		30.0				
Green Ext Time (p_c), s	0.0	0.0		0.0		34.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	178.2											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

Intersection						
Int Delay, s/veh	258.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	251	829	227	76	119	390
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	92	92	92	92	92	92
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	273	901	247	83	129	424
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	329	0	-	0	1735	288
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	1447	-
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	1231	-	-	-	~ 96	751
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	216	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1231	-	-	-	~ 53	751
Mov Cap-2 Maneuver	-	-	-	-	~ 53	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	~ 120	-
Approach	EB		WB		SB	
HCM Control Delay, s	2		0		\$ 956.1	
HCM LOS					F	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1231	-	-	-	184	
HCM Lane V/C Ratio	0.222	-	-	-	3.007	
HCM Control Delay (s)	8.8	0	-	-	\$ 956.1	
HCM Lane LOS	A	A	-	-	F	
HCM 95th %tile Q(veh)	0.8	-	-	-	50.3	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 2010 Signalized Intersection Summary

11: Enrico Fermi Rd & Otay Mesa Rd

Existing + Project AM

4/7/2016

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Volume (veh/h)	709	235	13	159	147	47		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1759	1900	1863	1727	1863	1863		
Adj Flow Rate, veh/h	933	309	17	209	193	62		
Adj No. of Lanes	1	0	1	1	1	1		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76		
Percent Heavy Veh, %	10	10	2	10	2	2		
Cap, veh/h	902	299	26	1330	234	202		
Arrive On Green	0.71	0.71	0.01	0.77	0.13	0.13		
Sat Flow, veh/h	1266	419	1774	1727	1774	1583		
Grp Volume(v), veh/h	0	1242	17	209	193	62		
Grp Sat Flow(s),veh/h/ln	0	1685	1774	1727	1774	1583		
Q Serve(g_s), s	0.0	80.1	1.1	3.6	11.9	4.0		
Cycle Q Clear(g_c), s	0.0	80.1	1.1	3.6	11.9	4.0		
Prop In Lane		0.25	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	0	1201	26	1330	234	202		
V/C Ratio(X)	0.00	1.03	0.65	0.16	0.82	0.31		
Avail Cap(c_a), veh/h	0	1201	73	1375	308	268		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	16.2	55.1	3.4	47.5	44.5		
Incr Delay (d2), s/veh	0.0	35.2	24.4	0.1	12.8	0.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	48.1	0.7	1.7	6.7	1.8		
LnGrp Delay(d),s/veh	0.0	51.4	79.5	3.4	60.3	45.4		
LnGrp LOS		F	E	A	E	D		
Approach Vol, veh/h	1242			226	255			
Approach Delay, s/veh	51.4			9.2	56.7			
Approach LOS	D			A	E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.4	85.6				92.0		20.3
Change Period (Y+Rc), s	4.8	6.0				6.0		6.0
Max Green Setting (Gmax), s	4.6	79.6				89.0		19.0
Max Q Clear Time (g_c+l1), s	3.1	82.1				5.6		13.9
Green Ext Time (p_c), s	0.0	0.0				14.5		0.4
Intersection Summary								
HCM 2010 Ctrl Delay			46.7					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary

12: Britannia Blvd & SR-905 WB Ramps

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	136	4	216	129	337	0	0	251	134
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1810	1807	1810	1810	1727	0	0	1755	1900
Adj Flow Rate, veh/h				145	0	233	137	359	0	0	267	143
Adj No. of Lanes				1	0	2	2	3	0	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				5	10	5	5	10	0	0	10	10
Cap, veh/h				202	0	361	211	3627	0	0	2089	976
Arrive On Green				0.12	0.00	0.12	0.06	0.77	0.00	0.00	0.65	0.65
Sat Flow, veh/h				1723	0	3076	3343	4871	0	0	3352	1492
Grp Volume(v), veh/h				145	0	233	137	359	0	0	267	143
Grp Sat Flow(s),veh/h/ln				1723	0	1538	1672	1572	0	0	1597	1492
Q Serve(g_s), s				7.3	0.0	6.5	3.6	1.7	0.0	0.0	2.8	3.3
Cycle Q Clear(g_c), s				7.3	0.0	6.5	3.6	1.7	0.0	0.0	2.8	3.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				202	0	361	211	3627	0	0	2089	976
V/C Ratio(X)				0.72	0.00	0.64	0.65	0.10	0.00	0.00	0.13	0.15
Avail Cap(c_a), veh/h				553	0	988	568	3627	0	0	2089	976
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.99	0.99	0.00	0.00	0.09	0.09
Uniform Delay (d), s/veh				38.3	0.0	37.9	41.2	2.6	0.0	0.0	5.9	6.0
Incr Delay (d2), s/veh				4.7	0.0	1.9	3.3	0.1	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
%ile BackOfQ(50%),veh/ln				3.7	0.0	2.8	1.8	0.7	0.0	0.0	1.2	1.4
LnGrp Delay(d),s/veh				42.9	0.0	39.8	44.5	2.6	0.0	0.0	5.9	6.0
LnGrp LOS				D		D	D	A			A	A
Approach Vol, veh/h				378			496			410		
Approach Delay, s/veh				41.0			14.2			5.9		
Approach LOS				D			B			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		74.3			10.4	64.0		15.7				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		50.9			* 15	30.9		28.9				
Max Q Clear Time (g_c+I1), s		3.7			5.6	5.3		9.3				
Green Ext Time (p_c), s		6.2			0.3	5.6		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				19.5								
HCM 2010 LOS				B								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

13: Britannia Blvd & SR-905 EB Ramps

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					 		 	 	
Volume (veh/h)	225	2	621	0	0	0	0	241	38	52	335	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1809	1810				0	1738	1900	1810	1727	0
Adj Flow Rate, veh/h	247	2	682				0	265	42	57	368	0
Adj No. of Lanes	0	1	2				0	2	0	2	3	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	10	5				0	10	10	5	10	0
Cap, veh/h	495	4	784				0	1372	215	150	2749	0
Arrive On Green	0.29	0.29	0.29				0.00	0.48	0.48	0.04	0.58	0.00
Sat Flow, veh/h	1710	14	2707				0	2949	448	3343	4871	0
Grp Volume(v), veh/h	249	0	682				0	151	156	57	368	0
Grp Sat Flow(s),veh/h/ln	1723	0	1354				0	1651	1659	1672	1572	0
Q Serve(g_s), s	9.6	0.0	19.1				0.0	4.2	4.3	1.3	2.8	0.0
Cycle Q Clear(g_c), s	9.6	0.0	19.1				0.0	4.2	4.3	1.3	2.8	0.0
Prop In Lane	0.99		1.00				0.00		0.27	1.00		0.00
Lane Grp Cap(c), veh/h	499	0	784				0	791	795	150	2749	0
V/C Ratio(X)	0.50	0.00	0.87				0.00	0.19	0.20	0.38	0.13	0.00
Avail Cap(c_a), veh/h	558	0	876				0	791	795	305	2749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	23.6	0.0	27.0				0.0	11.9	12.0	37.1	7.5	0.0
Incr Delay (d2), s/veh	0.8	0.0	8.7				0.0	0.5	0.5	1.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	8.1				0.0	2.0	2.1	0.6	1.3	0.0
LnGrp Delay(d),s/veh	24.4	0.0	35.7				0.0	12.5	12.5	38.7	7.6	0.0
LnGrp LOS	C		D					B	B	D	A	
Approach Vol, veh/h		931						307			425	
Approach Delay, s/veh		32.7						12.5			11.8	
Approach LOS		C						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	8.3	43.4		28.3		51.7						
Change Period (Y+Rc), s	4.7	5.1		5.1		5.1						
Max Green Setting (Gmax), s	7.3	31.9		25.9		43.9						
Max Q Clear Time (g_c+I), s	13.3	6.3		21.1		4.8						
Green Ext Time (p_c), s	0.0	4.7		2.0		5.0						
Intersection Summary												
HCM 2010 Ctrl Delay			23.6									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary

14: La Media Rd & St Andrews Ave/SR-905 WB Ramps

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	38	8	33	87	116	1083	84	0	948	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1729	1810	1810	1727	1810	0	1727	1810
Adj Flow Rate, veh/h	0	0	44	9	38	101	135	1259	98	0	1102	27
Adj No. of Lanes	1	1	0	1	1	1	2	2	1	0	3	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	5	10	10	5	10	5	5	10	5	0	10	5
Cap, veh/h	64	0	57	149	150	133	206	2318	1084	0	2794	911
Arrive On Green	0.00	0.00	0.04	0.09	0.09	0.09	0.06	0.71	0.71	0.00	0.59	0.59
Sat Flow, veh/h	1723	0	1538	1723	1729	1538	3343	3282	1535	0	4871	1538
Grp Volume(v), veh/h	0	0	44	9	38	101	135	1259	98	0	1102	27
Grp Sat Flow(s),veh/h/ln	1723	0	1538	1723	1729	1538	1672	1641	1535	0	1572	1538
Q Serve(g_s), s	0.0	0.0	2.6	0.4	1.8	5.8	3.6	16.5	1.8	0.0	11.2	0.7
Cycle Q Clear(g_c), s	0.0	0.0	2.6	0.4	1.8	5.8	3.6	16.5	1.8	0.0	11.2	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	64	0	57	149	150	133	206	2318	1084	0	2794	911
V/C Ratio(X)	0.00	0.00	0.77	0.06	0.25	0.76	0.66	0.54	0.09	0.00	0.39	0.03
Avail Cap(c_a), veh/h	151	0	135	266	267	238	420	2318	1084	0	2794	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	1.00	0.52	0.52	0.52	0.00	0.09	0.09
Uniform Delay (d), s/veh	0.0	0.0	43.0	37.7	38.4	40.2	41.3	6.3	4.1	0.0	9.8	7.6
Incr Delay (d2), s/veh	0.0	0.0	19.4	0.2	0.9	8.4	1.9	0.5	0.1	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	0.0	0.0	1.4	0.2	0.9	2.8	1.7	7.5	0.8	0.0	4.8	0.3
LnGrp Delay(d),s/veh	0.0	0.0	62.4	37.9	39.3	48.6	43.2	6.8	4.2	0.0	9.8	7.6
LnGrp LOS			E	D	D	D	D	A	A		A	A
Approach Vol, veh/h	44				148				1492		1129	
Approach Delay, s/veh	62.4				45.5				9.9		9.7	
Approach LOS	E				D				A		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	68.7		8.4		10.2		58.4		12.9			
Change Period (Y+Rc), s	5.1		5.1		* 4.7		5.1		5.1			
Max Green Setting (Gmax), s	52.9		7.9		* 11		36.9		13.9			
Max Q Clear Time (g_c+I1), s	18.5		4.6		5.6		13.2		7.8			
Green Ext Time (p_c), s	25.1		0.0		0.2		18.8		0.2			
Intersection Summary												
HCM 2010 Ctrl Delay			12.5									
HCM 2010 LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary 15: La Media Rd & SR-905 EB Ramps

Existing + Project AM
4/7/2016

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	1078	407	7	205	216	97		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1810	1727	1727	1810		
Adj Flow Rate, veh/h	1299	490	8	247	260	117		
Adj No. of Lanes	2	2	2	3	2	1		
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83		
Percent Heavy Veh, %	5	5	5	10	10	5		
Cap, veh/h	1401	1134	33	2303	1430	1315		
Arrive On Green	0.42	0.42	0.01	0.49	0.44	0.44		
Sat Flow, veh/h	3343	2707	3343	4871	3368	1538		
Grp Volume(v), veh/h	1299	490	8	247	260	117		
Grp Sat Flow(s),veh/h/ln	1672	1354	1672	1572	1641	1538		
Q Serve(g_s), s	40.6	14.1	0.3	3.1	5.3	1.3		
Cycle Q Clear(g_c), s	40.6	14.1	0.3	3.1	5.3	1.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1401	1134	33	2303	1430	1315		
V/C Ratio(X)	0.93	0.43	0.24	0.11	0.18	0.09		
Avail Cap(c_a), veh/h	1456	1179	152	2303	1430	1315		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.93	0.93		
Uniform Delay (d), s/veh	30.4	22.7	54.1	15.2	19.0	1.3		
Incr Delay (d2), s/veh	10.4	0.3	3.7	0.1	0.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	20.8	11.8	0.1	1.4	2.5	2.2		
LnGrp Delay(d),s/veh	40.7	22.9	57.8	15.3	19.3	1.4		
LnGrp LOS	D	C	E	B	B	A		
Approach Vol, veh/h	1789			255	377			
Approach Delay, s/veh	35.9			16.6	13.7			
Approach LOS	D			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		58.8		51.2	5.8	53.0		
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		
Max Green Setting (Gmax), s		51.9		47.9	* 5	42.2		
Max Q Clear Time (g_c+l1), s		5.1		42.6	2.3	7.3		
Green Ext Time (p_c), s		4.3		3.5	0.0	4.2		
Intersection Summary								
HCM 2010 Ctrl Delay			30.4					
HCM 2010 LOS			C					
Notes								

Intersection

Intersection Delay, s/veh12.7

Intersection LOS B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	61	52	42	0	3	75	102	0	18	42	7	0	112	189	119
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	10	2	10	2	10	2	10	2	10	2	10	2	10	2	10	2
Mvmt Flow	0	66	56	45	0	3	81	110	0	19	45	8	0	120	203	128
Number of Lanes	0	0	1	0	0	1	2	0	0	1	1	0	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	1
HCM Control Delay	12.4	10	10.4	14.3
HCM LOS	B	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	39%	100%	0%	0%	37%	0%
Vol Thru, %	0%	86%	34%	0%	100%	20%	63%	0%
Vol Right, %	0%	14%	27%	0%	0%	80%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	49	155	3	50	127	301	119
LT Vol	18	0	61	3	0	0	112	0
Through Vol	0	42	52	0	50	25	189	0
RT Vol	0	7	42	0	0	102	0	119
Lane Flow Rate	19	53	167	3	54	137	324	128
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.039	0.1	0.309	0.006	0.097	0.218	0.553	0.192
Departure Headway (Hd)	7.333	6.861	6.668	6.834	6.465	5.758	6.147	5.391
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	521	538	523	553	621	586	665
Service Time	5.097	4.626	4.424	4.585	4.216	3.509	3.887	3.131
HCM Lane V/C Ratio	0.039	0.102	0.31	0.006	0.098	0.221	0.553	0.192
HCM Control Delay	10.4	10.4	12.4	9.6	9.9	10.1	16.3	9.4
HCM Lane LOS	B	B	B	A	A	B	C	A
HCM 95th-tile Q	0.1	0.3	1.3	0	0.3	0.8	3.4	0.7

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	43	78	17	77	2	91	28	20	1	49	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	0	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	150	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	10	2	2	10	2	2	10	2	10	2	2
Mvmt Flow	22	54	98	21	96	2	114	35	25	1	61	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	153	0	0	277	297	78	237	344	55
Stage 1	-	-	-	-	-	-	150	150	-	146	146	-
Stage 2	-	-	-	-	-	-	127	147	-	91	198	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.7	6.94	7.7	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.7	-	6.7	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.7	-	6.7	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.1	3.32	3.6	4.02	3.32
Pot Cap-1 Maneuver	1484	-	-	1425	-	-	654	595	967	677	577	1000
Stage 1	-	-	-	-	-	-	837	753	-	819	775	-
Stage 2	-	-	-	-	-	-	863	756	-	883	736	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1484	-	-	1425	-	-	576	573	965	611	556	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	576	573	-	611	556	-
Stage 1	-	-	-	-	-	-	823	740	-	802	760	-
Stage 2	-	-	-	-	-	-	770	741	-	807	723	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			1.3			12.1			11.8		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	576	690	1484	-	-	1425	-	-	609			
HCM Lane V/C Ratio	0.197	0.087	0.015	-	-	0.015	-	-	0.127			
HCM Control Delay (s)	12.8	10.7	7.5	-	-	7.6	-	-	11.8			
HCM Lane LOS	B	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.7	0.3	0	-	-	0	-	-	0.4			

HCM 2010 Signalized Intersection Summary
18: Enrico Fermi Rd & Airway Rd

Existing + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	2	17	5	5	1	38	186	15	1	232	34
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1737	1900	1863	1744	1900
Adj Flow Rate, veh/h	26	2	18	5	5	1	41	202	16	1	252	37
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	10	2	2	10	2	2	10	10	2	10	10
Cap, veh/h	73	277	392	10	242	221	129	811	64	6	597	87
Arrive On Green	0.04	0.16	0.18	0.01	0.14	0.14	0.07	0.26	0.25	0.00	0.21	0.21
Sat Flow, veh/h	1774	1727	1575	1774	1727	1578	1774	3099	243	1774	2904	421
Grp Volume(v), veh/h	26	2	18	5	5	1	41	107	111	1	142	147
Grp Sat Flow(s),veh/h/ln	1774	1727	1575	1774	1727	1578	1774	1650	1692	1774	1656	1668
Q Serve(g_s), s	0.5	0.0	0.3	0.1	0.1	0.0	0.7	1.6	1.7	0.0	2.4	2.5
Cycle Q Clear(g_c), s	0.5	0.0	0.3	0.1	0.1	0.0	0.7	1.6	1.7	0.0	2.4	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.25
Lane Grp Cap(c), veh/h	73	277	392	10	242	221	129	432	443	6	341	343
V/C Ratio(X)	0.35	0.01	0.05	0.52	0.02	0.00	0.32	0.25	0.25	0.18	0.42	0.43
Avail Cap(c_a), veh/h	716	2167	2116	468	1953	1784	865	2229	2287	507	1929	1943
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	15.0	11.4	9.2	16.0	11.9	11.9	14.2	9.4	9.4	16.0	11.1	11.1
Incr Delay (d2), s/veh	2.9	0.0	0.0	37.1	0.0	0.0	1.4	0.3	0.3	15.0	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.1	0.0	0.0	0.4	0.8	0.8	0.0	1.1	1.2
LnGrp Delay(d),s/veh	17.9	11.4	9.2	53.1	12.0	11.9	15.6	9.7	9.7	31.1	11.9	12.0
LnGrp LOS	B	B	A	D	B	B	B	A	A	C	B	B
Approach Vol, veh/h		46			11			259			290	
Approach Delay, s/veh		14.2			30.7			10.6			12.0	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.7	9.8	6.6	12.1	4.3	9.1	4.8	13.9				
Change Period (Y+Rc), s	3.5	4.6	4.8	6.0	3.5	4.6	4.8	6.0				
Max Green Setting (Gmax), s	8.5	40.4	15.2	37.0	12.5	36.4	9.2	43.0				
Max Q Clear Time (g_c+I1), s	2.1	2.3	2.7	4.5	2.5	2.1	2.0	3.7				
Green Ext Time (p_c), s	0.0	0.1	0.1	2.1	0.0	0.1	0.0	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			11.9									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
19: SR905 SB Ramps & Siempre Viva Road/Siempre Viva

Existing + Project AM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵↵	↑↑↑	↵	↵↵
Volume (veh/h)	296	86	304	801	0	534
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1782	1900	1863	1759	1863	1863
Adj Flow Rate, veh/h	340	99	349	921	0	614
Adj No. of Lanes	3	0	2	3	1	2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	8	8	2	8	2	2
Cap, veh/h	1792	495	417	3140	445	699
Arrive On Green	0.48	0.47	0.12	0.65	0.00	0.25
Sat Flow, veh/h	3925	1039	3442	4961	1774	2787
Grp Volume(v), veh/h	290	149	349	921	0	614
Grp Sat Flow(s),veh/h/ln	1621	1562	1721	1601	1774	1393
Q Serve(g_s), s	4.6	5.0	8.9	7.4	0.0	19.1
Cycle Q Clear(g_c), s	4.6	5.0	8.9	7.4	0.0	19.1
Prop In Lane		0.67	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1543	743	417	3140	445	699
V/C Ratio(X)	0.19	0.20	0.84	0.29	0.00	0.88
Avail Cap(c_a), veh/h	1543	743	417	3140	513	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	13.8	38.7	6.7	0.0	32.4
Incr Delay (d2), s/veh	0.3	0.6	13.9	0.2	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.3	5.0	3.3	0.0	8.2
LnGrp Delay(d),s/veh	13.8	14.4	52.6	6.9	0.0	42.3
LnGrp LOS	B	B	D	A		D
Approach Vol, veh/h	439			1270	614	
Approach Delay, s/veh	14.0			19.5	42.3	
Approach LOS	B			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.0	47.4				63.4		26.6
Change Period (Y+Rc), s	5.1	5.1				* 5.1		4.0
Max Green Setting (Gmax), s	10.9	38.9				* 56		26.0
Max Q Clear Time (g_c+10), s	10.9	7.0				9.4		21.1
Green Ext Time (p_c), s	0.0	7.9				8.3		1.5

Intersection Summary

HCM 2010 Ctrl Delay	24.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	830	811	0	0	294
Conflicting Peds, #/hr	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	8	8	2	2	2
Mvmt Flow	0	943	922	0	0	334
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	922	0	-	0	1299	461
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	427	-	-	-	219	468
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	607	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	427	-	-	-	219	468
Mov Cap-2 Maneuver	-	-	-	-	241	-
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	607	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		29.7	
HCM LOS					D	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	427	-	-	-	468	
HCM Lane V/C Ratio	-	-	-	-	0.714	
HCM Control Delay (s)	0	-	-	-	29.7	
HCM Lane LOS	A	-	-	-	D	
HCM 95th %tile Q(veh)	0	-	-	-	5.6	

HCM 2010 Signalized Intersection Summary
 21: SR 905 NB Off Ramp/SR 905 NB Ramps & Siempre Viva Road

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	119	711	0	0	536	355	275	2	423	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1759	0	0	1781	1863	1900	1863	1863			
Adj Flow Rate, veh/h	121	726	0	0	499	394	281	2	432			
Adj No. of Lanes	2	3	0	0	2	2	0	1	2			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	8	0	0	8	2	2	2	2			
Cap, veh/h	1077	3352	0	0	1190	1056	370	3	585			
Arrive On Green	0.31	0.70	0.00	0.00	0.33	0.33	0.20	0.21	0.21			
Sat Flow, veh/h	3442	4961	0	0	3562	3162	1762	13	2787			
Grp Volume(v), veh/h	121	726	0	0	499	394	283	0	432			
Grp Sat Flow(s),veh/h/ln	1721	1601	0	0	1781	1581	1775	0	1393			
Q Serve(g_s), s	2.5	5.4	0.0	0.0	10.8	9.5	15.0	0.0	14.5			
Cycle Q Clear(g_c), s	2.5	5.4	0.0	0.0	10.8	9.5	15.0	0.0	14.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	1077	3352	0	0	1190	1056	373	0	585			
V/C Ratio(X)	0.11	0.22	0.00	0.00	0.42	0.37	0.76	0.00	0.74			
Avail Cap(c_a), veh/h	1077	3352	0	0	1190	1056	681	0	1070			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	0.59	0.59	1.00	0.00	1.00			
Uniform Delay (d), s/veh	24.5	5.4	0.0	0.0	25.8	25.3	37.4	0.0	36.9			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.6	0.6	3.2	0.0	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			
%ile BackOfQ(50%),veh/ln	1.2	2.4	0.0	0.0	5.4	4.2	7.7	0.0	5.7			
LnGrp Delay(d),s/veh	24.5	5.5	0.0	0.0	26.4	25.9	40.6	0.0	38.8			
LnGrp LOS	C	A			C	C	D		D			
Approach Vol, veh/h		847			893			715				
Approach Delay, s/veh		8.2			26.2			39.5				
Approach LOS		A			C			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		74.4			36.4	38.0		25.6				
Change Period (Y+Rc), s		5.1			5.1	* 5.1		5.1				
Max Green Setting (Gmax), s		51.9			14.3	* 33		37.9				
Max Q Clear Time (g_c+l1), s		7.4			4.5	12.8		17.0				
Green Ext Time (p_c), s		4.7			3.1	4.5		3.5				
Intersection Summary												
HCM 2010 Ctrl Delay			23.9									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
22: Paseo De Las Americas & Siempre Viva Road

Existing + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑		↰	↑↑		↰	↑↑	
Volume (veh/h)	219	297	155	7	706	7	144	60	2	3	81	141
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1863	1760	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	243	330	172	8	784	8	160	67	2	3	90	157
Adj No. of Lanes	1	3	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	2	2	8	8	2	2	2	2	2	2
Cap, veh/h	293	2116	696	24	979	10	207	1228	36	16	429	376
Arrive On Green	0.17	0.44	0.44	0.01	0.29	0.28	0.12	0.35	0.35	0.01	0.24	0.24
Sat Flow, veh/h	1774	4803	1580	1774	3391	35	1774	3507	104	1774	1770	1551
Grp Volume(v), veh/h	243	330	172	8	387	405	160	34	35	3	90	157
Grp Sat Flow(s),veh/h/ln	1774	1601	1580	1774	1672	1753	1774	1770	1842	1774	1770	1551
Q Serve(g_s), s	11.8	3.7	6.1	0.4	19.0	19.0	7.8	1.1	1.1	0.1	3.6	7.6
Cycle Q Clear(g_c), s	11.8	3.7	6.1	0.4	19.0	19.0	7.8	1.1	1.1	0.1	3.6	7.6
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	293	2116	696	24	483	506	207	620	645	16	429	376
V/C Ratio(X)	0.83	0.16	0.25	0.33	0.80	0.80	0.77	0.05	0.05	0.19	0.21	0.42
Avail Cap(c_a), veh/h	401	2449	806	90	559	586	341	978	1018	90	727	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	35.9	14.9	15.6	43.4	29.2	29.2	38.1	19.1	19.1	43.7	26.9	28.6
Incr Delay (d2), s/veh	10.0	0.0	0.2	7.7	7.1	6.8	6.0	0.0	0.0	5.8	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	1.6	2.6	0.2	9.7	10.1	4.2	0.5	0.6	0.1	1.8	3.3
LnGrp Delay(d),s/veh	45.9	15.0	15.8	51.1	36.4	36.1	44.1	19.2	19.2	49.5	27.1	29.3
LnGrp LOS	D	B	B	D	D	D	D	B	B	D	C	C
Approach Vol, veh/h	745			800			229			250		
Approach Delay, s/veh	25.2			36.4			36.6			28.8		
Approach LOS	C			D			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	43.5	14.3	25.9	18.6	30.1	4.7	35.5				
Change Period (Y+Rc), s	4.4	4.9	4.4	4.9	4.4	4.9	4.4	4.9				
Max Green Setting (Gmax), s	4.0	44.8	16.6	36.0	19.6	29.2	4.0	48.6				
Max Q Clear Time (g_c+I), s	12.4	8.1	9.8	9.6	13.8	21.0	2.1	3.1				
Green Ext Time (p_c), s	0.0	6.8	0.3	1.3	0.5	3.8	0.0	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay	31.4											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
23: Enrico Fermi Rd & Siempre Viva Road

Existing + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	158	11	15	0	27	10	140	85	0	6	43	193
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1817	1900	1863	1787	1900	1863	1759	1900	1863	1843	1900
Adj Flow Rate, veh/h	172	12	16	0	29	11	152	92	0	7	47	210
Adj No. of Lanes	2	1	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	8	8	2	8	8	2	8	8	2	8	8
Cap, veh/h	1704	350	466	158	218	78	171	835	0	12	280	250
Arrive On Green	0.50	0.50	0.50	0.00	0.09	0.09	0.10	0.25	0.00	0.01	0.16	0.16
Sat Flow, veh/h	3442	706	942	1774	2447	875	1774	3431	0	1774	1751	1564
Grp Volume(v), veh/h	172	0	28	0	20	20	152	92	0	7	47	210
Grp Sat Flow(s),veh/h/ln	1721	0	1648	1774	1697	1625	1774	1671	0	1774	1751	1564
Q Serve(g_s), s	3.2	0.0	1.0	0.0	1.3	1.4	10.2	2.5	0.0	0.5	2.8	15.6
Cycle Q Clear(g_c), s	3.2	0.0	1.0	0.0	1.3	1.4	10.2	2.5	0.0	0.5	2.8	15.6
Prop In Lane	1.00		0.57	1.00		0.54	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1704	0	816	158	151	144	171	835	0	12	280	250
V/C Ratio(X)	0.10	0.00	0.03	0.00	0.13	0.14	0.89	0.11	0.00	0.57	0.17	0.84
Avail Cap(c_a), veh/h	1704	0	816	444	424	406	171	1103	0	59	467	417
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	0.00	1.00	1.00	1.00	1.00	0.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	16.1	0.0	15.6	0.0	50.4	50.4	53.5	34.7	0.0	59.4	43.5	48.9
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.0	0.4	0.4	38.4	0.1	0.0	34.4	0.3	7.3
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	1.5	0.0	0.5	0.0	0.6	0.6	6.8	1.2	0.0	0.3	1.4	7.3
LnGrp Delay(d),s/veh	16.2	0.0	15.6	0.0	50.8	50.9	92.0	34.8	0.0	93.8	43.8	56.2
LnGrp LOS	B		B		D	D	F	C		F	D	E
Approach Vol, veh/h	200					40		244		264		
Approach Delay, s/veh	16.1					50.8		70.4		55.0		
Approach LOS	B					D		E		E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	64.3		16.0	24.1	15.6		5.2	34.9				
Change Period (Y+Rc), s	4.9		4.4	4.9	4.9		4.4	4.9				
Max Green Setting (Gmax), s	27.3		11.6	32.0	30.0		4.0	39.6				
Max Q Clear Time (g_c+I1), s	5.2		12.2	17.6	3.4		2.5	4.5				
Green Ext Time (p_c), s	0.8		0.0	1.3	0.1		0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			49.4									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary

1: Heritage Road & Otay Mesa Rd

Existing + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	176	257	69	46	268	227	152	71	63	248	68	166
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	198	289	78	52	301	255	171	80	71	279	76	187
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	271	834	280	1383	2357	790	375	102	91	324	161	461
Arrive On Green	0.08	0.18	0.18	0.67	0.83	0.83	0.21	0.12	0.11	0.18	0.09	0.09
Sat Flow, veh/h	3442	4715	1583	3442	4715	1580	1774	884	785	1774	1863	2787
Grp Volume(v), veh/h	198	289	78	52	301	255	171	0	151	279	76	187
Grp Sat Flow(s),veh/h/ln	1721	1572	1583	1721	1572	1580	1774	0	1669	1774	1863	1393
Q Serve(g_s), s	7.3	7.0	5.5	0.7	1.5	2.4	10.9	0.0	11.4	19.8	5.1	4.9
Cycle Q Clear(g_c), s	7.3	7.0	5.5	0.7	1.5	2.4	10.9	0.0	11.4	19.8	5.1	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	271	834	280	1383	2357	790	375	0	193	324	161	461
V/C Ratio(X)	0.73	0.35	0.28	0.04	0.13	0.32	0.46	0.00	0.78	0.86	0.47	0.41
Avail Cap(c_a), veh/h	450	834	280	1383	2357	790	375	0	308	546	530	1013
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	46.9	46.3	12.9	5.5	1.4	44.7	0.0	56.0	51.5	56.5	23.3
Incr Delay (d2), s/veh	3.7	1.1	2.5	0.0	0.1	1.1	0.9	0.0	6.8	7.2	2.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.1	2.6	0.3	0.7	1.1	5.5	0.0	5.7	10.3	2.7	1.9
LnGrp Delay(d),s/veh	62.3	48.0	48.8	12.9	5.6	2.5	45.6	0.0	62.9	58.7	58.7	23.9
LnGrp LOS	E	D	D	B	A	A	D		E	E	E	C
Approach Vol, veh/h		565			608			322			542	
Approach Delay, s/veh		53.1			4.9			53.7			46.7	
Approach LOS		D			A			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	56.2	27.0	31.5	15.3	14.3	69.0	27.7	19.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	26.5	22.5	26.5	36.5	16.5	32.5	39.5	23.5				
Max Q Clear Time (g_c+I1), s	2.7	9.0	12.9	7.1	9.3	4.4	21.8	13.4				
Green Ext Time (p_c), s	2.9	1.4	1.6	1.2	0.5	3.0	1.4	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			37.1									
HCM 2010 LOS			D									
Notes												
User approved changes to right turn type.												

HCM 2010 Signalized Intersection Summary

2: Cactus Rd & Otay Mesa Rd

Existing + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		   			   							
Volume (veh/h)	6	494	37	87	505	1	31	2	106	5	1	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1736	1900	1863	1727	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	588	44	104	601	1	37	2	126	6	1	2
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	37	2727	202	140	3226	5	107	227	193	33	149	127
Arrive On Green	0.04	1.00	1.00	0.08	0.66	0.66	0.06	0.12	0.12	0.02	0.08	0.08
Sat Flow, veh/h	1774	4502	334	1774	4862	8	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	7	411	221	104	389	213	37	2	126	6	1	2
Grp Sat Flow(s),veh/h/ln	1774	1580	1677	1774	1572	1726	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	0.0	0.0	7.5	6.2	6.2	2.6	0.1	9.9	0.4	0.1	0.2
Cycle Q Clear(g_c), s	0.5	0.0	0.0	7.5	6.2	6.2	2.6	0.1	9.9	0.4	0.1	0.2
Prop In Lane	1.00		0.20	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	37	1914	1016	140	2086	1145	107	227	193	33	149	127
V/C Ratio(X)	0.19	0.21	0.22	0.74	0.19	0.19	0.34	0.01	0.65	0.18	0.01	0.02
Avail Cap(c_a), veh/h	143	1914	1016	161	2086	1145	143	695	591	143	695	591
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	0.0	0.0	58.6	8.4	8.4	58.6	50.2	54.4	62.8	55.0	55.1
Incr Delay (d2), s/veh	2.1	0.2	0.4	14.4	0.2	0.4	1.9	0.0	3.7	2.5	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	0.3	0.1	0.1	4.2	2.7	3.0	1.3	0.1	4.5	0.2	0.0	0.1
LnGrp Delay(d),s/veh	63.3	0.2	0.4	73.0	8.6	8.7	60.5	50.2	58.1	65.3	55.0	55.1
LnGrp LOS	E	A	A	E	A	A	E	D	E	E	E	E
Approach Vol, veh/h	639			706			165			9		
Approach Delay, s/veh	1.0			18.1			58.6			61.9		
Approach LOS	A			B			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	85.4	13.1	16.0	7.9	93.0	7.6	21.5				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	6.1	* 5.7	7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	11.5	36.0	* 10	48.0	* 10	37.3	* 10	48.0				
Max Q Clear Time (g_c+1/5), s	19.5	2.0	4.6	2.2	2.5	8.2	2.4	11.9				
Green Ext Time (p_c), s	0.0	6.4	0.0	0.6	0.0	6.3	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	15.6											
HCM 2010 LOS	B											
Notes												

HCM 2010 Signalized Intersection Summary

3: Britannia Blvd & Otay Mesa Rd

Existing + Project PM

4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑↑	↑
Volume (veh/h)	373	232	392	394	199	318
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1863	1863	1727	1863	1863
Adj Flow Rate, veh/h	444	276	467	469	237	379
Adj No. of Lanes	3	1	1	3	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	10	2	2	10	2	2
Cap, veh/h	1497	931	427	2906	932	429
Arrive On Green	0.32	0.32	0.24	0.62	0.27	0.27
Sat Flow, veh/h	4871	1583	1774	4871	3442	1583
Grp Volume(v), veh/h	444	276	467	469	237	379
Grp Sat Flow(s),veh/h/ln	1572	1583	1774	1572	1721	1583
Q Serve(g_s), s	8.2	10.0	27.7	4.9	6.2	26.4
Cycle Q Clear(g_c), s	8.2	10.0	27.7	4.9	6.2	26.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1497	931	427	2906	932	429
V/C Ratio(X)	0.30	0.30	1.09	0.16	0.25	0.88
Avail Cap(c_a), veh/h	1497	931	427	2906	1182	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.82	0.82	0.99	0.99
Uniform Delay (d), s/veh	29.6	11.8	43.7	9.4	32.8	40.2
Incr Delay (d2), s/veh	0.5	0.8	67.7	0.1	0.1	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	7.4	21.5	2.1	3.0	13.1
LnGrp Delay(d),s/veh	30.1	12.6	111.3	9.5	33.0	53.5
LnGrp LOS	C	B	F	A	C	D
Approach Vol, veh/h	720			936	616	
Approach Delay, s/veh	23.4			60.3	45.6	
Approach LOS	C			E	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	34.4	43.2				77.6		37.4
Change Period (Y+Rc), s	7.2	* 7.2				7.2		6.8
Max Green Setting (Gmax), s	20.3	* 36				62.0		39.0
Max Q Clear Time (g_c+29.7), s	29.7	12.0				6.9		28.4
Green Ext Time (p_c), s	0.0	3.6				5.0		2.2

Intersection Summary

HCM 2010 Ctrl Delay	44.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

Existing + Project PM

4/7/2016

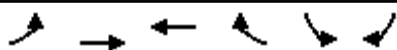
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	↑	↱	↰	↑	↱
Volume (veh/h)	38	505	131	796	548	67	74	80	791	56	143	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1741	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	42	555	144	875	602	74	81	88	869	62	157	34
Adj No. of Lanes	1	3	1	1	3	0	1	1	0	2	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	10	2	2	10	10	2	2	2	2	2	2
Cap, veh/h	529	740	249	565	760	92	124	45	442	241	450	97
Arrive On Green	0.30	0.16	0.16	0.32	0.18	0.17	0.07	0.30	0.30	0.07	0.30	0.30
Sat Flow, veh/h	1774	4715	1583	1774	4293	522	1774	148	1458	3442	1484	321
Grp Volume(v), veh/h	42	555	144	875	443	233	81	0	957	62	0	191
Grp Sat Flow(s),veh/h/ln	1774	1572	1583	1774	1584	1646	1774	0	1605	1721	0	1805
Q Serve(g_s), s	2.6	16.9	10.3	47.8	20.0	20.4	6.7	0.0	45.5	2.6	0.0	12.4
Cycle Q Clear(g_c), s	2.6	16.9	10.3	47.8	20.0	20.4	6.7	0.0	45.5	2.6	0.0	12.4
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.91	1.00		0.18
Lane Grp Cap(c), veh/h	529	740	249	565	561	291	124	0	487	241	0	548
V/C Ratio(X)	0.08	0.75	0.58	1.55	0.79	0.80	0.65	0.00	1.97	0.26	0.00	0.35
Avail Cap(c_a), veh/h	529	1305	438	565	1284	667	181	0	487	241	0	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.00	0.92	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.8	60.4	38.9	51.1	59.0	59.3	68.0	0.0	52.5	66.1	0.0	40.7
Incr Delay (d2), s/veh	0.1	6.3	8.8	254.9	9.7	18.4	5.2	0.0	441.1	0.6	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.8	5.1	63.4	9.5	10.8	3.5	0.0	79.8	1.2	0.0	6.2
LnGrp Delay(d),s/veh	37.9	66.8	47.7	306.1	68.7	77.7	73.2	0.0	493.6	66.6	0.0	41.1
LnGrp LOS	D	E	D	F	E	E	E		F	E		D
Approach Vol, veh/h		741			1551			1038			253	
Approach Delay, s/veh		61.4			204.0			460.8			47.4	
Approach LOS		E			F			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.0	30.2	15.7	51.1	49.9	33.3	15.7	51.1				
Change Period (Y+Rc), s	5.7	* 7.2	* 5.7	6.1	5.7	* 7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	29.3	* 41	* 15	40.2	10.0	* 60	* 10	45.0				
Max Q Clear Time (g_c+19.8)	18.9	18.9	8.7	14.4	4.6	22.4	4.6	47.5				
Green Ext Time (p_c), s	0.0	3.4	0.1	7.6	2.4	3.3	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			237.8									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

5: Otay Mesa Rd & Piper Ranch Rd

Existing + Project PM

4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	96	1256	1222	168	143	189
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	109	1427	1389	191	126	254
Adj No. of Lanes	1	2	3	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	10	10	2	2	2
Cap, veh/h	567	2478	1729	770	212	378
Arrive On Green	0.32	0.76	0.37	0.37	0.12	0.12
Sat Flow, veh/h	1774	3368	4871	1583	1774	3167
Grp Volume(v), veh/h	109	1427	1389	191	126	254
Grp Sat Flow(s),veh/h/ln	1774	1641	1572	1583	1774	1583
Q Serve(g_s), s	4.0	17.0	23.8	6.3	6.1	6.9
Cycle Q Clear(g_c), s	4.0	17.0	23.8	6.3	6.1	6.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	567	2478	1729	770	212	378
V/C Ratio(X)	0.19	0.58	0.80	0.25	0.60	0.67
Avail Cap(c_a), veh/h	567	2478	1729	770	710	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.83	0.83	1.00	1.00
Uniform Delay (d), s/veh	22.2	4.8	25.6	13.5	37.6	37.9
Incr Delay (d2), s/veh	0.1	0.7	3.4	0.6	2.7	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	7.8	10.8	3.5	3.1	6.0
LnGrp Delay(d),s/veh	22.3	5.4	29.0	14.2	40.2	40.0
LnGrp LOS	C	A	C	B	D	D
Approach Vol, veh/h		1536	1580		380	
Approach Delay, s/veh		6.6	27.2		40.1	
Approach LOS		A	C		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		74.2		15.8	35.0	39.2		
Change Period (Y+Rc), s		6.2		5.1	6.2	* 6.2		
Max Green Setting (Gmax), s		42.7		36.0	5.0	* 33		
Max Q Clear Time (g_c+l1), s		19.0		8.9	6.0	25.8		
Green Ext Time (p_c), s		9.3		1.8	0.0	4.5		

Intersection Summary

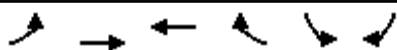
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary 6: Otay Mesa Rd & SR125 SB Off-Ramp

Existing + Project PM
4/7/2016



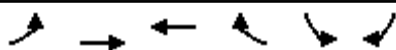
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑↑	↑↑↑↑		↖↗	↖		
Volume (veh/h)	0	1399	1244	0	733	146		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1727	1727	0	1863	1863		
Adj Flow Rate, veh/h	0	1473	1309	0	772	154		
Adj No. of Lanes	0	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	10	10	0	2	2		
Cap, veh/h	0	2420	2420	0	970	446		
Arrive On Green	0.00	0.51	0.51	0.00	0.28	0.28		
Sat Flow, veh/h	0	5026	5026	0	3442	1583		
Grp Volume(v), veh/h	0	1473	1309	0	772	154		
Grp Sat Flow(s),veh/h/ln	0	1572	1572	0	1721	1583		
Q Serve(g_s), s	0.0	13.3	11.2	0.0	12.5	4.6		
Cycle Q Clear(g_c), s	0.0	13.3	11.2	0.0	12.5	4.6		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2420	2420	0	970	446		
V/C Ratio(X)	0.00	0.61	0.54	0.00	0.80	0.35		
Avail Cap(c_a), veh/h	0	2420	2420	0	1113	512		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	0.80	0.69	0.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	10.3	9.8	0.0	19.9	17.1		
Incr Delay (d2), s/veh	0.0	0.9	0.6	0.0	3.6	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	5.9	5.0	0.0	6.4	2.1		
LnGrp Delay(d),s/veh	0.0	11.3	10.4	0.0	23.6	17.6		
LnGrp LOS		B	B		C	B		
Approach Vol, veh/h		1473	1309		926			
Approach Delay, s/veh		11.3	10.4		22.6			
Approach LOS		B	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.5		22.5		37.5		
Change Period (Y+Rc), s		7.2		6.1		7.2		
Max Green Setting (Gmax), s		27.8		18.9		27.8		
Max Q Clear Time (g_c+l1), s		15.3		14.5		13.2		
Green Ext Time (p_c), s		10.2		1.9		11.6		
Intersection Summary								
HCM 2010 Ctrl Delay		13.8						
HCM 2010 LOS		B						

HCM 2010 Signalized Intersection Summary

7: Otay Mesa Rd & SR125 NB On-Ramp

Existing + Project PM

4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LT	TH	TH	TH	LT	TH
Volume (veh/h)	310	1822	1244	812	0	0
Number	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1755	1863		
Adj Flow Rate, veh/h	326	1918	1187	937		
Adj No. of Lanes	2	2	2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	10	10	2		
Cap, veh/h	473	14448	14512	13094		
Arrive On Green	0.14	1.00	1.00	1.00		
Sat Flow, veh/h	3442	3368	3509	3167		
Grp Volume(v), veh/h	326	1918	1187	937		
Grp Sat Flow(s),veh/h/ln	1721	1641	1755	1583		
Q Serve(g_s), s	3.6	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	3.6	0.0	0.0	0.0		
Prop In Lane	1.00			1.00		
Lane Grp Cap(c), veh/h	473	14448	14512	13094		
V/C Ratio(X)	0.69	0.13	0.08	0.07		
Avail Cap(c_a), veh/h	473	14448	14512	13094		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.69	0.69	1.00	1.00		
Uniform Delay (d), s/veh	16.4	0.0	0.0	0.0		
Incr Delay (d2), s/veh	2.9	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	0.0		
LnGrp Delay(d),s/veh	19.3	0.0	0.0	0.0		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2244	2124			
Approach Delay, s/veh		2.8	0.0			
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		187.0			10.7	176.3		
Change Period (Y+Rc), s		* 7.2			* 5.7	7.2		
Max Green Setting (Gmax), s		* 37			* 5	22.1		
Max Q Clear Time (g_c+l1), s		2.0			5.6	2.0		
Green Ext Time (p_c), s		31.4			0.0	18.8		

Intersection Summary

HCM 2010 Ctrl Delay	1.5
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection												
Int Delay, s/veh	2025.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	625	1197	0	0	1591	80	0	0	0	59	0	465
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	665	1273	0	0	1693	85	0	0	0	63	0	495
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1778	0	0	1273	0	0	3449	4381	637	3701	4338	889
Stage 1	-	-	-	-	-	-	2603	2603	-	1735	1735	-
Stage 2	-	-	-	-	-	-	846	1778	-	1966	2603	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	~ 346	-	-	541	-	-	3	2	420	~ 2	2	~ 286
Stage 1	-	-	-	-	-	-	25	50	-	91	140	-
Stage 2	-	-	-	-	-	-	323	134	-	65	50	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 346	-	-	541	-	-	-	2	420	~ 2	2	~ 286
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	2	-	~ 2	2	-
Stage 1	-	-	-	-	-	-	25	50	-	91	140	-
Stage 2	-	-	-	-	-	-	-	134	-	65	50	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	227.1			0			0			\$ 14737.9		
HCM LOS							A			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	- ~ 346	-	-	-	541	-	-	17				
HCM Lane V/C Ratio	- 1.922	-	-	-	-	-	-	- 32.791				
HCM Control Delay (s)	0\$ 450.8	110.3	-	0	-	-	\$ 14737.9					
HCM Lane LOS	A	F	F	-	A	-	-	F				
HCM 95th %tile Q(veh)	- 45.4	-	-	0	-	-	-	70.5				
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 2010 Signalized Intersection Summary

9: Sanyo Ave & Otay Mesa Rd

Existing + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	540	560	156	47	969	80	304	80	44	59	59	398
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1800	1900	1863	1737	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	587	596	166	50	1031	87	228	219	47	64	64	433
Adj No. of Lanes	0	2	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.94	0.94	0.94	0.94	0.92	0.94	0.92	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	254	873	243	64	1253	106	155	483	104	70	61	329
Arrive On Green	0.23	0.23	0.23	0.04	0.79	0.79	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	273	1230	343	1774	1580	133	897	1487	319	112	187	1012
Grp Volume(v), veh/h	587	0	762	50	0	1118	228	0	266	561	0	0
Grp Sat Flow(s),veh/h/ln	273	0	1573	1774	0	1714	897	0	1806	1311	0	0
Q Serve(g_s), s	47.9	0.0	53.0	3.4	0.0	46.6	0.0	0.0	14.0	25.0	0.0	0.0
Cycle Q Clear(g_c), s	85.1	0.0	53.0	3.4	0.0	46.6	39.0	0.0	14.0	39.0	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.08	1.00		0.18	0.11		0.77
Lane Grp Cap(c), veh/h	254	0	1116	64	0	1359	155	0	587	459	0	0
V/C Ratio(X)	2.32	0.00	0.68	0.78	0.00	0.82	1.48	0.00	0.45	1.22	0.00	0.00
Avail Cap(c_a), veh/h	254	0	1116	93	0	1359	155	0	587	459	0	0
HCM Platoon Ratio	0.33	0.33	0.33	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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	70.2	0.0	33.6	57.3	0.0	7.4	48.1	0.0	32.1	43.2	0.0	0.0
Incr Delay (d2), s/veh	604.0	0.0	3.4	22.0	0.0	5.7	245.6	0.0	0.5	117.9	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	51.0	0.0	24.2	2.0	0.0	23.6	15.6	0.0	7.0	30.2	0.0	0.0
LnGrp Delay(d),s/veh	674.3	0.0	37.0	79.3	0.0	13.1	293.6	0.0	32.6	161.0	0.0	0.0
LnGrp LOS	F		D	E		B	F		C	F		
Approach Vol, veh/h	1349			1168			494			561		
Approach Delay, s/veh	314.3			15.9			153.1			161.0		
Approach LOS	F			B			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		6		8					
Phs Duration (G+Y+Rc), s	10.0	92.5	45.1		102.5		45.1					
Change Period (Y+Rc), s	* 5.7	7.2	* 6.1		7.2		6.1					
Max Green Setting (Gmax), s	* 6.3	57.8	* 39		69.8		36.9					
Max Q Clear Time (g_c+l1), s	5.4	87.1	41.0		48.6		41.0					
Green Ext Time (p_c), s	0.0	0.0	0.0		18.0		0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			170.4									
HCM 2010 LOS			F									
Notes												
User approved volume balancing among the lanes for turning movement.												

Intersection

Int Delay, s/veh 1055.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	460	203	757	140	103	339
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	92	92	92	92	92	92
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	500	221	823	152	112	368

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	975	0	2120
Stage 1	-	-	899
Stage 2	-	-	1221
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	707	-	~ 55
Stage 1	-	-	397
Stage 2	-	-	279
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	707	-	~ 11
Mov Cap-2 Maneuver	-	-	~ 11
Stage 1	-	-	397
Stage 2	-	-	~ 54

Approach	EB	WB	SB
HCM Control Delay, s	14.9	0	\$ 4756.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	707	-	-	-	43
HCM Lane V/C Ratio	0.707	-	-	-	11.173
HCM Control Delay (s)	21.4	0	-	-	\$ 4756.7
HCM Lane LOS	C	A	-	-	F
HCM 95th %tile Q(veh)	5.9	-	-	-	57.8

Notes

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

HCM 2010 Signalized Intersection Summary

11: Enrico Fermi Rd & Otay Mesa Rd

Existing + Project PM
4/7/2016

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Volume (veh/h)	111	192	30	610	290	26		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1811	1900	1863	1727	1863	1863		
Adj Flow Rate, veh/h	141	243	38	772	367	33		
Adj No. of Lanes	1	0	1	1	1	1		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79		
Percent Heavy Veh, %	10	10	2	10	2	2		
Cap, veh/h	252	434	57	930	472	407		
Arrive On Green	0.42	0.41	0.03	0.54	0.27	0.26		
Sat Flow, veh/h	598	1031	1774	1727	1774	1583		
Grp Volume(v), veh/h	0	384	38	772	367	33		
Grp Sat Flow(s),veh/h/ln	0	1629	1774	1727	1774	1583		
Q Serve(g_s), s	0.0	10.1	1.2	21.0	10.8	0.9		
Cycle Q Clear(g_c), s	0.0	10.1	1.2	21.0	10.8	0.9		
Prop In Lane		0.63	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	0	686	57	930	472	407		
V/C Ratio(X)	0.00	0.56	0.67	0.83	0.78	0.08		
Avail Cap(c_a), veh/h	0	1765	215	2229	1152	1015		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	12.5	26.9	10.8	19.1	15.8		
Incr Delay (d2), s/veh	0.0	0.7	13.0	2.0	2.8	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	4.6	0.8	10.4	5.6	0.4		
LnGrp Delay(d),s/veh	0.0	13.2	39.9	12.8	21.9	15.9		
LnGrp LOS		B	D	B	C	B		
Approach Vol, veh/h	384			810	400			
Approach Delay, s/veh	13.2			14.1	21.4			
Approach LOS	B			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.6	29.2				35.7		20.4
Change Period (Y+Rc), s	4.8	6.0				6.0		6.0
Max Green Setting (Gmax), s	6.8	60.4				72.0		36.0
Max Q Clear Time (g_c+I1), s	3.2	12.1				23.0		12.8
Green Ext Time (p_c), s	0.0	6.8				6.8		1.7
Intersection Summary								
HCM 2010 Ctrl Delay			15.7					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

12: Britannia Blvd & SR-905 WB Ramps

Existing + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	62	4	110	519	407	0	0	299	325
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1810	1804	1810	1810	1727	0	0	1769	1900
Adj Flow Rate, veh/h				79	0	144	665	522	0	0	383	417
Adj No. of Lanes				1	0	2	2	3	0	0	3	0
Peak Hour Factor				0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %				5	10	5	5	10	0	0	10	10
Cap, veh/h				124	0	221	717	3842	0	0	1765	824
Arrive On Green				0.07	0.00	0.07	0.21	0.81	0.00	0.00	0.55	0.55
Sat Flow, veh/h				1723	0	3076	3343	4871	0	0	3379	1504
Grp Volume(v), veh/h				79	0	144	665	522	0	0	383	417
Grp Sat Flow(s),veh/h/ln				1723	0	1538	1672	1572	0	0	1610	1504
Q Serve(g_s), s				4.0	0.0	4.1	17.6	2.1	0.0	0.0	5.5	15.6
Cycle Q Clear(g_c), s				4.0	0.0	4.1	17.6	2.1	0.0	0.0	5.5	15.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				124	0	221	717	3842	0	0	1765	824
V/C Ratio(X)				0.64	0.00	0.65	0.93	0.14	0.00	0.00	0.22	0.51
Avail Cap(c_a), veh/h				247	0	441	717	3842	0	0	1765	824
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.69	0.69	0.00	0.00	0.09	0.09
Uniform Delay (d), s/veh				40.6	0.0	40.7	34.7	1.7	0.0	0.0	10.4	12.7
Incr Delay (d2), s/veh				5.3	0.0	3.2	13.8	0.1	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	1.8	9.5	0.9	0.0	0.0	2.5	6.4
LnGrp Delay(d),s/veh				45.9	0.0	43.9	48.5	1.8	0.0	0.0	10.5	12.9
LnGrp LOS				D		D	D	A			B	B
Approach Vol, veh/h				223			1187			800		
Approach Delay, s/veh				44.6			27.9			11.7		
Approach LOS				D			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.4			24.0	54.4		11.6				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		66.9			* 19	42.9		12.9				
Max Q Clear Time (g_c+I1), s		4.1			19.6	17.6		6.1				
Green Ext Time (p_c), s		13.4			0.0	10.5		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			23.8									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

13: Britannia Blvd & SR-905 EB Ramps

Existing + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					 		  	  	
Volume (veh/h)	219	1	220	0	0	0	0	707	132	140	221	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1809	1810				0	1740	1900	1810	1727	0
Adj Flow Rate, veh/h	284	1	286				0	918	171	182	287	0
Adj No. of Lanes	0	1	2				0	2	0	2	3	0
Peak Hour Factor	0.77	0.77	0.77				0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	5	10	5				0	10	10	5	10	0
Cap, veh/h	332	1	523				0	1507	281	265	3203	0
Arrive On Green	0.19	0.19	0.19				0.00	0.54	0.54	0.08	0.68	0.00
Sat Flow, veh/h	1717	6	2707				0	2870	518	3343	4871	0
Grp Volume(v), veh/h	285	0	286				0	545	544	182	287	0
Grp Sat Flow(s),veh/h/ln	1723	0	1354				0	1653	1648	1672	1572	0
Q Serve(g_s), s	12.8	0.0	7.6				0.0	18.1	18.1	4.2	1.7	0.0
Cycle Q Clear(g_c), s	12.8	0.0	7.6				0.0	18.1	18.1	4.2	1.7	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	333	0	523				0	895	892	265	3203	0
V/C Ratio(X)	0.86	0.00	0.55				0.00	0.61	0.61	0.69	0.09	0.00
Avail Cap(c_a), veh/h	364	0	572				0	895	892	430	3203	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	31.2	0.0	29.1				0.0	12.6	12.6	35.9	4.4	0.0
Incr Delay (d2), s/veh	16.8	0.0	0.9				0.0	3.1	3.1	3.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	2.9				0.0	8.9	8.9	2.1	0.7	0.0
LnGrp Delay(d),s/veh	48.0	0.0	30.0				0.0	15.6	15.7	38.9	4.4	0.0
LnGrp LOS	D		C					B	B	D	A	
Approach Vol, veh/h		571						1089			469	
Approach Delay, s/veh		39.0						15.6			17.8	
Approach LOS		D						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	1.0	48.4		20.6		59.4						
Change Period (Y+Rc), s	4.7	5.1		5.1		5.1						
Max Green Setting (Gmax), s	1.0	37.9		16.9		52.9						
Max Q Clear Time (g_c+I), s	1.0	20.1		14.8		3.7						
Green Ext Time (p_c), s	0.2	9.0		0.7		13.4						
Intersection Summary												
HCM 2010 Ctrl Delay			22.4									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary

14: La Media Rd & St Andrews Ave/SR-905 WB Ramps

Existing + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	6	72	22	20	92	73	905	295	0	1105	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1803	1900	1810	1734	1810	1810	1727	1810	0	1727	1810
Adj Flow Rate, veh/h	4	6	77	23	23	99	78	973	317	0	1188	15
Adj No. of Lanes	1	1	0	1	1	1	2	2	1	0	3	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	10	10	5	10	5	5	10	5	0	10	5
Cap, veh/h	117	8	98	146	147	131	159	2222	1040	0	2722	888
Arrive On Green	0.07	0.07	0.07	0.08	0.08	0.08	0.10	1.00	1.00	0.00	0.58	0.58
Sat Flow, veh/h	1723	112	1438	1723	1734	1538	3343	3282	1536	0	4871	1538
Grp Volume(v), veh/h	4	0	83	23	23	99	78	973	317	0	1188	15
Grp Sat Flow(s),veh/h/ln	1723	0	1550	1723	1734	1538	1672	1641	1536	0	1572	1538
Q Serve(g_s), s	0.2	0.0	4.7	1.1	1.1	5.7	2.0	0.0	0.0	0.0	12.8	0.4
Cycle Q Clear(g_c), s	0.2	0.0	4.7	1.1	1.1	5.7	2.0	0.0	0.0	0.0	12.8	0.4
Prop In Lane	1.00		0.93	1.00		1.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	117	0	105	146	147	131	159	2222	1040	0	2722	888
V/C Ratio(X)	0.03	0.00	0.79	0.16	0.16	0.76	0.49	0.44	0.30	0.00	0.44	0.02
Avail Cap(c_a), veh/h	247	0	222	247	249	220	308	2222	1040	0	2722	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.68	0.68	0.68	0.00	0.09	0.09
Uniform Delay (d), s/veh	39.2	0.0	41.3	38.2	38.2	40.3	39.7	0.0	0.0	0.0	10.8	8.1
Incr Delay (d2), s/veh	0.1	0.0	12.1	0.5	0.5	8.7	1.6	0.4	0.5	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	0.0	2.4	0.6	0.6	2.7	0.9	0.1	0.1	0.0	5.5	0.2
LnGrp Delay(d),s/veh	39.3	0.0	53.4	38.7	38.7	48.9	41.3	0.4	0.5	0.0	10.8	8.1
LnGrp LOS	D		D	D	D	D	D	A	A		B	A
Approach Vol, veh/h	87				145				1368		1203	
Approach Delay, s/veh	52.7				45.7				2.8		10.8	
Approach LOS	D				D				A		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	66.0		11.2		9.0		57.0		12.7			
Change Period (Y+Rc), s	5.1		5.1		* 4.7		5.1		5.1			
Max Green Setting (Gmax), s	48.9		12.9		* 8.3		35.9		12.9			
Max Q Clear Time (g_c+I1), s	2.0		6.7		4.0		14.8		7.7			
Green Ext Time (p_c), s	29.4		0.2		0.1		16.6		0.2			
Intersection Summary												
HCM 2010 Ctrl Delay			10.0									
HCM 2010 LOS			A									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

15: La Media Rd & SR-905 EB Ramps

Existing + Project PM

4/7/2016



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	740	155	28	533	233	231		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1810	1727	1727	1810		
Adj Flow Rate, veh/h	796	167	30	573	251	248		
Adj No. of Lanes	2	2	2	3	2	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	5	5	5	10	10	5		
Cap, veh/h	776	629	98	3086	1880	1238		
Arrive On Green	0.23	0.23	0.03	0.65	0.19	0.19		
Sat Flow, veh/h	3343	2707	3343	4871	3368	1538		
Grp Volume(v), veh/h	796	167	30	573	251	248		
Grp Sat Flow(s),veh/h/ln	1672	1354	1672	1572	1641	1538		
Q Serve(g_s), s	20.9	4.5	0.8	4.3	5.7	5.7		
Cycle Q Clear(g_c), s	20.9	4.5	0.8	4.3	5.7	5.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	776	629	98	3086	1880	1238		
V/C Ratio(X)	1.03	0.27	0.31	0.19	0.13	0.20		
Avail Cap(c_a), veh/h	776	629	308	3086	1880	1238		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.92	0.92		
Uniform Delay (d), s/veh	34.5	28.3	42.8	6.1	17.9	4.3		
Incr Delay (d2), s/veh	38.9	0.2	1.7	0.1	0.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	13.8	3.7	0.4	1.9	2.6	5.4		
LnGrp Delay(d),s/veh	73.4	28.5	44.5	6.2	18.0	4.6		
LnGrp LOS	F	C	D	A	B	A		
Approach Vol, veh/h	963			603	499			
Approach Delay, s/veh	65.6			8.2	11.4			
Approach LOS	E			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		64.0		26.0	7.3	56.7		
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		
Max Green Setting (Gmax), s		58.9		20.9	* 8.3	45.9		
Max Q Clear Time (g_c+l1), s		6.3		22.9	2.8	7.7		
Green Ext Time (p_c), s		8.1		0.0	0.0	7.9		
Intersection Summary								
HCM 2010 Ctrl Delay			35.7					
HCM 2010 LOS			D					
Notes								

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh14.9

Intersection LOS B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	109	64	35	0	8	141	163	0	48	114	7	0	96	79	95
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	10	2	10	2	10	2	10	2	10	2	10	2	10	2	10	2
Mvmt Flow	0	128	75	41	0	9	166	192	0	56	134	8	0	113	93	112
Number of Lanes	0	0	1	0	0	1	2	0	0	1	1	0	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	1
HCM Control Delay	18.6	13.2	13.6	14.7
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	52%	100%	0%	0%	55%	0%
Vol Thru, %	0%	94%	31%	0%	100%	22%	45%	0%
Vol Right, %	0%	6%	17%	0%	0%	78%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	121	208	8	94	210	175	95
LT Vol	48	0	109	8	0	0	96	0
Through Vol	0	114	64	0	94	47	79	0
RT Vol	0	7	35	0	0	163	0	95
Lane Flow Rate	56	142	245	9	111	247	206	112
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.129	0.31	0.522	0.019	0.217	0.437	0.441	0.213
Departure Headway (Hd)	8.252	7.838	7.675	7.426	7.055	6.362	7.705	6.849
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	434	458	470	482	509	566	467	523
Service Time	6.015	5.6	5.431	5.175	4.803	4.11	5.458	4.602
HCM Lane V/C Ratio	0.129	0.31	0.521	0.019	0.218	0.436	0.441	0.214
HCM Control Delay	12.2	14.1	18.6	10.3	11.8	14	16.4	11.5
HCM Lane LOS	B	B	C	B	B	B	C	B
HCM 95th-tile Q	0.4	1.3	3	0.1	0.8	2.2	2.2	0.8

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	34	53	85	27	148	12	157	34	13	4	36	7
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	3	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	150	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	10	2	2	10	2	2	10	2	2	10	2
Mvmt Flow	42	66	106	34	185	15	196	42	16	5	45	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	176	0	0	393	478	89	405	524	104
Stage 1	-	-	-	-	-	-	207	207	-	263	263	-
Stage 2	-	-	-	-	-	-	186	271	-	142	261	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.7	6.94	7.54	6.7	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.1	3.32	3.52	4.1	3.32
Pot Cap-1 Maneuver	1366	-	-	1398	-	-	541	468	951	530	440	931
Stage 1	-	-	-	-	-	-	776	710	-	719	670	-
Stage 2	-	-	-	-	-	-	798	664	-	846	671	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1365	-	-	1398	-	-	469	440	949	461	414	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	469	440	-	461	414	-
Stage 1	-	-	-	-	-	-	750	686	-	695	652	-
Stage 2	-	-	-	-	-	-	717	646	-	755	648	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.1			16.9			14.1		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	469	517	1365	-	-	1398	-	-	456			
HCM Lane V/C Ratio	0.418	0.114	0.031	-	-	0.024	-	-	0.129			
HCM Control Delay (s)	18.1	12.9	7.7	-	-	7.6	-	-	14.1			
HCM Lane LOS	C	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	2	0.4	0.1	-	-	0.1	-	-	0.4			

HCM 2010 Signalized Intersection Summary
18: Enrico Fermi Rd & Airway Rd

Existing + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	1	4	4	11	2	54	299	8	3	211	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1731	1900	1863	1752	1900
Adj Flow Rate, veh/h	47	1	5	5	14	3	71	393	11	4	278	66
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	2	10	2	2	10	2	2	10	10	2	10	10
Cap, veh/h	99	258	416	10	195	179	176	1052	29	8	646	151
Arrive On Green	0.06	0.15	0.16	0.01	0.11	0.11	0.10	0.32	0.31	0.00	0.24	0.24
Sat Flow, veh/h	1774	1727	1583	1774	1727	1583	1774	3267	91	1774	2680	626
Grp Volume(v), veh/h	47	1	5	5	14	3	71	197	207	4	171	173
Grp Sat Flow(s),veh/h/ln	1774	1727	1583	1774	1727	1583	1774	1644	1714	1774	1664	1641
Q Serve(g_s), s	0.9	0.0	0.1	0.1	0.3	0.1	1.3	3.3	3.3	0.1	3.1	3.2
Cycle Q Clear(g_c), s	0.9	0.0	0.1	0.1	0.3	0.1	1.3	3.3	3.3	0.1	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.38
Lane Grp Cap(c), veh/h	99	258	416	10	195	179	176	529	552	8	401	396
V/C Ratio(X)	0.47	0.00	0.01	0.52	0.07	0.02	0.40	0.37	0.37	0.52	0.43	0.44
Avail Cap(c_a), veh/h	751	2066	2073	325	1676	1536	936	2110	2200	360	1620	1597
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	16.2	12.8	9.7	17.6	14.1	14.0	15.0	9.3	9.3	17.6	11.4	11.4
Incr Delay (d2), s/veh	3.5	0.0	0.0	37.3	0.2	0.0	1.5	0.4	0.4	44.7	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.1	0.1	0.0	0.7	1.5	1.6	0.1	1.5	1.5
LnGrp Delay(d),s/veh	19.7	12.8	9.7	54.9	14.2	14.0	16.5	9.7	9.7	62.3	12.1	12.2
LnGrp LOS	B	B	A	D	B	B	B	A	A	E	B	B
Approach Vol, veh/h		53			22			475			348	
Approach Delay, s/veh		18.6			23.4			10.7			12.7	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.7	9.9	7.8	14.0	5.0	8.6	5.0	16.9				
Change Period (Y+Rc), s	3.5	4.6	4.8	6.0	3.5	4.6	4.8	6.0				
Max Green Setting (Gmax), s	6.5	42.4	18.2	34.0	14.5	34.4	7.2	45.0				
Max Q Clear Time (g_c+I1), s	2.1	2.1	3.3	5.2	2.9	2.3	2.1	5.3				
Green Ext Time (p_c), s	0.0	0.1	0.2	3.2	0.1	0.1	0.0	3.2				
Intersection Summary												
HCM 2010 Ctrl Delay			12.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

19: SR 905 SB Ramps & Siempre Viva Road/Siempre Viva

Existing + Project PM

4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↵		↵↵	↑↑↑	↵	↵↵		
Volume (veh/h)	703	244	355	670	0	307		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1785	1900	1863	1759	1863	1863		
Adj Flow Rate, veh/h	764	265	386	728	0	334		
Adj No. of Lanes	3	0	2	3	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	8	8	2	8	2	2		
Cap, veh/h	2021	694	473	3648	257	404		
Arrive On Green	0.57	0.56	0.14	0.76	0.00	0.14		
Sat Flow, veh/h	3734	1227	3442	4961	1774	2787		
Grp Volume(v), veh/h	694	335	386	728	0	334		
Grp Sat Flow(s),veh/h/ln	1624	1551	1721	1601	1774	1393		
Q Serve(g_s), s	10.6	10.9	9.8	3.9	0.0	10.5		
Cycle Q Clear(g_c), s	10.6	10.9	9.8	3.9	0.0	10.5		
Prop In Lane		0.79	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1837	877	473	3648	257	404		
V/C Ratio(X)	0.38	0.38	0.82	0.20	0.00	0.83		
Avail Cap(c_a), veh/h	1837	877	570	3648	315	495		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	10.8	11.0	37.7	3.1	0.0	37.4		
Incr Delay (d2), s/veh	0.6	1.3	7.7	0.1	0.0	9.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.9	4.9	5.2	1.7	0.0	4.6		
LnGrp Delay(d),s/veh	11.4	12.2	45.4	3.2	0.0	46.7		
LnGrp LOS	B	B	D	A		D		
Approach Vol, veh/h	1029			1114	334			
Approach Delay, s/veh	11.7			17.8	46.7			
Approach LOS	B			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	17.5	55.5				73.0		17.0
Change Period (Y+Rc), s	5.1	5.1				* 5.1		4.0
Max Green Setting (Gmax), s	14.9	44.9				* 66		16.0
Max Q Clear Time (g_c+1), s	11.8	12.9				5.9		12.5
Green Ext Time (p_c), s	0.6	11.1				12.4		0.6
Intersection Summary								
HCM 2010 Ctrl Delay		19.2						
HCM 2010 LOS		B						
Notes								

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	1010	800	0	0	225
Conflicting Peds, #/hr	0	0	0	5	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	8	8	2	2	2
Mvmt Flow	0	1086	860	0	0	242
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	860	0	-	0	1294	430
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	434	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	457	-	-	-	220	490
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	568	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	457	-	-	-	220	490
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	568	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		19.3	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	457	-	-	-	490	
HCM Lane V/C Ratio	-	-	-	-	0.494	
HCM Control Delay (s)	0	-	-	-	19.3	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	2.7	

HCM 2010 Signalized Intersection Summary
21: SR 905 NB Ramps & Siempre Viva Road

Existing + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	380	630	0	0	722	553	78	1	440	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1759	0	0	1785	1863	1900	1863	1863			
Adj Flow Rate, veh/h	413	685	0	0	778	606	85	1	478			
Adj No. of Lanes	2	3	0	0	2	2	0	1	2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	8	0	0	8	2	2	2	2			
Cap, veh/h	891	3525	0	0	1514	1336	305	4	485			
Arrive On Green	0.26	0.73	0.00	0.00	0.42	0.42	0.17	0.17	0.17			
Sat Flow, veh/h	3442	4961	0	0	3571	3152	1754	21	2787			
Grp Volume(v), veh/h	413	685	0	0	778	606	86	0	478			
Grp Sat Flow(s),veh/h/ln	1721	1601	0	0	1785	1576	1775	0	1393			
Q Serve(g_s), s	10.1	4.4	0.0	0.0	16.0	13.7	4.2	0.0	17.1			
Cycle Q Clear(g_c), s	10.1	4.4	0.0	0.0	16.0	13.7	4.2	0.0	17.1			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	891	3525	0	0	1514	1336	309	0	485			
V/C Ratio(X)	0.46	0.19	0.00	0.00	0.51	0.45	0.28	0.00	0.99			
Avail Cap(c_a), veh/h	905	3525	0	0	1514	1336	309	0	485			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.31	0.31	1.00	0.00	1.00			
Uniform Delay (d), s/veh	31.2	4.1	0.0	0.0	21.2	20.5	36.1	0.0	41.2			
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.0	0.4	0.4	0.5	0.0	37.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.9	1.9	0.0	0.0	8.0	6.0	2.1	0.0	9.1			
LnGrp Delay(d),s/veh	31.6	4.2	0.0	0.0	21.6	20.9	36.6	0.0	78.2			
LnGrp LOS	C	A			C	C	D		E			
Approach Vol, veh/h		1098			1384			564				
Approach Delay, s/veh		14.5			21.3			71.9				
Approach LOS		B			C			E				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.0			31.0	47.0		22.0				
Change Period (Y+Rc), s		5.1			5.1	* 5.1		5.1				
Max Green Setting (Gmax), s		72.9			26.3	* 42		16.9				
Max Q Clear Time (g_c+I1), s		6.4			12.1	18.0		19.1				
Green Ext Time (p_c), s		6.4			4.8	8.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			28.2									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
22: Paseo De Las Americas & Siempre Viva Road

Existing + Project PM

4/7/2016

	           											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	203	329	126	17	751	10	331	149	9	8	75	166
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1863	1761	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	226	366	140	19	834	11	368	166	10	9	83	184
Adj No. of Lanes	1	3	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	2	2	8	8	2	2	2	2	2	2
Cap, veh/h	266	1906	627	37	906	12	340	1391	83	24	411	360
Arrive On Green	0.15	0.40	0.40	0.02	0.27	0.26	0.19	0.41	0.41	0.01	0.23	0.23
Sat Flow, veh/h	1774	4803	1579	1774	3380	45	1774	3390	203	1774	1770	1550
Grp Volume(v), veh/h	226	366	140	19	413	432	368	86	90	9	83	184
Grp Sat Flow(s),veh/h/ln	1774	1601	1579	1774	1673	1752	1774	1770	1823	1774	1770	1550
Q Serve(g_s), s	13.0	5.2	6.2	1.1	25.2	25.2	20.1	3.2	3.2	0.5	4.0	10.9
Cycle Q Clear(g_c), s	13.0	5.2	6.2	1.1	25.2	25.2	20.1	3.2	3.2	0.5	4.0	10.9
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	266	1906	627	37	449	470	340	726	748	24	411	360
V/C Ratio(X)	0.85	0.19	0.22	0.51	0.92	0.92	1.08	0.12	0.12	0.37	0.20	0.51
Avail Cap(c_a), veh/h	306	1906	627	93	457	479	340	878	905	76	615	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	20.7	20.9	50.8	37.3	37.3	42.4	19.2	19.2	51.3	32.4	35.3
Incr Delay (d2), s/veh	18.0	0.0	0.2	10.4	23.6	22.9	72.9	0.1	0.1	9.4	0.2	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	7.7	2.3	2.7	0.7	14.5	15.1	16.7	1.6	1.6	0.3	2.0	4.8
LnGrp Delay(d),s/veh	61.5	20.7	21.1	61.3	60.9	60.2	115.3	19.2	19.3	60.7	32.7	36.4
LnGrp LOS	E	C	C	E	E	E	F	B	B	E	C	D
Approach Vol, veh/h	732					864		544		276		
Approach Delay, s/veh	33.4					60.6		84.2		36.1		
Approach LOS	C					E		F		D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	46.1	24.0	28.8	19.6	32.5	5.3	47.5				
Change Period (Y+Rc), s	4.4	4.9	4.4	4.9	4.4	4.9	4.4	4.9				
Max Green Setting (Gmax), s	5.0	40.8	19.6	36.0	17.6	28.2	4.0	51.6				
Max Q Clear Time (g_c+I), s	13.1	8.2	22.1	12.9	15.0	27.2	2.5	5.2				
Green Ext Time (p_c), s	0.0	7.1	0.0	1.8	0.2	0.5	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			54.9									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
23: Enrico Fermi Rd & Siempre Viva Road

Existing + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	236	16	6	0	17	5	133	118	0	2	45	182
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1786	1900	1863	1782	1900	1863	1759	1900	1863	1841	1900
Adj Flow Rate, veh/h	284	19	7	0	20	6	160	142	0	2	54	219
Adj No. of Lanes	2	1	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	8	8	2	8	8	2	8	8	2	8	8
Cap, veh/h	1680	608	224	148	217	62	189	893	0	4	285	255
Arrive On Green	0.49	0.49	0.49	0.00	0.08	0.08	0.11	0.27	0.00	0.00	0.16	0.16
Sat Flow, veh/h	3442	1246	459	1774	2599	744	1774	3431	0	1774	1749	1565
Grp Volume(v), veh/h	284	0	26	0	13	13	160	142	0	2	54	219
Grp Sat Flow(s),veh/h/ln	1721	0	1705	1774	1693	1651	1774	1671	0	1774	1749	1565
Q Serve(g_s), s	5.5	0.0	1.0	0.0	0.8	0.9	10.6	3.9	0.0	0.1	3.2	16.3
Cycle Q Clear(g_c), s	5.5	0.0	1.0	0.0	0.8	0.9	10.6	3.9	0.0	0.1	3.2	16.3
Prop In Lane	1.00		0.27	1.00		0.45	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1680	0	832	148	141	138	189	893	0	4	285	255
V/C Ratio(X)	0.17	0.00	0.03	0.00	0.09	0.10	0.85	0.16	0.00	0.52	0.19	0.86
Avail Cap(c_a), veh/h	1680	0	832	444	423	413	245	1103	0	59	394	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	0.00	1.00	1.00	1.00	1.00	0.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	17.1	0.0	16.0	0.0	50.8	50.8	52.7	33.7	0.0	59.8	43.4	48.9
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.3	0.3	19.0	0.1	0.0	78.7	0.3	13.7
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	2.7	0.0	0.5	0.0	0.4	0.4	6.2	1.8	0.0	0.1	1.6	8.0
LnGrp Delay(d),s/veh	17.3	0.0	16.0	0.0	51.1	51.1	71.7	33.7	0.0	138.5	43.7	62.6
LnGrp LOS	B		B		D	D	E	C		F	D	E
Approach Vol, veh/h		310			26			302			275	
Approach Delay, s/veh		17.2			51.1			53.8			59.4	
Approach LOS		B			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		63.5	17.2	24.5		14.9	4.7	37.0				
Change Period (Y+Rc), s		4.9	4.4	4.9		4.9	4.4	4.9				
Max Green Setting (Gmax), s		27.3	16.6	27.0		30.0	4.0	39.6				
Max Q Clear Time (g_c+I1), s		7.5	12.6	18.3		2.9	2.1	5.9				
Green Ext Time (p_c), s		1.3	0.2	1.2		0.1	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			43.0									
HCM 2010 LOS			D									

APPENDIX F

CUMULATIVE PROJECTS INFORMATION

TABLE 9-1
APPROVED / PENDING CUMULATIVE PROJECTS DAILY TRIP GENERATION

Project Name	Project #	Project Location	Area	Land Use	Trip Generation			
					Total ADT ^a	Traffic Applied to Year 2020		
						%	ADT	
I. SAN DIEGO COUNTY								
A. Projects Processing Site Plans								
1 California Crossings	P06-102; TPM 21046	NW Corner of Otay Mesa Rd and Harvest Rd	29.6 Acres	325,502 ksf Community Shopping Center	22,785	100%	22,785	
2 CCA San Diego Correctional Facility	MPA 09-029; P 06-074	N/O Calzada De La Fuente, E/O Alta Road	37.0 Acres	2,132 bed Correctional Facility	2,323	100%	2,323	
3 COPART County Sales Yard Time Extension (a)	P 88-020W1	SW corner of Otay Mesa Rd and Alta Rd	38.2 Acres	Auto Auction	846	100%	846	
4 FEDEX Site Plan	S08-018	NE Corner of Airway Rd and Paseo De Las Americas	20.0 Acres	FEDEX Distribution Center	1,598	100%	1,598	
5 Insurance Auto Auctions	P00-012TE	NW corner of Otay Mesa Rd and Alta Rd	38.0 Acres	Auto Auction	354	100%	354	
6 Salvage Yard / National Enterprises Recycling	P 98-001	East and west side of Alta Road, N/O Otay Mesa Rd	161.0 Acres	Auto Recycling and Salvage Yard	2,408	100%	2,408	
7 Sunroad Interim Uses - Sunroad Center 1 Harvest Ranch Nursery	P 09-009; P 09-005	N/O Otay Mesa Rd between Harvest Rd and Vann Centre Blvd	138.0 Acres	Nursery	14	100%	14	
8 Travel Plaza	P 98-024W1; TPM 20424	E/O Enrico Fermi Drive Between Otay Mesa Rd and Airway Rd	83.0 Acres	Truck Stop	5,116	100%	5,116	
9 Vulcan	S 07-038	NE quadrant of Lone Star Rd (Paseo De La Fuente) and Otay Mesa Rd	12.7 Acres	Asphalt and Concrete Plant	1,078	100%	1,078	
Subtotal "A"			557.5 Acres	Acres	36,522	100%	36,522	

CONTINUED IN THE NEXT PAGE

TABLE 9-1 (CONTINUED)
APPROVED / PENDING CUMULATIVE PROJECTS DAILY TRIP GENERATION

Project Name	Project #	Project Location	Area	Land Use	Trip Generation				
					Total ADT ^a	Traffic Applied to Year 2020			
						%	ADT		
I. SAN DIEGO COUNTY (Continued)									
B. Projects Processing Tentative Maps									
10 OMC Properties	TPM 21140	NE corner of Otay Mesa Rd and Alta Rd	49.8 Acres	30.1 acres Tech Business Park and 8.4 acres Commercial Retail	9,380	11.46%	1,075		
11 Otay Business Park	TM 5505	S/O Airway Rd, East of Alta Rd	148.5 Acres	2092.9 ksf Industrial / Business Park	33,486	11.46%	3,837		
12 Otay Crossings Commerce Park	TM 5405; SPA 04-006	SE quadrant of Otay Mesa Rd and Alta Rd	311.4 Acres	Mixed Industrial and temporary Truck Parking	21,279	11.46%	2,439		
13 Sunroad / Otay Tech Centre	SPA 07-003; TM 5538	N/O Otay Mesa Rd between Harvest Rd and Vann Centre Blvd	253.1 Acres	130 acres Tech Business Park and 27 acres commercial retail	30,566	11.46%	3,503		
14 Piper Otay Park	TM 5527	NE Corner of Otay Mesa Rd and Piper Ranch Rd	25.0 Acres	Light Industrial	1,612	11.46%	185		
15 S. County Commerce Centre	TM 5394R	SW corner of Otay Mesa Rd and Enrico Fermi Dr	80.0 Acres	Industrial	7,159	11.46%	820		
16 Saeed Revised Map	TM 5304R	N/O Airway Rd between Paseo De Las Americas and Michael Faraday Dr	20.6 Acres	Industrial	2,602	11.46%	298		
17 Hawano	10-0123176	E/O Airway Pl, W/O Alta Rd, S/O Airway Rd and N/O Via de La Amistad	64.0 Acres	892.248 ksf Industrial / Business Park	14,276	11.46%	1,636		
18 Rabago	10-0123562	NW corner of Otay Mesa Rd and Enrico Fermi Dr	55.0 Acres	54.95 acres Industrial / Business Park	10,990	11.46%	1,259		
Subtotal "B"			1,178.0 Acres		144,676	11.46%	16,579		
Total San Diego County			1,735.5 Acres		181,198		53,101		

CONTINUED IN THE NEXT PAGE

TABLE 9-1 (CONTINUED)
APPROVED / PENDING CUMULATIVE PROJECTS DAILY TRIP GENERATION

Project Name	Project #	Project Location	Area	Land Use	Trip Generation			
					Total ADT ^a	Traffic Applied to Year 2020		
						%	ADT	
II. CITY OF SAN DIEGO								
19 Interstate Industrial Centre	(TPM 98-0759) (TM 91-0394)	East side of Piper Ranch Rd, South of Otay Mesa Rd	453,000	SF	453,000 square feet of Warehousing	2,265		
20 Sunroad Otay Park		S/O Otay Mesa Rd and W/O Piper Ranch Rd	79.3	Acres	1,337,000 square feet of Small Industrial Park, 79.3 acres	20,055		
21 La Media Truck Park II		East side of La Media Rd N/O Windstock St	40.0	Acres	40.0 acres	1,200		
22 Robinhood Ridge		West side of Otay Valley Rd/Heritage Rd N/O of Otay Mesa Rd	4.6	Acres	3.8 acres of neighborhood commercial, 4.6 acres of light industrial	3,288		
23 Semi-Trailer Storage Facility (Planned)		SW corner of Otay Mesa Rd and Innovation Dr	8.02	Acres	8.02 net acres	692		
24 Airway Truck Terminal		S/O Airway Rd, E/O Britannia Blvd	19.7	Acres	19.7 acres	726		
25 California Terraces		N/O Otay Mesa Rd, Off Oceanview Hills Pkwy			Phase I = 644 MF DUs, Phase II = 1585 DUs, 2.4 acres	17,500		
26 Denney Ranch		W/O Red Coral Ln			414 MF DUs	3,312		
27 Hidden Trails		E/O Ocean View Hills Pkwy			224 MF DUs, 205 SF DUs, 4.1 acre park	4,047		
28 Southview		SW corner of Caliente Av and Airway Rd.			553 MF DUs	3,318		
29 Candlelight		SW corner of Caliente Av and Airway Rd.			435 MF DUs	3,190		
30 Handler Otay Mesa		S/O Otay Mesa Rd, W/O Corporate Centre Dr			Mixed commercial/ retail / office project			
31 Otay Corporate Centre N & Otay Corporate Centre		North and south of Otay Mesa Rd, W/O Heritage Rd.			Industrial park	3373		
32 Las California's		S/O Siempre Viva Rd between Britannia Blvd & La Media Rd			374,300 sq ft small industrial park, 305,900 sq ft large	8,061		
33 Opus		SW corner of Airway Rd and Britannia Blvd.			318,700 sq ft industrial project	2,550		
34 Just Rite	NE corner of Airway Rd and Britannia Blvd	34.44	Acres	34.44 acres industrial project	6,750			

CONTINUED IN THE NEXT PAGE

TABLE 9-1 (CONTINUED)
APPROVED / PENDING CUMULATIVE PROJECTS DAILY TRIP GENERATION

Project Name	Project #	Project Location	Area	Land Use	Trip Generation		
					Total ADT ^a	Traffic Applied to Year 2020	
						%	ADT
II. CITY OF SAN DIEGO (Continued)							
35 World Petrol III		N/O Otay Mesa Rd, E/O La Media Rd			16 fuelling stations, 5,832 SF convenience market, 2041	6,874	
36 Pardee Commercial		SW corner of Otay Mesa Rd/ Palm Av	16.0 Acres		16 acre commercial	11,200	
37 Martinez Ranch		S/O Siempre Viva Rd, W/O Britannia Blvd.	62.0 Acres		62 acre Industrial park	7,440	
38 Siempre Viva Business Park		S/O Siempre Viva Rd, E/O La Media Rd			Business park	13,600	
39 Southwestern Junior College		N/O Airway Rd, between Britannia Blvd & La Media Rd			Junior college	8,000	
40 Otay Mesa Business Park (Brownfield Tech park)		S/O Otay Mesa Rd, W/O Britannia Blvd.			Business park	16,000	
41 Ingalls Property		S/O Vista Santo Domingo			13 SF DUs, 24 townhomes, 106 Apts, 19700 SF office, 20396 SF	2,860	
42 Candlelight Villas West		West side of Caliente Ave, S/O San Ysidro High School	23.0 Acres		223 MF DUs on 23 Acres	1,784	
43 Spring Canyon Ranch		Project is on-hold and has not been included in the cumulative					
44 Esplande		NW corner of Airway Rd & La Media Rd	77.6 Acres		1,337 SF DUs on 77.6 Acres	13,370	
45 Lone Star		NE corner of La Media Rd & Lone Star Rd	70.0 Acres		Industrial use (approx 70 acres)	5,600	
46 San Ysidro High School (Expansion)		SW corner of Airway Rd & Caliente Av			High School for 814 students	1,856	
47 St. Jerome Catholic Church		NW corner of SR-905 and Ocean View Hills Parkway			Church and education center	2,640	
48 Southbay Distribution Centre		S/O Otay Mesa Rd & W/O Otay Mesa Center Rd			Distribution Warehouse	1,675	
Total City of San Diego						173,226	
Total Cumulative						354,424	

Footnote:

- a. Not all ADT is assumed to be added in Cumulative Analysis.

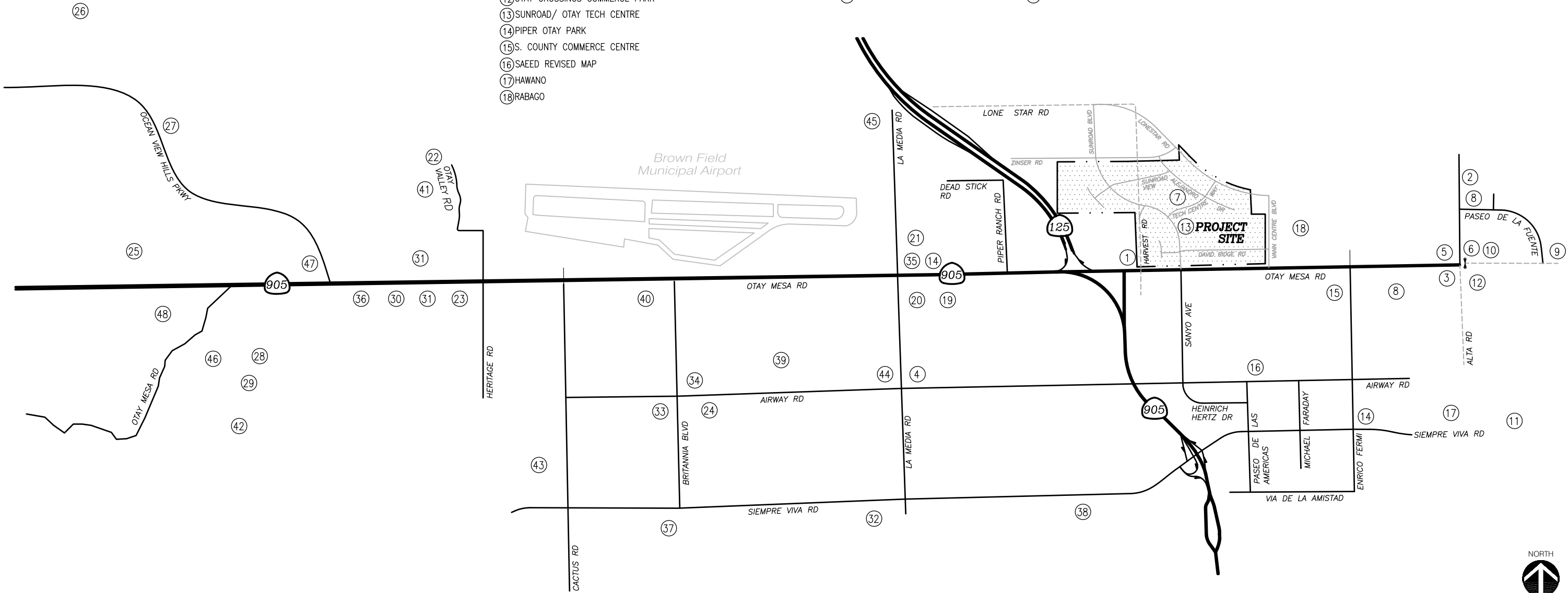
LIST OF CUMULATIVE PROJECTS

COUNTY OF SAN DIEGO

- 1 CALIFORNIA CROSSINGS
- 2 CCA SAN DIEGO CORRECTIONAL FACILITY
- 3 COPART COUNTY SALES YARD TIME EXTENSION (a)
- 4 FEDEX SITE PLAN
- 5 INSURANCE AUTO AUCTIONS
- 6 SALVAGE YARD/ NATIONAL ENTERPRISES RECYCLING
- 7 SUNROAD INTERIM USES- SUNROAD CENTER I HARVEST RANCH NURSERY
- 8 TRAVEL PLAZA
- 9 VULCAN
- 10 OMC PROPERTIES
- 11 OTAY BUSINESS PARK
- 12 OTAY CROSSINGS COMMERCE PARK
- 13 SUNROAD/ OTAY TECH CENTRE
- 14 PIPER OTAY PARK
- 15 S. COUNTY COMMERCE CENTRE
- 16 SAEED REVISED MAP
- 17 HAWANO
- 18 RABAGO

CITY OF SAN DIEGO

- 19 INTERSTATE INDUSTRIAL CENTRE
- 20 SUNROAD OTAY PARK
- 21 LA MEDIA TRUCK PARK II
- 22 ROBINHOOD RIDGE
- 23 SEMI-TRAILER FACILITY (PLANNED)
- 24 AIRWAY TRUCK TERMINAL
- 25 CALIFORNIA TERRACES
- 26 DENNERY RANCH
- 27 HIDDEN TRAILS
- 28 SOUTHVIEW
- 29 CANDLELIGHT
- 30 HANDLER OTAY MESA
- 31 OTAY CORPORATE CENTRE N & OTAY CORPORATE CENTRE
- 32 LAS CALIFORNIA'S
- 33 OPUS
- 34 JUST RITE
- 35 WORLD PETROL III
- 36 PARDEE COMMERCIAL
- 37 MARTINEZ RANCH
- 38 SIEMPRE VIVA BUSINESS PARK
- 39 SOUTHWESTERN JUNIOR COLLEGE
- 40 OTAY MESA BUSINESS PARK (BROWNFIELD TECHPARK)
- 41 INGALLS PROPERTY
- 42 CANDLELIGHT VILLAS WEST
- 43 SPRING CANYON RANCH
- 44 ESPLANDE
- 45 LONESTAR
- 46 SAN YSIDRO HIGH SCHOOL (EXPANSION)
- 47 SAINT JEROME CATHOLIC CHURCH
- 48 SOUTHBAY DISTRIBUTION CENTRE



REV. 10/26/2010
N:\1842\JANUARY 2011 UPDATE\FIGURES\LLG1842 FIGURE 9-1.DWG

Figure 9-1
Cumulative (Year 2020) Projects Location Map

APPENDIX G

CALTRANS ROADWAY IMPROVEMENT FACT SHEETS



State Route 905

I-805 to the Otay Mesa Port of Entry

FACT SHEET

GOALS

Provide for efficient transportation of goods;

Improve motorist safety and mobility for local, regional and international traffic and

Create jobs for the San Diego region and California.

CONTACT

Project Manager
Ismael Salazar at
(619) 688-6766

Ismael_Salazar@dot.ca.gov

Caltrans
4050 Taylor Street
San Diego, CA 92110
Ph: (619) 688-6670
www.dot.ca.gov/dist11



FOLLOW US ON [twitter](#)
[@SDCaltrans](#)

THE PROJECT

A portion of one of the final two phases of this five-phase project is scheduled to begin construction this summer. It calls for the construction of a pair of interchanges – the first (Phase 3) at SR-905 and SR-125 and the second (Phase 4) at SR-905 and Heritage Road. Earlier phases completed included construction of a six-lane freeway from Siempre Viva Road to Britannia Boulevard (2010) and Britannia Boulevard to just east of I-805 (2012) and interchange improvements at SR-905 and I-805 (2012).

TRAFFIC

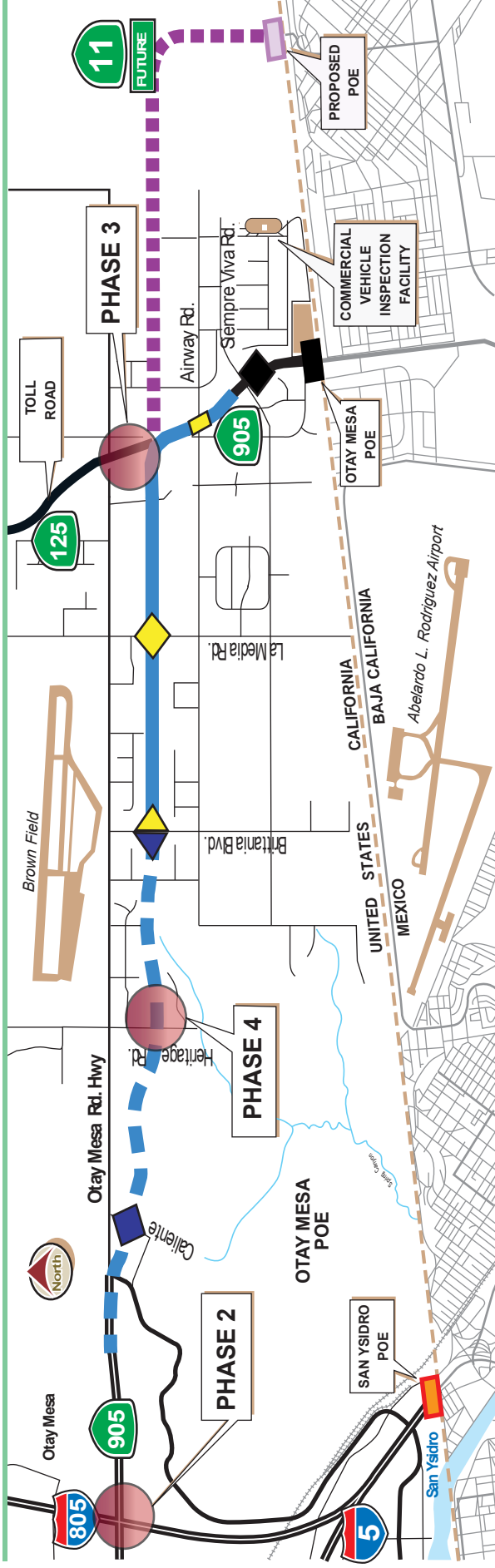
The project will help reduce traffic congestion as a result of continued growth in trade through the region and accommodate the critical flow of goods and services between the two countries. The 2014 California-Baja Border Master Plan indicated that annual import and export dollars increased significantly from \$36 billion in 2005 to \$41.8 billion in 2010. The California-Mexico POEs processed more than two million commercial trucks during that time, and that figure will likely double by 2020.

SCHEDULE/FUNDING

A portion of Phase 3 will begin construction this summer at a cost of \$26 million. About \$164.1 million is still needed to complete the rest of Phase 3 and Phase 4, and landscape the corridor. Phases 1A, 1B, 2 and a portion of 3 cost \$481.2 million, including \$291.3 million in federal money (\$90 million from the American Recovery and Reinvestment Act). The state contributed \$182.4 million, followed by \$7.5 million in local contributions (\$4.3 million of that from TransNet).



State Route 905



LEGEND - CONSTRUCTION PHASES

- | | | | |
|--|---|--|--|
| | PHASE 1A - 6 LANE FREEWAY BRITANNIA TO SIEMPRE VIVA | | PHASE 1A - FULL INTERCHANGE |
| | PHASE 1B - 6 LANE FREEWAY 805 TO BRITANNIA | | PHASE 1A - BRIDGE STRUCTURES |
| | { | | PHASE 1A INTERCHANGE WITH WB OFF RAMP AND EB ON RAMP |
| | | | PHASE 1B |
| | | | EB OFF RAMP AND WB ON RAMP |
| | PHASE 2 IMPROVEMENTS TO 805/905 INTERCHANGE | | PHASE 1B INTERCHANGE |
| | PHASE 3 CONSTRUCT 125/905 INTERCHANGE | | |
| | PHASE 4 CONSTRUCT HERITAGE RD INTERCHANGE | | |

SR 905/SR 125 NORTHBOUND CONNECTORS

FACT SHEET



Project Overview

The State Route 905 (SR 905) corridor reduces congestion and provides for more efficient transportation of people, goods, and services within and through the Otay Mesa region of San Diego. The corridor is being built in multiple phases with Phase 1A and 1B — the main lanes of the freeway — already constructed and opened to traffic. Phase 2 improvements to the I-805/SR 905 interchange have also been completed. Phase 3, the SR 125/SR 905 interchange, will be constructed in two phases. Phase 3A will construct the northbound connectors and Phase 3B will construct the southbound connectors. Funding from the Trade Corridor Improvement fund (TCIF) has been allocated for the construction of Phase 3A. The interchange is one of the last critical links in the overall border road network, providing direct access to SR 125 from SR 905. Currently, trucks must use circuitous and congested local roads to access SR 125. This project will provide a seamless highway system for commercial vehicles entering/ departing the Otay Mesa commercial Port of Entry (POE) to destinations across

San Diego County, California, and the nation. This project will link to the future Otay Mesa East commercial POE when it eventually connects to the proposed SR 11 toll road, the capstone for the border network for the region's future.

SR 905 is the only east-west interregional route that links the Otay Mesa POE with the San Diego metropolitan region. It begins less than one mile west of Interstate 5 and continues east to the U.S.- Mexico border at the Otay Mesa POE. SR 905 is part of the National Highway System and the California Freeway and Expressway System. It is also designated as one of nine gateways of major significance for goods movement by the 1998 Interregional Transportation Strategic Plan (ITSP).

Of the trucks that cross the border at Otay Mesa into the U.S., 84 percent have destinations outside San Diego County and 25 percent travel to other states. Also, 76 percent of the exports transported through the Otay Mesa

(Continued on reverse)



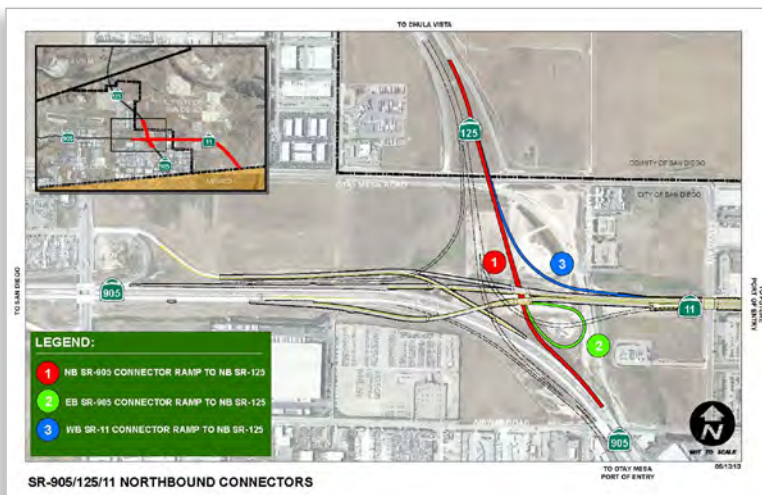
401 B Street, Suite 800
San Diego, CA 92101
(619) 699-1900
Fax (619) 699-1905
sandag.org

SANDAGregion

@SANDAG

SANDAGregion





Construction of the freeway-to-freeway connectors will provide direct access from the border highway system, thereby eliminating the need to travel on local roads.

POE are from outside San Diego County.

Growth Along the Border

Population, border traffic, and border trade have shown a steady growth rate in the San Diego-Tijuana region. State and local transportation and land use agencies in California and Baja California, Mexico have consistently identified the need for additional access and transportation facilities to connect the regions of San Diego and Tijuana. The existing San Diego-Tijuana border crossings are located in San Ysidro and Otay Mesa. The San Ysidro POE provides a non-commercial crossing to over 30 million people annually using various modes of travel, while the Otay Mesa POE provides both commercial and non-commercial crossing to approximately an additional 1.5 million commercial trucks and 6 million non-commercial vehicles annually. All POEs frequently experience long delays.

Trade under the North American Free Trade Agreement (NAFTA) has grown to the point of making the Otay Mesa POE the busiest California-Mexico commercial border crossing. NAFTA took effect in January 1994 and lifted tariffs on the majority of goods produced by the United States, Canada, and Mexico. It also called for the gradual elimination, over 15 years, of most remaining barriers to crossborder investment and to the movement of goods and services among the three countries. Also in 1994, the federal government closed the San Ysidro POE to commercial vehicles, rerouting them to the Otay Mesa POE located approximately six miles to the east. This border region

accommodates approximately \$35 billion (FY 2013) in NAFTA trade which is carried by 1.5 million northbound and southbound trucks.

The northbound connector project, in conjunction with the proposed SR 11/ Otay Mesa East POE project, will lead to opportunities for increased throughput and crossborder trade. Investment potential in the San Diego-Baja California region already has been curbed due to current transportation conditions. Improvements in velocity and reliability coupled with congestion relief are anticipated to result in increased crossborder economic opportunities, including overall growth in economic output and jobs. According to Caltrans' traffic projections, northbound truck crossings at the Otay Mesa POE are estimated to reach 899,000 commercial vehicles annually in 2030. An additional 598,000 trucks are projected to cross northbound at the proposed Otay Mesa East POE in 2030. The SR 905 northbound connectors will serve both the Otay Mesa and Otay Mesa East POEs.

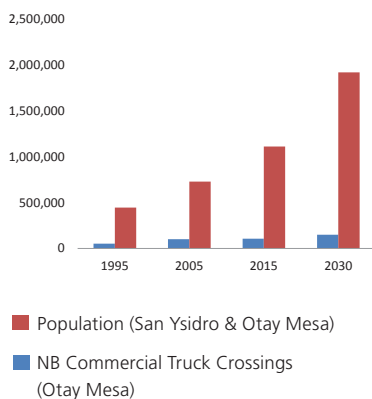
Project Status

Construction of the freeway-to-freeway northbound connectors with SR 125 is expected to begin in summer 2015.

Project Funding

Senate Bill 1266 exempts from the 1:1 funding match requirement those border access improvements that enhance goods movement between California and Mexico and maximize the state's ability to access federal Coordinated Border Infrastructure (CBI) Program funds. SR 905 meets both legislative requirements. This project will leverage \$3.4 million of SAFETEA-LU CBI funds to improve border access. These funds will be used for the right-of-way phase and supplement the construction phase. *TransNet*, the local transportation sales tax administered by SANDAG, was used to fund the design of the project. The CBI funds for the right-of-way phase have already been programmed.

Trade and Population Growth in the Border Region



Source: SANDAG

Project Funding:

Federal: SAFTEA-LU CBI Program	\$3.4 Million
Local: TransNet	\$2.7 Million
State: TCIF (Request)*	\$20 Million
Total	\$26.2 Million

* Enabled by cost savings and subsequent de-allocation from other TCIF projects in the region.



SR 11/Otay Mesa East Port of Entry

April 2015

The Challenge

Border congestion in the San Diego-Baja California region costs the United States and Mexico a combined \$7.2 billion in annual economic output and more than 62,000 jobs each year. Bottlenecks at the Otay Mesa Port of Entry (POE), the region's main commercial border crossing, and the San Ysidro POE, the busiest land border crossing in the Western Hemisphere, constrict the flow of people and freight, choking off economic opportunities.

Recent improvements to the San Ysidro POE have reduced wait times for individuals and passenger vehicles, resulting in an increase in the demand to cross the border. It is expected that wait times will gradually creep back up, driving demand to the new POE. Since the San Ysidro POE does not process commercial traffic, a pressing need remains for a new commercial POE to accommodate the billions of dollars in trade carried by trucks.



Northbound at San Ysidro POE



Southbound trucks near Otay Mesa POE

The Opportunity

The State Route 11/Otay Mesa East POE Project will provide fast, predictable, and secure crossings via tolled approach roads that connect directly to a new state-of-the-art POE that serves both personal and commercial vehicles. The goal is to operate the new POE with an average 20-minute border wait time. Efficiencies will be achieved through a host of innovations and technologies, including:

- An integrated approach to managing traffic congestion at the major ports of entry
- A new border wait time detection system that feeds advanced traveler alert capabilities
- Using electronic variable toll rates as a demand management strategy
- Partnership approaches to financing value-added amenities



Making it Happen: Binational Project Financing



Costs: The total cost of the project for facilities on both sides of the border is estimated to be around \$800 million. Estimates include approach roads and a POE with 20 inspection lanes—10 for passenger vehicles and 10 for commercial trucks.

Funding: Tolls collected on the approach roads leading up to the POE will serve as the backbone for financing the project. Other advantageous funding mechanisms also are being explored, including federal credit assistance through the Transportation Infrastructure Finance and Innovation Act (TIFIA). In addition, opportunities exist to partner with the private sector to provide value-added amenities to enhance operational efficiency.

The Path Forward

A binational, multi-agency group is working aggressively to expedite the construction of an innovative port of entry with the objective of dramatically reducing border wait times.



Segment 1

Construction began on the first segment of SR 11 and is expected to be completed in fall 2015

T&R Study

A binational, investment-grade traffic and revenue study completed

Binational Partnerships

MOU signed between California and Mexico to form a binational oversight committee to expedite project delivery

Border Wait Time Pilot

Bluetooth border wait time monitoring pilot gets underway

Binational Financing

U.S./Mexico financial feasibility & strategy

Completion of Segments 2 & 3

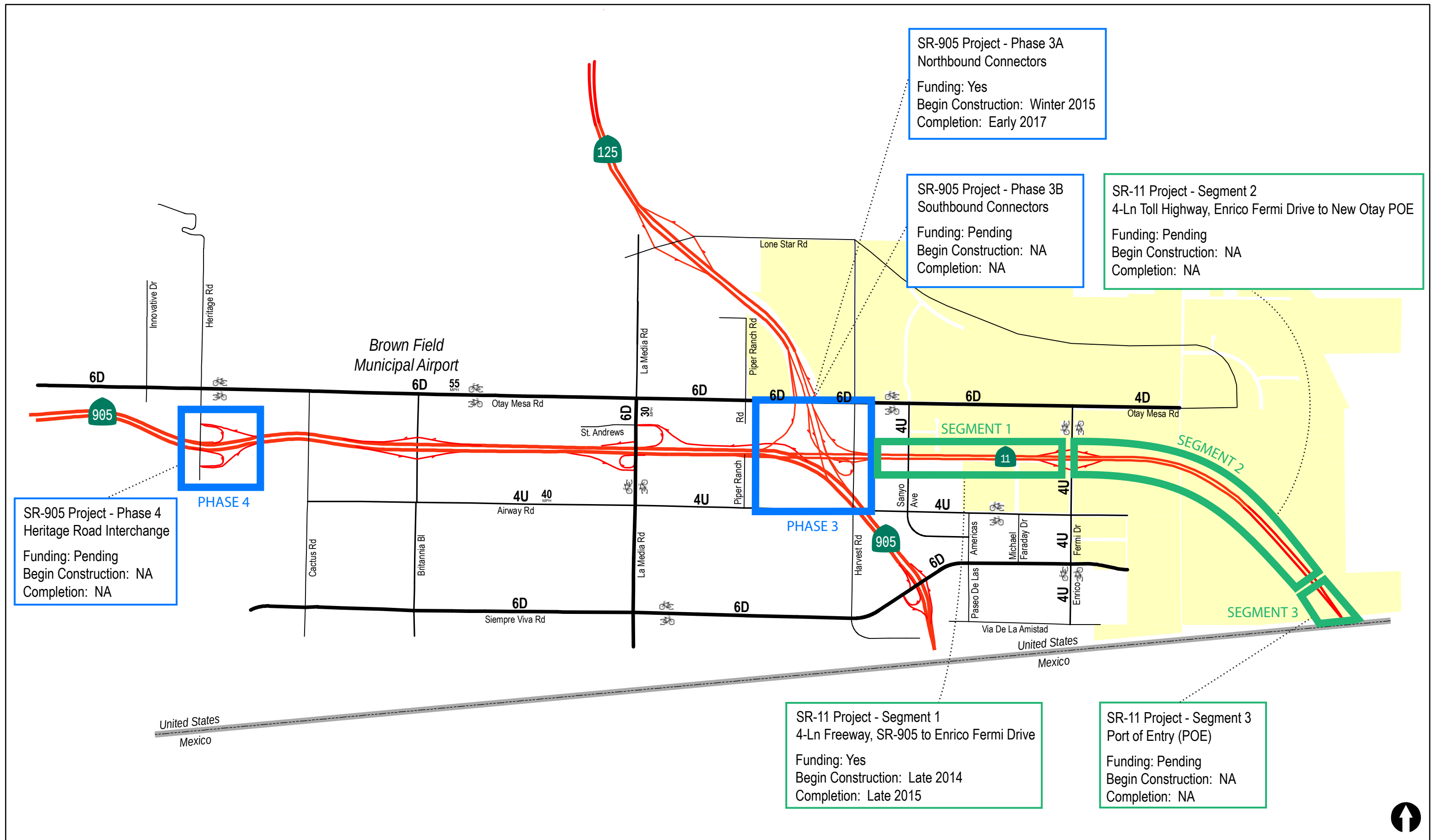
Binational POE opens to traffic in 2017/2018

2014

2015

2016

2017



APPENDIX H

YEAR 2020 + PROJECT SYNCHRO INTERSECTION ANALYSIS WORKSHEETS

HCM 2010 Signalized Intersection Summary

1: Heritage Road & Otay Mesa Rd

Year 2020 + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	180	1000	60	10	410	120	20	40	20	390	60	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.92	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	202	1124	67	11	461	135	22	45	22	438	67	101
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	271	1578	530	658	2107	706	479	91	45	481	151	446
Arrive On Green	0.08	0.33	0.33	0.06	0.15	0.15	0.27	0.08	0.08	0.27	0.08	0.08
Sat Flow, veh/h	3442	4715	1583	3442	4715	1580	1774	1145	560	1774	1863	2787
Grp Volume(v), veh/h	202	1124	67	11	461	135	22	0	67	438	67	101
Grp Sat Flow(s),veh/h/ln	1721	1572	1583	1721	1572	1580	1774	0	1705	1774	1863	1393
Q Serve(g_s), s	7.5	27.1	3.8	0.4	11.2	3.7	1.2	0.0	4.9	31.1	4.5	2.3
Cycle Q Clear(g_c), s	7.5	27.1	3.8	0.4	11.2	3.7	1.2	0.0	4.9	31.1	4.5	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	271	1578	530	658	2107	706	479	0	136	481	151	446
V/C Ratio(X)	0.74	0.71	0.13	0.02	0.22	0.19	0.05	0.00	0.49	0.91	0.44	0.23
Avail Cap(c_a), veh/h	371	1578	530	658	2107	706	479	0	223	669	863	1510
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	37.8	30.0	49.4	35.4	5.1	35.1	0.0	57.4	45.8	56.9	21.1
Incr Delay (d2), s/veh	5.3	2.8	0.5	0.0	0.2	0.6	0.0	0.0	2.7	13.1	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	12.2	1.7	0.2	4.9	1.8	0.6	0.0	2.4	17.0	2.4	0.9
LnGrp Delay(d),s/veh	63.9	40.6	30.5	49.5	35.7	5.7	35.1	0.0	60.1	59.0	59.0	21.3
LnGrp LOS	E	D	C	D	D	A	D		E	E	E	C
Approach Vol, veh/h	1393			607			89			606		
Approach Delay, s/veh	43.5			29.3			53.9			52.7		
Approach LOS	D			C			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.8	47.5	39.1	14.6	14.3	62.1	39.3	14.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	43.0	5.3	59.7	13.5	33.5	48.5	16.5				
Max Q Clear Time (g_c+I1), s	2.4	29.1	3.2	6.5	9.5	13.2	33.1	6.9				
Green Ext Time (p_c), s	0.0	5.3	0.5	0.8	0.3	2.8	1.7	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	42.7											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary

2: Cactus Rd & Otay Mesa Rd

Year 2020 + Project AM

4/7/2016

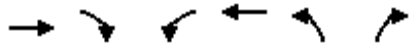
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	1260	60	60	510	40	20	10	100	20	10	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1733	1900	1863	1737	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	60	1500	71	71	607	48	24	12	119	24	12	48
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	128	2793	132	133	2718	213	86	184	156	86	184	156
Arrive On Green	0.07	0.60	0.60	0.07	0.61	0.60	0.05	0.10	0.10	0.05	0.10	0.10
Sat Flow, veh/h	1774	4629	219	1774	4483	352	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	60	1022	549	71	427	228	24	12	119	24	12	48
Grp Sat Flow(s),veh/h/ln	1774	1577	1694	1774	1580	1674	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.2	24.7	24.7	5.0	8.0	8.1	1.7	0.8	9.5	1.7	0.8	3.7
Cycle Q Clear(g_c), s	4.2	24.7	24.7	5.0	8.0	8.1	1.7	0.8	9.5	1.7	0.8	3.7
Prop In Lane	1.00		0.13	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	1903	1022	133	1916	1015	86	184	156	86	184	156
V/C Ratio(X)	0.47	0.54	0.54	0.53	0.22	0.23	0.28	0.07	0.76	0.28	0.07	0.31
Avail Cap(c_a), veh/h	147	1903	1022	145	1916	1015	143	695	591	143	695	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	15.1	15.2	58.0	11.7	11.7	59.7	53.1	57.1	59.7	53.1	54.4
Incr Delay (d2), s/veh	2.1	0.9	1.6	3.3	0.3	0.5	1.7	0.1	7.4	1.7	0.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	10.9	11.9	2.6	3.6	3.9	0.9	0.4	4.5	0.9	0.4	1.6
LnGrp Delay(d),s/veh	60.1	16.0	16.8	61.2	11.9	12.2	61.4	53.3	64.5	61.4	53.3	55.5
LnGrp LOS	E	B	B	E	B	B	E	D	E	E	D	E
Approach Vol, veh/h	1631			726			155			84		
Approach Delay, s/veh	17.9			16.8			63.1			56.9		
Approach LOS	B			B			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.9	85.1	11.5	18.4	14.6	85.5	11.5	18.4				
Change Period (Y+Rc), s	* 5.7	7.2	* 5.7	6.1	* 5.7	7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	* 10	37.2	* 10	48.0	* 10	37.0	* 10	48.0				
Max Q Clear Time (g_c+l1), s	7.0	26.7	3.7	5.7	6.2	10.1	3.7	11.5				
Green Ext Time (p_c), s	0.0	7.4	0.0	0.8	0.0	13.7	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			21.6									
HCM 2010 LOS			C									
Notes												

HCM 2010 Signalized Intersection Summary

3: Britannia Blvd & Ota Mesa Rd

Year 2020 + Project AM

4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑↑	↑
Volume (veh/h)	830	790	50	420	210	200
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1863	1863	1727	1863	1863
Adj Flow Rate, veh/h	988	940	60	500	250	238
Adj No. of Lanes	3	1	1	3	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	10	2	2	10	2	2
Cap, veh/h	1644	851	488	3242	649	299
Arrive On Green	0.35	0.35	0.28	0.69	0.19	0.19
Sat Flow, veh/h	4871	1583	1774	4871	3442	1583
Grp Volume(v), veh/h	988	940	60	500	250	238
Grp Sat Flow(s), veh/h/ln	1572	1583	1774	1572	1721	1583
Q Serve(g_s), s	18.1	36.6	2.7	3.9	6.7	15.1
Cycle Q Clear(g_c), s	18.1	36.6	2.7	3.9	6.7	15.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1644	851	488	3242	649	299
V/C Ratio(X)	0.60	1.11	0.12	0.15	0.39	0.80
Avail Cap(c_a), veh/h	1644	851	488	3242	1301	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.95	0.95	0.99	0.99
Uniform Delay (d), s/veh	28.2	19.7	28.5	5.7	37.3	40.7
Incr Delay (d2), s/veh	1.4	61.7	0.1	0.1	0.4	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	39.2	1.3	1.7	3.2	7.0
LnGrp Delay(d),s/veh	29.6	81.5	28.7	5.8	37.6	45.5
LnGrp LOS	C	F	C	A	D	D
Approach Vol, veh/h	1928			560	488	
Approach Delay, s/veh	54.9			8.3	41.4	
Approach LOS	D			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	35.6	43.3				78.9		26.1
Change Period (Y+Rc), s	7.2	* 7.2				7.2		6.8
Max Green Setting (Gmax), s	10.0	* 36				51.8		39.2
Max Q Clear Time (g_c+14), s	14.7	38.6				5.9		17.1
Green Ext Time (p_c), s	1.3	0.0				2.9		2.2

Intersection Summary								
HCM 2010 Ctrl Delay			43.9					
HCM 2010 LOS			D					

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

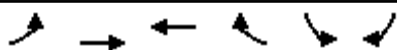
Year 2020 + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	750	240	110	430	80	80	60	20	110	130	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1747	1900	1863	1759	1900	1863	1790	1900
Adj Flow Rate, veh/h	132	824	264	121	473	88	88	66	22	121	143	132
Adj No. of Lanes	1	3	1	1	3	0	1	1	0	2	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	10	2	2	10	10	2	10	10	2	10	10
Cap, veh/h	778	1048	352	654	619	112	124	237	79	241	161	148
Arrive On Green	0.44	0.22	0.22	0.37	0.15	0.15	0.07	0.19	0.18	0.07	0.19	0.18
Sat Flow, veh/h	1774	4715	1583	1774	4054	737	1774	1264	421	3442	857	791
Grp Volume(v), veh/h	132	824	264	121	369	192	88	0	88	121	0	275
Grp Sat Flow(s),veh/h/ln	1774	1572	1583	1774	1590	1611	1774	0	1685	1721	0	1647
Q Serve(g_s), s	6.8	24.7	18.7	6.9	16.7	17.2	7.3	0.0	6.7	5.1	0.0	24.4
Cycle Q Clear(g_c), s	6.8	24.7	18.7	6.9	16.7	17.2	7.3	0.0	6.7	5.1	0.0	24.4
Prop In Lane	1.00		1.00	1.00		0.46	1.00		0.25	1.00		0.48
Lane Grp Cap(c), veh/h	778	1048	352	654	485	246	124	0	316	241	0	309
V/C Ratio(X)	0.17	0.79	0.75	0.18	0.76	0.78	0.71	0.00	0.28	0.50	0.00	0.89
Avail Cap(c_a), veh/h	778	1613	541	654	1079	547	248	0	556	250	0	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.99	0.99	0.99	0.93	0.00	0.93	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	55.0	34.8	32.1	60.9	61.3	68.3	0.0	52.3	67.2	0.0	59.5
Incr Delay (d2), s/veh	0.1	5.5	12.6	0.1	10.6	21.4	6.7	0.0	0.4	1.6	0.0	15.4
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	8.3	11.3	9.4	3.4	8.0	9.2	3.8	0.0	3.2	2.5	0.0	12.5
LnGrp Delay(d),s/veh	25.7	60.4	47.4	32.2	71.5	82.6	75.0	0.0	52.7	68.8	0.0	74.9
LnGrp LOS	C	E	D	C	E	F	E		D	E		E
Approach Vol, veh/h	1220			682			176			396		
Approach Delay, s/veh	53.9			67.7			63.9			73.0		
Approach LOS	D			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	60.5	40.0	15.7	33.8	71.0	29.6	15.7	33.8				
Change Period (Y+Rc), s	5.7	* 7.2	* 5.7	6.1	5.7	* 7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	15.1	* 51	* 21	38.9	15.5	* 50	* 10	49.0				
Max Q Clear Time (g_c+10), s	19.9	26.7	9.3	26.4	8.8	19.2	7.1	8.7				
Green Ext Time (p_c), s	0.2	5.8	0.2	1.2	0.5	2.6	0.1	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	61.4											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary

5: Otay Mesa Rd & Piper Ranch Rd

Year 2020 + Project AM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	250	700	540	60	20	40
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	284	795	614	68	23	45
Adj No. of Lanes	1	2	3	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	10	10	2	2	2
Cap, veh/h	680	2687	1729	669	99	176
Arrive On Green	0.38	0.82	0.37	0.37	0.06	0.06
Sat Flow, veh/h	1774	3368	4871	1583	1774	3167
Grp Volume(v), veh/h	284	795	614	68	23	45
Grp Sat Flow(s), veh/h/ln	1774	1641	1572	1583	1774	1583
Q Serve(g_s), s	10.6	5.2	8.5	2.3	1.1	1.2
Cycle Q Clear(g_c), s	10.6	5.2	8.5	2.3	1.1	1.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	680	2687	1729	669	99	176
V/C Ratio(X)	0.42	0.30	0.36	0.10	0.23	0.26
Avail Cap(c_a), veh/h	680	2687	1729	669	710	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.96	0.96	1.00	1.00
Uniform Delay (d), s/veh	20.4	1.9	20.8	15.7	40.7	40.7
Incr Delay (d2), s/veh	0.4	0.3	0.6	0.3	1.2	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	5.3	2.4	3.8	1.2	0.6	1.1
LnGrp Delay(d), s/veh	20.8	2.2	21.3	16.0	41.9	41.5
LnGrp LOS	C	A	C	B	D	D
Approach Vol, veh/h		1079	682		68	
Approach Delay, s/veh		7.1	20.8		41.6	
Approach LOS		A	C		D	

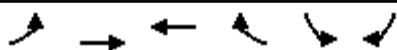
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		79.9		10.1	40.7	39.2		
Change Period (Y+Rc), s		6.2		5.1	6.2	* 6.2		
Max Green Setting (Gmax), s		42.7		36.0	5.0	* 33		
Max Q Clear Time (g_c+l1), s		7.2		3.2	12.6	10.5		
Green Ext Time (p_c), s		5.9		0.3	0.0	3.4		

Intersection Summary								
HCM 2010 Ctrl Delay			13.5					
HCM 2010 LOS			B					

Notes
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary 6: Otay Mesa Rd & SR125 SB Off-Ramp

Year 2020 + Project AM
4/7/2016

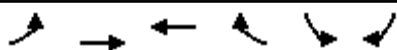


Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑↑	↑↑↑↑		↘↘	↗		
Volume (veh/h)	0	800	430	0	540	270		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1727	1727	0	1863	1863		
Adj Flow Rate, veh/h	0	842	453	0	568	284		
Adj No. of Lanes	0	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	10	10	0	2	2		
Cap, veh/h	0	2500	2500	0	770	354		
Arrive On Green	0.00	0.53	0.53	0.00	0.22	0.22		
Sat Flow, veh/h	0	5026	5026	0	3442	1583		
Grp Volume(v), veh/h	0	842	453	0	568	284		
Grp Sat Flow(s),veh/h/ln	0	1572	1572	0	1721	1583		
Q Serve(g_s), s	0.0	5.1	2.5	0.0	7.7	8.5		
Cycle Q Clear(g_c), s	0.0	5.1	2.5	0.0	7.7	8.5		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2500	2500	0	770	354		
V/C Ratio(X)	0.00	0.34	0.18	0.00	0.74	0.80		
Avail Cap(c_a), veh/h	0	2500	2500	0	785	361		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	0.97	0.98	0.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	6.7	6.1	0.0	18.0	18.4		
Incr Delay (d2), s/veh	0.0	0.4	0.2	0.0	3.6	12.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.3	1.1	0.0	4.0	4.9		
LnGrp Delay(d),s/veh	0.0	7.1	6.3	0.0	21.7	30.4		
LnGrp LOS		A	A		C	C		
Approach Vol, veh/h		842	453		852			
Approach Delay, s/veh		7.1	6.3		24.6			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.2		16.8		33.2		
Change Period (Y+Rc), s		7.2		6.1		7.2		
Max Green Setting (Gmax), s		25.8		10.9		25.8		
Max Q Clear Time (g_c+l1), s		7.1		10.5		4.5		
Green Ext Time (p_c), s		6.5		0.2		6.8		
Intersection Summary								
HCM 2010 Ctrl Delay		13.8						
HCM 2010 LOS		B						

HCM 2010 Signalized Intersection Summary

7: Otay Mesa Rd & SR125 NB On-Ramp

Year 2020 + Project AM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑	↰↰	↰		
Volume (veh/h)	30	3170	850	300	0	0
Number	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1734	1863		
Adj Flow Rate, veh/h	32	3337	915	303		
Adj No. of Lanes	2	2	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	10	10	2		
Cap, veh/h	172	14448	21960	6686		
Arrive On Green	0.05	1.00	1.00	1.00		
Sat Flow, veh/h	3442	3368	5201	1583		
Grp Volume(v), veh/h	32	3337	915	303		
Grp Sat Flow(s),veh/h/ln	1721	1641	1734	1583		
Q Serve(g_s), s	0.4	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.0		
Prop In Lane	1.00			1.00		
Lane Grp Cap(c), veh/h	172	14448	21960	6686		
V/C Ratio(X)	0.19	0.23	0.04	0.05		
Avail Cap(c_a), veh/h	473	14448	21960	6686		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.86	0.86	1.00	1.00		
Uniform Delay (d), s/veh	18.2	0.0	0.0	0.0		
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.0	0.0		
LnGrp Delay(d),s/veh	18.7	0.0	0.0	0.0		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		3369	1218			
Approach Delay, s/veh		0.2	0.0			
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		187.0			7.2	179.8		
Change Period (Y+Rc), s		* 7.2			* 5.7	7.2		
Max Green Setting (Gmax), s		* 37			* 5	22.1		
Max Q Clear Time (g_c+l1), s		2.0			2.4	2.0		
Green Ext Time (p_c), s		34.2			0.0	19.8		

Intersection Summary

HCM 2010 Ctrl Delay	0.2
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection												
Int Delay, s/veh		7.5										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	380	1980	10	10	1430	70	10	10	10	110	10	560
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	404	2106	11	11	1521	74	11	11	11	117	11	596
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1596	0	0	2117	0	0	3707	4537	1059	3447	4506	798
Stage 1	-	-	-	-	-	-	2920	2920	-	1580	1580	-
Stage 2	-	-	-	-	-	-	787	1617	-	1867	2926	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	407	-	-	255	-	-	~ 2	~ 1	221	~ 3	~ 1	~ 329
Stage 1	-	-	-	-	-	-	15	34	-	~ 114	168	-
Stage 2	-	-	-	-	-	-	351	161	-	~ 75	34	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	407	-	-	255	-	-	-	~ 1	221	-	~ 1	~ 329
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 1	-	-	~ 1	-
Stage 1	-	-	-	-	-	-	15	34	-	~ 114	99	-
Stage 2	-	-	-	-	-	-	-	95	-	~ 49	34	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	12.1			3.9								
HCM LOS							-			-		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	-	2	407	-	-	255	-	-	-			
HCM Lane V/C Ratio	-10.638	0.993		-	-	0.042	-	-	-			
HCM Control Delay (s)	\$ 7623.3	75.2	0	-	-	19.7	4	-	-			
HCM Lane LOS	-	F	F	A	-	C	A	-	-			
HCM 95th %tile Q(veh)	-	4.3	12.1	-	-	0.1	-	-	-			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

HCM 2010 Signalized Intersection Summary
9: Sanyo Ave & Otay Mesa Rd

Year 2020 + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	280	1440	360	40	970	40	100	40	50	60	70	430
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1767	1900	1863	1732	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	304	1532	383	43	1032	43	101	50	53	65	76	467
Adj No. of Lanes	0	2	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.94	0.94	0.94	0.94	0.92	0.94	0.92	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	200	1138	348	56	1365	57	125	259	275	60	43	233
Arrive On Green	0.25	0.25	0.25	0.03	0.83	0.83	0.07	0.31	0.31	0.19	0.19	0.19
Sat Flow, veh/h	214	1523	466	1774	1651	69	1774	829	879	141	226	1217
Grp Volume(v), veh/h	971	0	1248	43	0	1075	101	0	103	608	0	0
Grp Sat Flow(s),veh/h/ln	684	0	1519	1774	0	1720	1774	0	1708	1585	0	0
Q Serve(g_s), s	62.6	0.0	89.7	2.9	0.0	34.6	6.7	0.0	5.3	19.3	0.0	0.0
Cycle Q Clear(g_c), s	89.7	0.0	89.7	2.9	0.0	34.6	6.7	0.0	5.3	23.0	0.0	0.0
Prop In Lane	0.31		0.31	1.00		0.04	1.00		0.51	0.11		0.77
Lane Grp Cap(c), veh/h	551	0	1135	56	0	1422	125	0	534	337	0	0
V/C Ratio(X)	1.76	0.00	1.10	0.76	0.00	0.76	0.81	0.00	0.19	1.80	0.00	0.00
Avail Cap(c_a), veh/h	551	0	1135	74	0	1422	132	0	534	337	0	0
HCM Platoon Ratio	0.33	0.33	0.33	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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	61.0	0.0	45.2	57.7	0.0	4.8	55.0	0.0	30.2	49.6	0.0	0.0
Incr Delay (d2), s/veh	350.2	0.0	58.2	28.2	0.0	3.8	29.1	0.0	0.2	373.7	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	72.0	0.0	56.2	1.9	0.0	17.3	4.3	0.0	2.5	46.1	0.0	0.0
LnGrp Delay(d),s/veh	411.2	0.0	103.4	85.8	0.0	8.6	84.1	0.0	30.3	423.2	0.0	0.0
LnGrp LOS	F		F	F		A	F		C	F		
Approach Vol, veh/h	2219			1118			204			608		
Approach Delay, s/veh	238.1			11.6			57.0			423.2		
Approach LOS	F			B			E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	9.5	97.3	14.5	29.1		106.9		43.6				
Change Period (Y+Rc), s	* 5.7	7.2	6.1	* 6.1		7.2		6.1				
Max Green Setting (Gmax), s	* 5	60.1	8.9	* 23		70.8		35.9				
Max Q Clear Time (g_c+l1), s	4.9	91.7	8.7	25.0		36.6		7.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0		30.5		5.8				
Intersection Summary												
HCM 2010 Ctrl Delay	195.3											
HCM 2010 LOS	F											
Notes												

Intersection						
Int Delay, s/veh	1168					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	590	960	650	130	150	420
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	92	92	92	92	92	92
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	641	1043	707	141	163	457
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	848	0	-	0	3103	777
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	2326	-
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	790	-	-	-	~ 13	~ 397
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	~ 78	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	790	-	-	-	~ 13	~ 397
Mov Cap-2 Maneuver	-	-	-	-	~ 13	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	~ 78	-
Approach	EB		WB		SB	
HCM Control Delay, s	9.9		0		\$ 5915.7	
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	790	-	-	-	45	
HCM Lane V/C Ratio	0.812	-	-	-	13.768	
HCM Control Delay (s)	26	0	-		\$ 5915.7	
HCM Lane LOS	D	A	-	-	F	
HCM 95th %tile Q(veh)	8.8	-	-	-	74.9	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 2010 Signalized Intersection Summary

11: Enrico Fermi Rd & Otay Mesa Rd

Year 2020 + Project AM
4/7/2016

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Volume (veh/h)	260	50	310	320	180	260		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1748	1900	1863	1727	1863	1863		
Adj Flow Rate, veh/h	329	63	392	405	228	329		
Adj No. of Lanes	1	0	1	1	1	1		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79		
Percent Heavy Veh, %	10	10	2	10	2	2		
Cap, veh/h	420	80	462	1072	453	393		
Arrive On Green	0.29	0.29	0.26	0.62	0.26	0.25		
Sat Flow, veh/h	1426	273	1774	1727	1774	1583		
Grp Volume(v), veh/h	0	392	392	405	228	329		
Grp Sat Flow(s),veh/h/ln	0	1700	1774	1727	1774	1583		
Q Serve(g_s), s	0.0	15.4	15.2	8.4	8.0	14.3		
Cycle Q Clear(g_c), s	0.0	15.4	15.2	8.4	8.0	14.3		
Prop In Lane		0.16	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	0	500	462	1072	453	393		
V/C Ratio(X)	0.00	0.78	0.85	0.38	0.50	0.84		
Avail Cap(c_a), veh/h	0	949	983	2036	624	546		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	23.5	25.5	6.8	23.1	25.9		
Incr Delay (d2), s/veh	0.0	2.7	4.5	0.2	0.9	8.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	7.6	8.0	4.0	4.0	7.1		
LnGrp Delay(d),s/veh	0.0	26.3	29.9	7.0	23.9	33.8		
LnGrp LOS		C	C	A	C	C		
Approach Vol, veh/h	392			797	557			
Approach Delay, s/veh	26.3			18.3	29.8			
Approach LOS	C			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	23.7	26.8				50.5		22.0
Change Period (Y+Rc), s	4.8	6.0				6.0		4.0
Max Green Setting (Gmax), s	40.2	40.0				85.0		25.0
Max Q Clear Time (g_c+l1), s	17.2	17.4				10.4		16.3
Green Ext Time (p_c), s	1.7	3.5				3.8		1.7
Intersection Summary								
HCM 2010 Ctrl Delay			23.8					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

12: Britannia Blvd & SR-905 WB Ramps

Year 2020 + Project AM

4/7/2016

	           											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	150	10	240	140	280	0	0	240	40
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1810	1803	1810	1810	1727	0	0	1738	1900
Adj Flow Rate, veh/h				192	0	317	179	359	0	0	308	51
Adj No. of Lanes				1	0	2	2	3	0	0	3	0
Peak Hour Factor				0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %				5	10	5	5	10	0	0	10	10
Cap, veh/h				230	0	411	267	3550	0	0	2560	411
Arrive On Green				0.13	0.00	0.13	0.08	0.75	0.00	0.00	0.62	0.62
Sat Flow, veh/h				1723	0	3076	3343	4871	0	0	4279	663
Grp Volume(v), veh/h				192	0	317	179	359	0	0	234	125
Grp Sat Flow(s),veh/h/ln				1723	0	1538	1672	1572	0	0	1582	1622
Q Serve(g_s), s				9.8	0.0	9.0	4.7	1.8	0.0	0.0	2.7	2.8
Cycle Q Clear(g_c), s				9.8	0.0	9.0	4.7	1.8	0.0	0.0	2.7	2.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.41
Lane Grp Cap(c), veh/h				230	0	411	267	3550	0	0	1964	1007
V/C Ratio(X)				0.83	0.00	0.77	0.67	0.10	0.00	0.00	0.12	0.12
Avail Cap(c_a), veh/h				247	0	441	1237	3550	0	0	1964	1007
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.98	0.98	0.00	0.00	0.71	0.71
Uniform Delay (d), s/veh				38.0	0.0	37.6	40.2	3.0	0.0	0.0	7.0	7.0
Incr Delay (d2), s/veh				20.0	0.0	7.7	2.8	0.1	0.0	0.0	0.1	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.9	0.0	4.2	2.3	0.8	0.0	0.0	1.2	1.3
LnGrp Delay(d),s/veh				58.0	0.0	45.3	43.1	3.0	0.0	0.0	7.1	7.2
LnGrp LOS				E		D	D	A			A	A
Approach Vol, veh/h					509			538			359	
Approach Delay, s/veh					50.1			16.4			7.1	
Approach LOS					D			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		72.9			11.9	61.0		17.1				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		66.9			* 33	28.9		12.9				
Max Q Clear Time (g_c+I1), s		3.8			6.7	4.8		11.8				
Green Ext Time (p_c), s		5.7			0.6	5.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				26.2								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

13: Britannia Blvd & SR-905 EB Ramps

Year 2020 + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	180	10	680	0	0	0	0	240	40	60	330	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1805	1810				0	1739	1900	1810	1727	0
Adj Flow Rate, veh/h	234	13	883				0	312	52	78	429	0
Adj No. of Lanes	0	1	2				0	2	0	2	3	0
Peak Hour Factor	0.77	0.77	0.77				0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	5	10	5				0	10	10	5	10	0
Cap, veh/h	460	26	762				0	1162	192	203	2586	0
Arrive On Green	0.28	0.28	0.28				0.00	0.41	0.41	0.06	0.55	0.00
Sat Flow, veh/h	1633	91	2707				0	2926	468	3343	4871	0
Grp Volume(v), veh/h	247	0	883				0	180	184	78	429	0
Grp Sat Flow(s),veh/h/ln	1723	0	1354				0	1652	1656	1672	1572	0
Q Serve(g_s), s	7.2	0.0	16.9				0.0	4.3	4.4	1.3	2.7	0.0
Cycle Q Clear(g_c), s	7.2	0.0	16.9				0.0	4.3	4.4	1.3	2.7	0.0
Prop In Lane	0.95		1.00				0.00		0.28	1.00		0.00
Lane Grp Cap(c), veh/h	485	0	762				0	676	678	203	2586	0
V/C Ratio(X)	0.51	0.00	1.16				0.00	0.27	0.27	0.38	0.17	0.00
Avail Cap(c_a), veh/h	485	0	762				0	676	678	279	2586	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	18.1	0.0	21.5				0.0	11.7	11.8	27.1	6.7	0.0
Incr Delay (d2), s/veh	0.9	0.0	85.5				0.0	1.0	1.0	1.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	15.3				0.0	2.1	2.2	0.6	1.2	0.0
LnGrp Delay(d),s/veh	18.9	0.0	107.1				0.0	12.7	12.8	28.2	6.9	0.0
LnGrp LOS	B		F					B	B	C	A	
Approach Vol, veh/h	1130						364			507		
Approach Delay, s/veh	87.8						12.7			10.1		
Approach LOS	F						B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	8.3	29.7		22.0		38.0						
Change Period (Y+Rc), s	4.7	5.1		5.1		5.1						
Max Green Setting (Gmax), s	5	23.2		16.9		32.9						
Max Q Clear Time (g_c+I), s	13.3	6.4		18.9		4.7						
Green Ext Time (p_c), s	0.0	4.8		0.0		5.7						
Intersection Summary												
HCM 2010 Ctrl Delay	54.5											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary

14: La Media Rd & St Andrews Ave/SR-905 WB Ramps

Year 2020 + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	40	10	40	100	130	880	90	0	560	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1729	1810	1810	1727	1810	0	1727	1810
Adj Flow Rate, veh/h	0	0	43	11	43	108	140	946	97	0	602	32
Adj No. of Lanes	1	1	0	1	1	1	2	2	1	0	3	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	10	10	5	10	5	5	10	5	0	10	5
Cap, veh/h	63	0	56	158	158	141	206	2303	1078	0	2773	905
Arrive On Green	0.00	0.00	0.04	0.09	0.09	0.09	0.12	1.00	1.00	0.00	0.59	0.59
Sat Flow, veh/h	1723	0	1538	1723	1729	1538	3343	3282	1536	0	4871	1538
Grp Volume(v), veh/h	0	0	43	11	43	108	140	946	97	0	602	32
Grp Sat Flow(s),veh/h/ln	1723	0	1538	1723	1729	1538	1672	1641	1536	0	1572	1538
Q Serve(g_s), s	0.0	0.0	2.5	0.5	2.1	6.2	3.6	0.0	0.0	0.0	5.4	0.8
Cycle Q Clear(g_c), s	0.0	0.0	2.5	0.5	2.1	6.2	3.6	0.0	0.0	0.0	5.4	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	63	0	56	158	158	141	206	2303	1078	0	2773	905
V/C Ratio(X)	0.00	0.00	0.76	0.07	0.27	0.77	0.68	0.41	0.09	0.00	0.22	0.04
Avail Cap(c_a), veh/h	247	0	220	247	248	220	308	2303	1078	0	2773	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	1.00	0.53	0.53	0.53	0.00	0.80	0.80
Uniform Delay (d), s/veh	0.0	0.0	43.0	37.4	38.1	39.9	38.6	0.0	0.0	0.0	8.7	7.8
Incr Delay (d2), s/veh	0.0	0.0	19.0	0.2	0.9	8.4	2.1	0.3	0.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.4	0.3	1.0	2.9	1.7	0.1	0.0	0.0	2.4	0.3
LnGrp Delay(d),s/veh	0.0	0.0	61.9	37.6	39.0	48.4	40.7	0.3	0.1	0.0	8.9	7.9
LnGrp LOS			E	D	D	D	D	A	A		A	A
Approach Vol, veh/h	43		162				1183			634		
Approach Delay, s/veh	61.9		45.1				5.1			8.8		
Approach LOS	E		D				A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	68.3		8.4		10.2		58.0		13.3			
Change Period (Y+Rc), s	5.1		5.1		* 4.7		5.1		5.1			
Max Green Setting (Gmax), s	48.9		12.9		* 8.3		35.9		12.9			
Max Q Clear Time (g_c+I1), s	2.0		4.5		5.6		7.4		8.2			
Green Ext Time (p_c), s	17.5		0.1		0.1		14.2		0.2			
Intersection Summary												
HCM 2010 Ctrl Delay	10.7											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

15: La Media Rd & SR-905 EB Ramps

Year 2020 + Project AM
4/7/2016

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	900	450	10	200	200	110		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1810	1727	1727	1810		
Adj Flow Rate, veh/h	968	484	11	215	215	118		
Adj No. of Lanes	2	2	2	3	2	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	5	5	5	10	10	5		
Cap, veh/h	1030	834	45	2728	1683	1263		
Arrive On Green	0.31	0.31	0.01	0.58	0.17	0.17		
Sat Flow, veh/h	3343	2707	3343	4871	3368	1538		
Grp Volume(v), veh/h	968	484	11	215	215	118		
Grp Sat Flow(s),veh/h/ln	1672	1354	1672	1572	1641	1538		
Q Serve(g_s), s	25.4	13.6	0.3	1.8	5.0	2.2		
Cycle Q Clear(g_c), s	25.4	13.6	0.3	1.8	5.0	2.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1030	834	45	2728	1683	1263		
V/C Ratio(X)	0.94	0.58	0.25	0.08	0.13	0.09		
Avail Cap(c_a), veh/h	1036	839	186	2728	1683	1263		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.99	0.99		
Uniform Delay (d), s/veh	30.3	26.2	44.0	8.4	20.3	2.8		
Incr Delay (d2), s/veh	15.5	1.0	2.8	0.1	0.2	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	18.9	10.3	0.2	0.8	2.3	2.6		
LnGrp Delay(d),s/veh	45.8	27.2	46.8	8.4	20.4	2.9		
LnGrp LOS	D	C	D	A	C	A		
Approach Vol, veh/h	1452			226	333			
Approach Delay, s/veh	39.6			10.3	14.2			
Approach LOS	D			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		57.2		32.8	5.9	51.3		
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		
Max Green Setting (Gmax), s		51.9		27.9	* 5	42.2		
Max Q Clear Time (g_c+l1), s		3.8		27.4	2.3	7.0		
Green Ext Time (p_c), s		3.6		0.4	0.0	3.6		
Intersection Summary								
HCM 2010 Ctrl Delay			32.1					
HCM 2010 LOS			C					
Notes								

Intersection

Intersection Delay, s/veh69.7

Intersection LOS F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	60	110	80	0	10	210	520	0	30	320	70	0	260	450	50
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	10	2	10	2	10	2	10	2	10	2	10	2	10	2	10	2
Mvmt Flow	0	71	129	94	0	12	247	612	0	35	376	82	0	306	529	59
Number of Lanes	0	0	1	0	0	1	2	0	0	1	1	0	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	1
HCM Control Delay	53.4	63.3	76.6	77.5
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	24%	100%	0%	0%	37%	0%
Vol Thru, %	0%	82%	44%	0%	100%	12%	63%	0%
Vol Right, %	0%	18%	32%	0%	0%	88%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	390	250	10	140	590	710	50
LT Vol	30	0	60	10	0	0	260	0
Through Vol	0	320	110	0	140	70	450	0
RT Vol	0	70	80	0	0	520	0	50
Lane Flow Rate	35	459	294	12	165	694	835	59
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.106	1	0.862	0.032	0.437	1	1	0.158
Departure Headway (Hd)	10.789	10.301	10.556	9.918	9.555	8.802	10.435	9.69
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	332	353	344	362	379	416	359	371
Service Time	8.542	8.054	8.284	7.648	7.284	6.532	8.187	7.441
HCM Lane V/C Ratio	0.105	1.3	0.855	0.033	0.435	1.668	2.326	0.159
HCM Control Delay	14.8	81.3	53.4	13	19.5	74.6	81.9	14.3
HCM Lane LOS	B	F	F	B	C	F	F	B
HCM 95th-tile Q	0.4	11.4	8	0.1	2.2	12.4	11.3	0.6

Intersection												
Int Delay, s/veh	461.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	160	190	20	250	10	570	60	210	10	70	60
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	3	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	150	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	10	2	2	10	2	2	10	2	2	10	2
Mvmt Flow	75	200	238	25	312	12	712	75	262	12	88	75
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	328	0	0	441	0	0	725	850	222	663	963	167
Stage 1	-	-	-	-	-	-	472	472	-	372	372	-
Stage 2	-	-	-	-	-	-	253	378	-	291	591	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.7	6.94	7.54	6.7	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.7	-	6.54	5.7	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.1	3.32	3.52	4.1	3.32
Pot Cap-1 Maneuver	1228	-	-	1115	-	-	~ 313	282	782	347	241	848
Stage 1	-	-	-	-	-	-	~ 542	538	-	621	598	-
Stage 2	-	-	-	-	-	-	729	594	-	693	473	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1227	-	-	1115	-	-	~ 185	258	780	167	220	845
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 185	258	-	167	220	-
Stage 1	-	-	-	-	-	-	~ 508	504	-	582	583	-
Stage 2	-	-	-	-	-	-	~ 551	579	-	367	443	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.6			\$ 911.9			30.3		
HCM LOS							F			D		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	185	538	1227	-	-	1115	-	-	312			
HCM Lane V/C Ratio	3.851	0.627	0.061	-	-	0.022	-	-	0.561			
HCM Control Delay (s)	\$ 1333.3	22.3	8.1	-	-	8.3	-	-	30.3			
HCM Lane LOS	F	C	A	-	-	A	-	-	D			
HCM 95th %tile Q(veh)	69.8	4.3	0.2	-	-	0.1	-	-	3.2			
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 2010 Signalized Intersection Summary
18: Enrico Fermi Rd & Airway Rd

Year 2020 + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	180	80	60	60	40	150	120	220	310	120	300	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1804	1900	1863	1754	1900
Adj Flow Rate, veh/h	237	105	79	79	53	197	158	289	408	158	395	105
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	2	10	2	2	10	2	2	10	10	2	10	10
Cap, veh/h	297	467	627	103	289	265	211	560	498	198	850	224
Arrive On Green	0.17	0.27	0.28	0.06	0.17	0.17	0.12	0.33	0.32	0.11	0.33	0.33
Sat Flow, veh/h	1774	1727	1583	1774	1727	1583	1774	1714	1526	1774	2612	687
Grp Volume(v), veh/h	237	105	79	79	53	197	158	289	408	158	250	250
Grp Sat Flow(s),veh/h/ln	1774	1727	1583	1774	1727	1583	1774	1714	1526	1774	1666	1633
Q Serve(g_s), s	10.1	3.7	2.5	3.5	2.1	9.3	6.8	10.8	19.4	6.8	9.4	9.6
Cycle Q Clear(g_c), s	10.1	3.7	2.5	3.5	2.1	9.3	6.8	10.8	19.4	6.8	9.4	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	297	467	627	103	289	265	211	560	498	198	542	531
V/C Ratio(X)	0.80	0.22	0.13	0.77	0.18	0.74	0.75	0.52	0.82	0.80	0.46	0.47
Avail Cap(c_a), veh/h	518	923	1045	288	711	651	457	664	591	365	569	558
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	31.5	22.3	15.1	36.6	28.2	31.2	33.5	21.5	24.6	34.1	21.1	21.2
Incr Delay (d2), s/veh	4.9	0.2	0.1	11.4	0.3	4.1	5.2	0.7	7.7	7.2	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	1.8	1.1	2.0	1.0	4.4	3.6	5.2	9.2	3.7	4.4	4.4
LnGrp Delay(d),s/veh	36.4	22.6	15.2	48.0	28.5	35.3	38.8	22.2	32.3	41.4	21.7	21.8
LnGrp LOS	D	C	B	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		421			329			855			658	
Approach Delay, s/veh		29.0			37.3			30.1			26.5	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	25.9	13.7	31.1	16.2	17.8	13.6	31.2				
Change Period (Y+Rc), s	3.5	4.6	4.8	6.0	3.5	4.6	4.8	6.0				
Max Green Setting (Gmax), s	12.8	42.1	19.8	26.4	22.5	32.4	16.2	30.0				
Max Q Clear Time (g_c+I1), s	5.5	5.7	8.8	11.6	12.1	11.3	8.8	21.4				
Green Ext Time (p_c), s	0.1	2.0	0.4	4.9	0.6	1.9	0.2	3.7				
Intersection Summary												
HCM 2010 Ctrl Delay			29.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 19: SR 905 SB Ramps & Siempre Viva Road/Siempre Viva

Year 2020 + Project AM
 4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↔↔	↑↑↑	↔	↔↔
Volume (veh/h)	910	100	490	850	0	790
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1769	1900	1863	1759	1863	1863
Adj Flow Rate, veh/h	989	109	533	924	0	859
Adj No. of Lanes	3	0	2	3	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	2	8	2	2
Cap, veh/h	3639	400	629	5096	430	675
Arrive On Green	0.82	0.82	0.18	1.00	0.00	0.24
Sat Flow, veh/h	4572	485	3442	4961	1774	2787
Grp Volume(v), veh/h	721	377	533	924	0	859
Grp Sat Flow(s), veh/h/ln	1610	1679	1721	1601	1774	1393
Q Serve(g_s), s	4.8	4.9	14.2	0.0	0.0	23.0
Cycle Q Clear(g_c), s	4.8	4.9	14.2	0.0	0.0	23.0
Prop In Lane		0.29	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2655	1384	629	5096	430	675
V/C Ratio(X)	0.27	0.27	0.85	0.18	0.00	1.27
Avail Cap(c_a), veh/h	2655	1384	757	5096	430	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	1.9	1.9	37.5	0.0	0.0	36.0
Incr Delay (d2), s/veh	0.3	0.5	7.6	0.1	0.0	134.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.4	7.4	0.0	0.0	21.4
LnGrp Delay(d),s/veh	2.1	2.4	45.2	0.1	0.0	170.3
LnGrp LOS	A	A	D	A		F
Approach Vol, veh/h	1098			1457	859	
Approach Delay, s/veh	2.2			16.6	170.3	
Approach LOS	A			B	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	22.5	84.0				106.5		27.0
Change Period (Y+Rc), s	5.1	5.1				* 5.1		4.0
Max Green Setting (Gmax), s	20.9	36.9				* 64		23.0
Max Q Clear Time (g_c+10), s	10.2	6.9				2.0		25.0
Green Ext Time (p_c), s	1.1	12.9				15.5		0.0

Intersection Summary								
HCM 2010 Ctrl Delay			50.6					
HCM 2010 LOS			D					

Notes

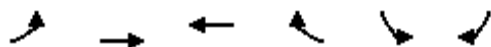
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM Unsignalized Intersection Capacity Analysis

20: Siempre Viva /Siempre Viva Road & SR905 SB Off-Ramp

Year 2020 + Project AM

4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↑↑↑↑	↑↑↑↑			↗	
Volume (veh/h)	0	1700	860	0	0	480	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	0	1828	925	0	0	516	
Pedestrians					5		
Lane Width (ft)					12.0		
Walking Speed (ft/s)					4.0		
Percent Blockage					0		
Right turn flare (veh)							
Median type		None	None				
Median storage veh)							
Upstream signal (ft)		281	733				
pX, platoon unblocked					0.87		
vC, conflicting volume	930				1539	313	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	930				1085	313	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	100				100	24	
cM capacity (veh/h)	728				182	680	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	609	609	609	308	308	308	516
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	516
cSH	1700	1700	1700	1700	1700	1700	680
Volume to Capacity	0.36	0.36	0.36	0.18	0.18	0.18	0.76
Queue Length 95th (ft)	0	0	0	0	0	0	176
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	25.0
Lane LOS							D
Approach Delay (s)	0.0			0.0			25.0
Approach LOS							D
Intersection Summary							
Average Delay			3.9				
Intersection Capacity Utilization			60.2%		ICU Level of Service		B
Analysis Period (min)			15				

HCM 2010 Signalized Intersection Summary
21: SR 905 NB Ramps & Siempre Viva Road

Year 2020 + Project AM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	250	1450	0	0	500	470	360	10	550	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1759	0	0	1791	1863	1900	1863	1863			
Adj Flow Rate, veh/h	272	1576	0	0	543	511	391	11	598			
Adj No. of Lanes	2	3	0	0	2	2	0	1	2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	8	0	0	8	2	2	2	2			
Cap, veh/h	963	3001	0	0	1053	925	489	14	789			
Arrive On Green	0.28	0.62	0.00	0.00	0.29	0.29	0.28	0.28	0.28			
Sat Flow, veh/h	3442	4961	0	0	3582	3145	1728	49	2787			
Grp Volume(v), veh/h	272	1576	0	0	543	511	402	0	598			
Grp Sat Flow(s),veh/h/ln	1721	1601	0	0	1791	1573	1776	0	1393			
Q Serve(g_s), s	6.2	18.3	0.0	0.0	12.6	13.7	21.0	0.0	19.6			
Cycle Q Clear(g_c), s	6.2	18.3	0.0	0.0	12.6	13.7	21.0	0.0	19.6			
Prop In Lane	1.00		0.00	0.00		1.00	0.97		1.00			
Lane Grp Cap(c), veh/h	963	3001	0	0	1053	925	503	0	789			
V/C Ratio(X)	0.28	0.53	0.00	0.00	0.52	0.55	0.80	0.00	0.76			
Avail Cap(c_a), veh/h	963	3001	0	0	1053	925	718	0	1126			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	1.00	0.00	1.00			
Uniform Delay (d), s/veh	28.1	10.5	0.0	0.0	29.4	29.8	33.5	0.0	32.7			
Incr Delay (d2), s/veh	0.2	0.7	0.0	0.0	0.2	0.2	4.2	0.0	1.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.0	8.2	0.0	0.0	6.3	6.0	10.9	0.0	7.8			
LnGrp Delay(d),s/veh	28.3	11.1	0.0	0.0	29.5	30.0	37.7	0.0	34.6			
LnGrp LOS	C	B			C	C	D		C			
Approach Vol, veh/h		1848			1054			1000				
Approach Delay, s/veh		13.7			29.7			35.8				
Approach LOS		B			C			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		67.1			33.1	34.0		32.9				
Change Period (Y+Rc), s		5.1			5.1	* 5.1		5.1				
Max Green Setting (Gmax), s		49.9			16.3	* 29		39.9				
Max Q Clear Time (g_c+l1), s		20.3			8.2	15.7		23.0				
Green Ext Time (p_c), s		12.4			5.6	4.6		4.8				
Intersection Summary												
HCM 2010 Ctrl Delay			23.7									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
22: Paseo De Las Americas & Siempre Viva Road

Year 2020 + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	800	790	130	30	1080	240	180	200	60	100	60	240
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1863	1777	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	889	878	144	33	1200	267	200	222	67	111	67	267
Adj No. of Lanes	1	3	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	2	2	8	8	2	2	2	2	2	2
Cap, veh/h	365	2339	769	49	849	187	144	684	200	145	454	398
Arrive On Green	0.21	0.49	0.49	0.03	0.31	0.30	0.08	0.26	0.26	0.08	0.26	0.25
Sat Flow, veh/h	1774	4803	1579	1774	2747	605	1774	2672	781	1774	1770	1553
Grp Volume(v), veh/h	889	878	144	33	733	734	200	145	144	111	67	267
Grp Sat Flow(s),veh/h/ln	1774	1601	1579	1774	1688	1663	1774	1770	1684	1774	1770	1553
Q Serve(g_s), s	23.1	12.9	5.8	2.1	34.7	34.7	9.1	7.4	7.8	6.9	3.3	17.4
Cycle Q Clear(g_c), s	23.1	12.9	5.8	2.1	34.7	34.7	9.1	7.4	7.8	6.9	3.3	17.4
Prop In Lane	1.00		1.00	1.00		0.36	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	365	2339	769	49	522	514	144	453	431	145	454	398
V/C Ratio(X)	2.44	0.38	0.19	0.67	1.40	1.43	1.39	0.32	0.34	0.77	0.15	0.67
Avail Cap(c_a), veh/h	365	2339	769	103	522	514	144	545	519	174	575	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	18.1	16.3	54.1	38.8	38.9	51.6	33.9	34.0	50.5	32.3	37.7
Incr Delay (d2), s/veh	654.3	0.1	0.1	14.5	193.3	203.7	212.8	0.4	0.5	15.5	0.1	2.4
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	17.6	5.7	2.5	1.2	44.1	44.9	12.9	3.7	3.7	4.0	1.6	7.7
LnGrp Delay(d),s/veh	698.9	18.2	16.4	68.6	232.1	242.6	264.4	34.3	34.5	66.1	32.4	40.1
LnGrp LOS	F	B	B	E	F	F	F	C	C	E	C	D
Approach Vol, veh/h	1911					1500		489		445		
Approach Delay, s/veh	334.7					233.6		128.4		45.4		
Approach LOS	F					F		F		D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	59.1	13.0	33.2	27.0	39.1	13.1	33.1				
Change Period (Y+Rc), s	4.4	4.9	4.4	4.9	4.4	4.9	4.4	4.9				
Max Green Setting (Gmax), s	6.0	50.8	8.6	36.0	22.6	34.2	10.5	34.1				
Max Q Clear Time (g_c+1.1), s	14.1	14.9	11.1	19.4	25.1	36.7	8.9	9.8				
Green Ext Time (p_c), s	0.0	18.8	0.0	2.5	0.0	0.0	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay		247.0										
HCM 2010 LOS		F										

HCM 2010 Signalized Intersection Summary
23: Enrico Fermi Rd & Siempre Viva Road

Year 2020 + Project AM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	410	330	30	20	380	80	600	470	110	20	30	310
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1767	1900	1863	1776	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	494	398	36	24	458	96	723	566	133	24	36	373
Adj No. of Lanes	2	1	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	8	8	2	8	8	2	2	2	2	2	2
Cap, veh/h	985	457	41	339	532	111	245	982	230	33	398	356
Arrive On Green	0.29	0.29	0.29	0.19	0.19	0.19	0.14	0.34	0.34	0.02	0.23	0.23
Sat Flow, veh/h	3442	1597	144	1774	2782	579	1774	2848	667	1774	1770	1583
Grp Volume(v), veh/h	494	0	434	24	277	277	723	351	348	24	36	373
Grp Sat Flow(s),veh/h/ln	1721	0	1742	1774	1688	1674	1774	1770	1745	1774	1770	1583
Q Serve(g_s), s	14.4	0.0	28.4	1.3	19.0	19.3	16.6	19.5	19.6	1.6	1.9	27.0
Cycle Q Clear(g_c), s	14.4	0.0	28.4	1.3	19.0	19.3	16.6	19.5	19.6	1.6	1.9	27.0
Prop In Lane	1.00		0.08	1.00		0.35	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	985	0	499	339	323	320	245	610	602	33	398	356
V/C Ratio(X)	0.50	0.00	0.87	0.07	0.86	0.87	2.95	0.58	0.58	0.74	0.09	1.05
Avail Cap(c_a), veh/h	985	0	499	444	422	419	245	610	602	87	398	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	35.7	0.0	40.7	39.8	46.9	47.0	51.7	32.1	32.2	58.6	36.8	46.5
Incr Delay (d2), s/veh	1.7	0.0	17.5	0.1	12.8	14.0	886.7	1.3	1.4	23.6	0.1	56.7
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	7.0	0.0	16.0	0.7	10.0	10.2	68.6	9.7	9.7	1.0	0.9	17.4
LnGrp Delay(d),s/veh	37.4	0.0	58.2	39.9	59.8	61.0	938.4	33.4	33.5	82.2	36.9	103.2
LnGrp LOS	D		E	D	E	E	F	C	C	F	D	F
Approach Vol, veh/h	928					578		1422		433		
Approach Delay, s/veh	47.1					59.5		493.6		96.5		
Approach LOS	D					E		F		F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	39.3		21.0	31.9	27.8		6.6	46.3				
Change Period (Y+Rc), s	4.9		4.4	4.9	4.9		4.4	4.9				
Max Green Setting (Gmax), s	27.3		16.6	27.0	30.0		5.9	37.7				
Max Q Clear Time (g_c+I1), s	30.4		18.6	29.0	21.3		3.6	21.6				
Green Ext Time (p_c), s	0.0		0.0	0.0	1.7		0.0	4.7				
Intersection Summary												
HCM 2010 Ctrl Delay	244.5											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary

1: Heritage Road & Otay Mesa Rd

Year 2020 + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	320	600	50	20	820	370	40	90	20	370	100	370
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	360	674	56	22	921	416	45	101	22	416	112	416
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	435	1777	597	534	1913	642	405	129	28	457	218	678
Arrive On Green	0.13	0.38	0.38	0.05	0.13	0.13	0.23	0.09	0.08	0.26	0.12	0.12
Sat Flow, veh/h	3442	4715	1583	3442	4715	1583	1774	1483	323	1774	1863	2787
Grp Volume(v), veh/h	360	674	56	22	921	416	45	0	123	416	112	416
Grp Sat Flow(s),veh/h/ln	1721	1572	1583	1721	1572	1583	1774	0	1806	1774	1863	1393
Q Serve(g_s), s	13.3	13.5	3.0	0.8	23.5	14.6	2.6	0.0	8.7	29.6	7.3	9.9
Cycle Q Clear(g_c), s	13.3	13.5	3.0	0.8	23.5	14.6	2.6	0.0	8.7	29.6	7.3	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	435	1777	597	534	1913	642	405	0	157	457	218	678
V/C Ratio(X)	0.83	0.38	0.09	0.04	0.48	0.65	0.11	0.00	0.78	0.91	0.51	0.61
Avail Cap(c_a), veh/h	529	1777	597	534	1913	642	405	0	229	600	739	1458
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	29.4	26.2	52.5	43.6	9.6	39.7	0.0	58.2	46.8	53.9	19.3
Incr Delay (d2), s/veh	8.9	0.6	0.3	0.0	0.7	4.3	0.1	0.0	10.1	15.0	1.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	6.0	1.3	0.4	10.4	7.2	1.3	0.0	4.8	16.4	3.9	3.9
LnGrp Delay(d),s/veh	64.3	30.1	26.5	52.5	44.4	13.9	39.9	0.0	68.3	61.8	55.8	20.2
LnGrp LOS	E	C	C	D	D	B	D		E	E	E	C
Approach Vol, veh/h	1090			1359			168			944		
Approach Delay, s/veh	41.2			35.2			60.7			42.8		
Approach LOS	D			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.2	53.0	33.7	19.2	20.4	56.7	37.5	15.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	48.5	8.4	51.1	19.5	33.0	43.5	16.0				
Max Q Clear Time (g_c+I1), s	2.8	15.5	4.6	11.9	15.3	25.5	31.6	10.7				
Green Ext Time (p_c), s	0.0	3.9	0.8	2.8	0.7	4.0	1.4	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	40.2											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary

2: Cactus Rd & Otay Mesa Rd

Year 2020 + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	870	60	100	1130	110	50	10	110	30	10	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1735	1900	1863	1738	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	48	1036	71	119	1345	131	60	12	131	36	12	119
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	119	2582	177	145	2571	250	128	212	180	106	189	161
Arrive On Green	0.05	0.38	0.38	0.08	0.58	0.58	0.07	0.11	0.11	0.06	0.10	0.10
Sat Flow, veh/h	1774	4529	310	1774	4399	428	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	48	722	385	119	968	508	60	12	131	36	12	119
Grp Sat Flow(s),veh/h/ln	1774	1579	1680	1774	1582	1663	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.4	21.7	21.7	8.6	23.8	23.8	4.2	0.7	10.4	2.5	0.8	9.5
Cycle Q Clear(g_c), s	3.4	21.7	21.7	8.6	23.8	23.8	4.2	0.7	10.4	2.5	0.8	9.5
Prop In Lane	1.00		0.18	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	1801	958	145	1850	972	128	212	180	106	189	161
V/C Ratio(X)	0.40	0.40	0.40	0.82	0.52	0.52	0.47	0.06	0.73	0.34	0.06	0.74
Avail Cap(c_a), veh/h	147	1801	958	145	1850	972	143	695	591	143	695	591
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	24.0	24.0	58.8	16.2	16.2	57.9	51.4	55.6	58.6	52.8	56.7
Incr Delay (d2), s/veh	1.9	0.6	1.1	25.9	0.9	1.7	2.7	0.1	5.5	1.9	0.1	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	9.6	10.4	5.2	10.6	11.3	2.2	0.4	4.8	1.3	0.4	4.4
LnGrp Delay(d),s/veh	61.4	24.5	25.1	84.7	17.0	17.9	60.6	51.5	61.1	60.5	52.9	63.2
LnGrp LOS	E	C	C	F	B	B	E	D	E	E	D	E
Approach Vol, veh/h	1155			1595			203			167		
Approach Delay, s/veh	26.2			22.3			60.4			61.9		
Approach LOS	C			C			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	80.8	14.6	18.8	13.9	82.7	13.0	20.4				
Change Period (Y+Rc), s	* 5.7	7.2	* 5.7	6.1	* 5.7	7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	* 10	37.2	* 10	48.0	* 10	37.0	* 10	48.0				
Max Q Clear Time (g_c+l1), s	10.6	23.7	6.2	11.5	5.4	25.8	4.5	12.4				
Green Ext Time (p_c), s	0.0	10.0	0.0	1.2	0.0	8.6	0.0	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay	28.4											
HCM 2010 LOS	C											
Notes												

HCM 2010 Signalized Intersection Summary

3: Britannia Blvd & Otay Mesa Rd

Year 2020 + Project PM
4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑↑	↑
Volume (veh/h)	650	340	30	810	700	200
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1863	1863	1727	1863	1863
Adj Flow Rate, veh/h	774	405	36	964	833	238
Adj No. of Lanes	3	1	1	3	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	10	2	2	10	2	2
Cap, veh/h	1653	1020	299	2748	1010	465
Arrive On Green	0.35	0.35	0.17	0.58	0.29	0.29
Sat Flow, veh/h	4871	1583	1774	4871	3442	1583
Grp Volume(v), veh/h	774	405	36	964	833	238
Grp Sat Flow(s),veh/h/ln	1572	1583	1774	1572	1721	1583
Q Serve(g_s), s	13.4	12.8	1.8	11.3	23.7	13.1
Cycle Q Clear(g_c), s	13.4	12.8	1.8	11.3	23.7	13.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1653	1020	299	2748	1010	465
V/C Ratio(X)	0.47	0.40	0.12	0.35	0.82	0.51
Avail Cap(c_a), veh/h	1653	1020	299	2748	1295	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.55	0.55	0.99	0.99
Uniform Delay (d), s/veh	26.5	8.9	37.1	11.5	34.6	30.8
Incr Delay (d2), s/veh	0.9	1.1	0.1	0.2	3.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	10.5	0.9	4.9	11.7	5.8
LnGrp Delay(d),s/veh	27.4	10.0	37.2	11.7	38.1	31.7
LnGrp LOS	C	A	D	B	D	C
Approach Vol, veh/h	1179			1000	1071	
Approach Delay, s/veh	21.4			12.6	36.7	
Approach LOS	C			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	24.4	43.5				67.9		37.1
Change Period (Y+Rc), s	7.2	* 7.2				7.2		6.8
Max Green Setting (Gmax), s	10.0	* 36				52.0		39.0
Max Q Clear Time (g_c+I), s	13.8	15.4				13.3		25.7
Green Ext Time (p_c), s	2.7	6.1				5.8		4.6

Intersection Summary

HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

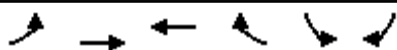
Year 2020 + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	↱		↰	↱	
Volume (veh/h)	120	610	250	70	1200	60	170	60	30	120	160	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1733	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	132	670	275	77	1319	66	187	66	33	132	176	209
Adj No. of Lanes	1	3	1	1	3	0	1	1	0	2	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	10	2	2	10	10	2	2	2	2	2	2
Cap, veh/h	296	889	298	523	1461	73	215	346	173	241	189	225
Arrive On Green	0.17	0.19	0.19	0.30	0.32	0.31	0.12	0.30	0.29	0.07	0.24	0.24
Sat Flow, veh/h	1774	4715	1583	1774	4615	231	1774	1173	586	3442	776	921
Grp Volume(v), veh/h	132	670	275	77	902	483	187	0	99	132	0	385
Grp Sat Flow(s),veh/h/ln	1774	1572	1583	1774	1577	1692	1774	0	1759	1721	0	1697
Q Serve(g_s), s	10.0	20.2	19.0	4.8	41.0	41.0	15.5	0.0	6.3	5.6	0.0	33.3
Cycle Q Clear(g_c), s	10.0	20.2	19.0	4.8	41.0	41.0	15.5	0.0	6.3	5.6	0.0	33.3
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.33	1.00		0.54
Lane Grp Cap(c), veh/h	296	889	298	523	999	536	215	0	519	241	0	414
V/C Ratio(X)	0.45	0.75	0.92	0.15	0.90	0.90	0.87	0.00	0.19	0.55	0.00	0.93
Avail Cap(c_a), veh/h	296	1613	541	523	1070	574	248	0	581	250	0	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	0.89	0.89	0.89	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.2	57.6	33.1	39.0	49.0	49.1	64.7	0.0	39.5	67.5	0.0	55.6
Incr Delay (d2), s/veh	1.0	5.6	34.0	0.1	11.7	19.2	23.7	0.0	0.2	2.3	0.0	25.3
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	5.0	9.2	11.1	2.4	19.5	22.1	9.1	0.0	3.1	2.7	0.0	18.5
LnGrp Delay(d),s/veh	57.2	63.1	67.1	39.1	60.7	68.3	88.4	0.0	39.7	69.8	0.0	80.9
LnGrp LOS	E	E	E	D	E	E	F		D	E		F
Approach Vol, veh/h	1077			1462			286			517		
Approach Delay, s/veh	63.4			62.1			71.5			78.1		
Approach LOS	E			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	49.5	35.0	23.4	42.2	30.2	54.2	15.7	49.9				
Change Period (Y+Rc), s	5.7	* 7.2	* 5.7	6.1	5.7	* 7.2	* 5.7	6.1				
Max Green Setting (Gmax), s	15.1	* 51	* 21	38.9	15.5	* 50	* 10	49.0				
Max Q Clear Time (g_c+10), s	10.8	22.2	17.5	35.3	12.0	43.0	7.6	8.3				
Green Ext Time (p_c), s	0.5	5.0	0.2	0.8	0.2	4.0	0.1	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay	65.8											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary

5: Otay Mesa Rd & Piper Ranch Rd

Year 2020 + Project PM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Volume (veh/h)	40	860	1330	20	110	220		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1727	1863	1863	1863		
Adj Flow Rate, veh/h	45	977	1511	23	125	250		
Adj No. of Lanes	1	2	3	1	1	2		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88		
Percent Heavy Veh, %	2	10	10	2	2	2		
Cap, veh/h	569	2483	1729	767	209	373		
Arrive On Green	0.32	0.76	0.37	0.37	0.12	0.12		
Sat Flow, veh/h	1774	3368	4871	1583	1774	3167		
Grp Volume(v), veh/h	45	977	1511	23	125	250		
Grp Sat Flow(s),veh/h/ln	1774	1641	1572	1583	1774	1583		
Q Serve(g_s), s	1.6	9.3	26.9	0.7	6.0	6.8		
Cycle Q Clear(g_c), s	1.6	9.3	26.9	0.7	6.0	6.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	569	2483	1729	767	209	373		
V/C Ratio(X)	0.08	0.39	0.87	0.03	0.60	0.67		
Avail Cap(c_a), veh/h	569	2483	1729	767	710	1267		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.83	0.83	0.89	0.89	1.00	1.00		
Uniform Delay (d), s/veh	21.3	3.8	26.6	12.1	37.7	38.0		
Incr Delay (d2), s/veh	0.0	0.4	5.8	0.1	2.7	2.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	4.2	12.5	0.4	3.1	6.0		
LnGrp Delay(d),s/veh	21.3	4.2	32.4	12.2	40.4	40.1		
LnGrp LOS	C	A	C	B	D	D		
Approach Vol, veh/h		1022	1534		375			
Approach Delay, s/veh		4.9	32.1		40.2			
Approach LOS		A	C		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		74.3		15.7	35.1	39.2		
Change Period (Y+Rc), s		6.2		5.1	6.2	* 6.2		
Max Green Setting (Gmax), s		42.7		36.0	5.0	* 33		
Max Q Clear Time (g_c+l1), s		11.3		8.8	3.6	28.9		
Green Ext Time (p_c), s		5.8		1.8	0.8	2.8		
Intersection Summary								
HCM 2010 Ctrl Delay		23.7						
HCM 2010 LOS		C						

Notes

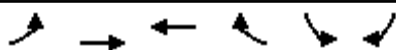
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

6: Otay Mesa Rd & SR125 SB Off-Ramp

Year 2020 + Project PM

4/7/2016

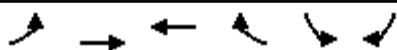


Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑↑	↑↑↑↑		↘↘	↗		
Volume (veh/h)	0	1080	1370	0	150	70		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1727	1727	0	1863	1863		
Adj Flow Rate, veh/h	0	1137	1442	0	158	74		
Adj No. of Lanes	0	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	10	10	0	2	2		
Cap, veh/h	0	3056	3056	0	365	168		
Arrive On Green	0.00	0.65	0.65	0.00	0.11	0.11		
Sat Flow, veh/h	0	5026	5026	0	3442	1583		
Grp Volume(v), veh/h	0	1137	1442	0	158	74		
Grp Sat Flow(s),veh/h/ln	0	1572	1572	0	1721	1583		
Q Serve(g_s), s	0.0	5.6	7.8	0.0	2.2	2.2		
Cycle Q Clear(g_c), s	0.0	5.6	7.8	0.0	2.2	2.2		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	3056	3056	0	365	168		
V/C Ratio(X)	0.00	0.37	0.47	0.00	0.43	0.44		
Avail Cap(c_a), veh/h	0	3056	3056	0	785	361		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	0.91	0.28	0.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	4.1	4.5	0.0	20.9	21.0		
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	0.8	1.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.5	3.4	0.0	1.1	1.0		
LnGrp Delay(d),s/veh	0.0	4.4	4.6	0.0	21.8	22.8		
LnGrp LOS		A	A		C	C		
Approach Vol, veh/h		1137	1442		232			
Approach Delay, s/veh		4.4	4.6		22.1			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		39.1		10.9		39.1		
Change Period (Y+Rc), s		7.2		6.1		7.2		
Max Green Setting (Gmax), s		25.8		10.9		25.8		
Max Q Clear Time (g_c+l1), s		7.6		4.2		9.8		
Green Ext Time (p_c), s		13.1		0.5		11.9		
Intersection Summary								
HCM 2010 Ctrl Delay			6.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

7: Otay Mesa Rd & SR125 NB On-Ramp

Year 2020 + Project PM
4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LT	TH	TH	TH	LT	TH
Volume (veh/h)	150	1880	2170	1100	0	0
Number	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1745	1863		
Adj Flow Rate, veh/h	158	1979	2730	860		
Adj No. of Lanes	2	2	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	10	10	2		
Cap, veh/h	399	14448	21766	6581		
Arrive On Green	0.12	1.00	1.00	1.00		
Sat Flow, veh/h	3442	3368	5236	1583		
Grp Volume(v), veh/h	158	1979	2730	860		
Grp Sat Flow(s),veh/h/ln	1721	1641	1745	1583		
Q Serve(g_s), s	1.7	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	1.7	0.0	0.0	0.0		
Prop In Lane	1.00			1.00		
Lane Grp Cap(c), veh/h	399	14448	21766	6581		
V/C Ratio(X)	0.40	0.14	0.13	0.13		
Avail Cap(c_a), veh/h	473	14448	21766	6581		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.94	0.94	1.00	1.00		
Uniform Delay (d), s/veh	16.4	0.0	0.0	0.0		
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.1		
LnGrp Delay(d),s/veh	17.0	0.0	0.0	0.0		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2137	3590			
Approach Delay, s/veh		1.3	0.0			
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		187.0			9.8	177.2		
Change Period (Y+Rc), s		* 7.2			* 5.7	7.2		
Max Green Setting (Gmax), s		* 37			* 5	22.1		
Max Q Clear Time (g_c+l1), s		2.0			3.7	2.0		
Green Ext Time (p_c), s		34.5			0.1	19.9		

Intersection Summary								
HCM 2010 Ctrl Delay			0.5					
HCM 2010 LOS			A					

Notes
User approved volume balancing among the lanes for turning movement.

Intersection												
Int Delay, s/veh	385.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	650	1670	20	10	2130	110	10	10	10	100	10	490
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	691	1777	21	11	2266	117	11	11	11	106	11	521
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2383	0	0	1798	0	0	4330	5574	899	4623	5527	1191
Stage 1	-	-	-	-	-	-	3170	3170	-	2346	2346	-
Stage 2	-	-	-	-	-	-	1160	2404	-	2277	3181	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	~ 200	-	-	339	-	-	~ 1	0	282	0	0	~ 180
Stage 1	-	-	-	-	-	-	~ 10	25	-	~ 37	68	-
Stage 2	-	-	-	-	-	-	208	64	-	~ 41	25	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 200	-	-	339	-	-	-	0	282	0	0	~ 180
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	0	0	-
Stage 1	-	-	-	-	-	-	~ 10	25	-	~ 37	68	-
Stage 2	-	-	-	-	-	-	-	64	-	~ 23	25	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	\$ 551.9			0.1						\$ 1198		
HCM LOS							-			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	-	282	~ 200	-	-	339	-	-	180			
HCM Lane V/C Ratio	-	0.075	3.457	-	-	0.031	-	-	3.546			
HCM Control Delay (s)	-	18.3	1153.6	324.3	-	16	0	-	\$ 1198			
HCM Lane LOS	-	C	F	F	-	C	A	-	F			
HCM 95th %tile Q(veh)	-	0.2	65.4	-	-	0.1	-	-	61.2			
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 2010 Signalized Intersection Summary

9: Sanyo Ave & Otay Mesa Rd

Year 2020 + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	540	1100	180	70	1550	80	330	80	70	50	110	400
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1779	1900	1863	1734	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	587	1170	191	74	1649	87	256	220	74	54	120	435
Adj No. of Lanes	0	2	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.94	0.94	0.94	0.94	0.92	0.94	0.92	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	298	1508	343	74	1887	100	132	423	142	54	65	217
Arrive On Green	0.35	0.35	0.35	0.04	1.00	1.00	0.07	0.32	0.32	0.19	0.19	0.19
Sat Flow, veh/h	235	1414	321	1774	1632	86	1774	1335	449	111	341	1131
Grp Volume(v), veh/h	1019	0	929	74	0	1736	256	0	294	609	0	0
Grp Sat Flow(s),veh/h/ln	408	0	1562	1774	0	1718	1774	0	1784	1583	0	0
Q Serve(g_s), s	1.2	0.0	0.0	5.0	0.0	0.0	8.9	0.0	16.2	18.4	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	5.0	0.0	0.0	8.9	0.0	16.2	23.0	0.0	0.0
Prop In Lane	0.58		0.21	1.00		0.05	1.00		0.25	0.09		0.71
Lane Grp Cap(c), veh/h	483	0	1666	74	0	1986	132	0	565	336	0	0
V/C Ratio(X)	2.11	0.00	0.56	1.00	0.00	0.87	1.95	0.00	0.52	1.81	0.00	0.00
Avail Cap(c_a), veh/h	483	0	1666	74	0	1986	132	0	565	336	0	0
HCM Platoon Ratio	0.33	0.33	0.33	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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	57.5	0.0	0.0	55.5	0.0	33.5	49.5	0.0	0.0
Incr Delay (d2), s/veh	507.3	0.0	1.4	105.0	0.0	5.7	452.0	0.0	0.9	377.0	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	68.0	0.0	0.6	4.6	0.0	3.2	20.9	0.0	8.1	46.3	0.0	0.0
LnGrp Delay(d),s/veh	507.4	0.0	1.4	162.5	0.0	5.7	507.6	0.0	34.4	426.6	0.0	0.0
LnGrp LOS	F		A	F		A	F		C	F		
Approach Vol, veh/h	1948			1810			550			609		
Approach Delay, s/veh	266.1			12.1			254.7			426.6		
Approach LOS	F			B			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5		6	8				
Phs Duration (G+Y+Rc), s	10.7	136.9	15.0	29.1	147.6		44.1					
Change Period (Y+Rc), s	* 5.7	7.2	6.1	* 6.1	7.2		6.1					
Max Green Setting (Gmax), s	* 5	60.1	8.9	* 23	70.8		35.9					
Max Q Clear Time (g_c+l1), s	7.0	5.2	10.9	25.0	2.0		18.2					
Green Ext Time (p_c), s	0.0	54.5	0.0	0.0	68.2		6.2					
Intersection Summary												
HCM 2010 Ctrl Delay	191.2											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

Intersection						
Int Delay, s/veh	3303.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	600	620	1210	190	230	470
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	92	92	92	92	92	92
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	652	674	1315	207	250	511
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1522	0	-	0	3396	1418
Stage 1	-	-	-	-	1418	-
Stage 2	-	-	-	-	1978	-
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	~ 438	-	-	-	~ 8	~ 168
Stage 1	-	-	-	-	~ 224	-
Stage 2	-	-	-	-	~ 118	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 438	-	-	-	~ 8	~ 168
Mov Cap-2 Maneuver	-	-	-	-	~ 8	-
Stage 1	-	-	-	-	~ 224	-
Stage 2	-	-	-	-	~ 118	-
Approach	EB		WB		SB	
HCM Control Delay, s	125.9		0		\$ 15448.5	
HCM LOS					F	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	~ 438	-	-	-	22	
HCM Lane V/C Ratio	1.489	-	-	-	34.585	
HCM Control Delay (s)	255.9	0	-	-	\$ 15448.5	
HCM Lane LOS	F	A	-	-	F	
HCM 95th %tile Q(veh)	34	-	-	-	95.4	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 2010 Signalized Intersection Summary
11: Enrico Fermi Rd & Otay Mesa Rd

Year 2020 + Project PM
4/7/2016

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Volume (veh/h)	300	120	230	210	100	420		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1764	1900	1863	1727	1863	1863		
Adj Flow Rate, veh/h	380	152	291	266	127	532		
Adj No. of Lanes	1	0	1	1	1	1		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79		
Percent Heavy Veh, %	10	10	2	10	2	2		
Cap, veh/h	429	172	334	1028	555	487		
Arrive On Green	0.36	0.35	0.19	0.60	0.31	0.31		
Sat Flow, veh/h	1199	480	1774	1727	1774	1583		
Grp Volume(v), veh/h	0	532	291	266	127	532		
Grp Sat Flow(s),veh/h/ln	0	1679	1774	1727	1774	1583		
Q Serve(g_s), s	0.0	29.1	15.5	7.2	5.2	30.0		
Cycle Q Clear(g_c), s	0.0	29.1	15.5	7.2	5.2	30.0		
Prop In Lane		0.29	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	0	600	334	1028	555	487		
V/C Ratio(X)	0.00	0.89	0.87	0.26	0.23	1.09		
Avail Cap(c_a), veh/h	0	818	513	1425	555	487		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	29.5	38.4	9.5	24.8	33.8		
Incr Delay (d2), s/veh	0.0	9.0	10.0	0.1	0.2	68.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	14.9	8.5	3.4	2.6	22.3		
LnGrp Delay(d),s/veh	0.0	38.5	48.4	9.6	25.0	102.1		
LnGrp LOS		D	D	A	C	F		
Approach Vol, veh/h	532			557	659			
Approach Delay, s/veh	38.5			29.9	87.3			
Approach LOS	D			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	23.2	40.4				63.6		34.0
Change Period (Y+Rc), s	4.8	6.0				6.0		4.0
Max Green Setting (Gmax), s	28.2	47.0				80.0		30.0
Max Q Clear Time (g_c+I1), s	17.5	31.1				9.2		32.0
Green Ext Time (p_c), s	0.9	3.3				3.9		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			54.1					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary

12: Britannia Blvd & SR-905 WB Ramps

Year 2020 + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	70	10	120	570	270	0	0	300	260
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1810	1796	1810	1810	1727	0	0	1764	1900
Adj Flow Rate, veh/h				90	0	163	731	346	0	0	385	333
Adj No. of Lanes				1	0	2	2	3	0	0	3	0
Peak Hour Factor				0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %				5	10	5	5	10	0	0	10	10
Cap, veh/h				136	0	242	859	3810	0	0	1602	748
Arrive On Green				0.08	0.00	0.08	0.26	0.81	0.00	0.00	0.50	0.50
Sat Flow, veh/h				1723	0	3076	3343	4871	0	0	3370	1500
Grp Volume(v), veh/h				90	0	163	731	346	0	0	385	333
Grp Sat Flow(s),veh/h/ln				1723	0	1538	1672	1572	0	0	1606	1500
Q Serve(g_s), s				4.6	0.0	4.6	18.7	1.4	0.0	0.0	6.1	12.9
Cycle Q Clear(g_c), s				4.6	0.0	4.6	18.7	1.4	0.0	0.0	6.1	12.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				136	0	242	859	3810	0	0	1602	748
V/C Ratio(X)				0.66	0.00	0.67	0.85	0.09	0.00	0.00	0.24	0.45
Avail Cap(c_a), veh/h				247	0	441	1237	3810	0	0	1602	748
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.73	0.73	0.00	0.00	0.97	0.97
Uniform Delay (d), s/veh				40.3	0.0	40.3	31.8	1.8	0.0	0.0	12.8	14.5
Incr Delay (d2), s/veh				5.5	0.0	3.3	3.0	0.0	0.0	0.0	0.3	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	2.1	9.0	0.6	0.0	0.0	2.8	5.7
LnGrp Delay(d),s/veh				45.8	0.0	43.6	34.8	1.8	0.0	0.0	13.2	16.4
LnGrp LOS				D		D	C	A			B	B
Approach Vol, veh/h				253			1077			718		
Approach Delay, s/veh				44.4			24.2			14.7		
Approach LOS				D			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		77.8			27.8	50.0		12.2				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		66.9			* 33	28.9		12.9				
Max Q Clear Time (g_c+I1), s		3.4			20.7	14.9		6.6				
Green Ext Time (p_c), s		9.7			2.4	6.2		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			23.3									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

13: Britannia Blvd & SR-905 EB Ramps

Year 2020 + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	10	240	0	0	0	0	730	150	150	210	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1802	1810				0	1741	1900	1810	1727	0
Adj Flow Rate, veh/h	143	13	312				0	948	195	195	273	0
Adj No. of Lanes	0	1	2				0	2	0	2	3	0
Peak Hour Factor	0.77	0.77	0.77				0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	5	10	5				0	10	10	5	10	0
Cap, veh/h	232	21	398				0	1597	328	277	3422	0
Arrive On Green	0.15	0.15	0.15				0.00	0.58	0.58	0.08	0.73	0.00
Sat Flow, veh/h	1580	144	2707				0	2820	562	3343	4871	0
Grp Volume(v), veh/h	156	0	312				0	573	570	195	273	0
Grp Sat Flow(s),veh/h/ln	1723	0	1354				0	1654	1641	1672	1572	0
Q Serve(g_s), s	6.8	0.0	8.9				0.0	17.6	17.7	4.5	1.3	0.0
Cycle Q Clear(g_c), s	6.8	0.0	8.9				0.0	17.6	17.7	4.5	1.3	0.0
Prop In Lane	0.92		1.00				0.00		0.34	1.00		0.00
Lane Grp Cap(c), veh/h	253	0	398				0	966	959	277	3422	0
V/C Ratio(X)	0.62	0.00	0.78				0.00	0.59	0.59	0.70	0.08	0.00
Avail Cap(c_a), veh/h	321	0	504				0	966	959	389	3422	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	32.0	0.0	32.9				0.0	10.6	10.6	35.7	3.2	0.0
Incr Delay (d2), s/veh	2.4	0.0	6.2				0.0	2.7	2.7	3.1	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
%ile BackOfQ(50%),veh/ln	3.4	0.0	3.7				0.0	8.7	8.6	2.2	0.6	0.0
LnGrp Delay(d),s/veh	34.4	0.0	39.1				0.0	13.3	13.3	38.9	3.2	0.0
LnGrp LOS	C		D					B	B	D	A	
Approach Vol, veh/h		468						1143			468	
Approach Delay, s/veh		37.6						13.3			18.1	
Approach LOS		D						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	11.3	51.8		16.8		63.2						
Change Period (Y+Rc), s	4.7	5.1		5.1		5.1						
Max Green Setting (Gmax), s	40.3	40.9		14.9		54.9						
Max Q Clear Time (g_c+I), s	19.5	19.7		10.9		3.3						
Green Ext Time (p_c), s	0.2	10.3		0.9		14.3						
Intersection Summary												
HCM 2010 Ctrl Delay			19.8									
HCM 2010 LOS			B									
Notes												

HCM 2010 Signalized Intersection Summary
 14: La Media Rd & St Andrews Ave/SR-905 WB Ramps

Year 2020 + Project PM
 4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	80	20	20	100	80	420	320	0	790	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1800	1900	1810	1734	1810	1810	1727	1810	0	1727	1810
Adj Flow Rate, veh/h	11	11	86	22	22	108	86	452	344	0	849	22
Adj No. of Lanes	1	1	0	1	1	1	2	2	1	0	3	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	10	10	5	10	5	5	10	5	0	10	5
Cap, veh/h	138	14	110	156	157	140	164	2164	1013	0	2632	858
Arrive On Green	0.08	0.08	0.08	0.09	0.09	0.09	0.10	1.00	1.00	0.00	0.56	0.56
Sat Flow, veh/h	1723	176	1380	1723	1734	1538	3343	3282	1536	0	4871	1538
Grp Volume(v), veh/h	11	0	97	22	22	108	86	452	344	0	849	22
Grp Sat Flow(s),veh/h/ln	1723	0	1556	1723	1734	1538	1672	1641	1536	0	1572	1538
Q Serve(g_s), s	0.5	0.0	5.5	1.1	1.1	6.2	2.2	0.0	0.0	0.0	8.7	0.6
Cycle Q Clear(g_c), s	0.5	0.0	5.5	1.1	1.1	6.2	2.2	0.0	0.0	0.0	8.7	0.6
Prop In Lane	1.00		0.89	1.00		1.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	138	0	124	156	157	140	164	2164	1013	0	2632	858
V/C Ratio(X)	0.08	0.00	0.78	0.14	0.14	0.77	0.52	0.21	0.34	0.00	0.32	0.03
Avail Cap(c_a), veh/h	247	0	223	247	249	220	308	2164	1013	0	2632	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.00	0.71	0.71
Uniform Delay (d), s/veh	38.3	0.0	40.6	37.7	37.7	40.0	39.6	0.0	0.0	0.0	10.7	8.9
Incr Delay (d2), s/veh	0.2	0.0	10.1	0.4	0.4	8.7	2.5	0.2	0.9	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.7	0.5	0.5	3.0	1.1	0.1	0.2	0.0	3.8	0.3
LnGrp Delay(d),s/veh	38.6	0.0	50.8	38.1	38.1	48.8	42.1	0.2	0.9	0.0	10.9	9.0
LnGrp LOS	D		D	D	D	D	D	A	A		B	A
Approach Vol, veh/h	108				152				882		871	
Approach Delay, s/veh	49.5				45.7				4.5		10.9	
Approach LOS	D				D				A		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	64.4		12.3		9.1		55.3		13.3			
Change Period (Y+Rc), s	5.1		5.1		* 4.7		5.1		5.1			
Max Green Setting (Gmax), s	48.9		12.9		* 8.3		35.9		12.9			
Max Q Clear Time (g_c+I1), s	2.0		7.5		4.2		10.7		8.2			
Green Ext Time (p_c), s	15.3		0.2		0.1		12.1		0.2			
Intersection Summary												
HCM 2010 Ctrl Delay	12.8											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

15: La Media Rd & SR-905 EB Ramps

Year 2020 + Project PM

4/7/2016

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	290	170	30	540	220	250		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1810	1810	1727	1727	1810		
Adj Flow Rate, veh/h	312	183	32	581	237	269		
Adj No. of Lanes	2	2	2	3	2	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	5	5	5	10	10	5		
Cap, veh/h	430	348	102	3574	2216	1236		
Arrive On Green	0.13	0.13	0.03	0.76	0.22	0.22		
Sat Flow, veh/h	3343	2707	3343	4871	3368	1538		
Grp Volume(v), veh/h	312	183	32	581	237	269		
Grp Sat Flow(s),veh/h/ln	1672	1354	1672	1572	1641	1538		
Q Serve(g_s), s	8.1	5.7	0.8	3.1	5.2	7.8		
Cycle Q Clear(g_c), s	8.1	5.7	0.8	3.1	5.2	7.8		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	430	348	102	3574	2216	1236		
V/C Ratio(X)	0.73	0.53	0.31	0.16	0.11	0.22		
Avail Cap(c_a), veh/h	814	659	271	3574	2216	1236		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.97	0.97		
Uniform Delay (d), s/veh	37.7	36.6	42.7	3.0	13.4	6.0		
Incr Delay (d2), s/veh	2.3	1.2	1.7	0.1	0.1	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	4.3	0.4	1.3	2.4	5.7		
LnGrp Delay(d),s/veh	40.0	37.9	44.4	3.1	13.5	6.4		
LnGrp LOS	D	D	D	A	B	A		
Approach Vol, veh/h	495			613	506			
Approach Delay, s/veh	39.2			5.3	9.7			
Approach LOS	D			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		73.3		16.7	7.5	65.9		
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		
Max Green Setting (Gmax), s		57.9		21.9	* 7.3	45.9		
Max Q Clear Time (g_c+l1), s		5.1		10.1	2.8	9.8		
Green Ext Time (p_c), s		8.2		1.5	0.0	7.9		
Intersection Summary								
HCM 2010 Ctrl Delay			17.1					
HCM 2010 LOS			B					
Notes								

Intersection

Intersection Delay, s/veh64.3

Intersection LOS F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	30	100	50	0	10	240	570	0	70	450	60	0	240	300	130
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10	5
Mvmt Flow	0	35	118	59	0	12	282	671	0	82	529	71	0	282	353	153
Number of Lanes	0	0	1	0	0	1	2	0	0	1	1	0	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	1
HCM Control Delay	31.5	62	72.7	68.7
HCM LOS	D	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	17%	100%	0%	0%	44%	0%
Vol Thru, %	0%	88%	56%	0%	100%	12%	56%	0%
Vol Right, %	0%	12%	28%	0%	0%	88%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	510	180	10	160	650	540	130
LT Vol	70	0	30	10	0	0	240	0
Through Vol	0	450	100	0	160	80	300	0
RT Vol	0	60	50	0	0	570	0	130
Lane Flow Rate	82	600	212	12	188	765	635	153
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.242	1	0.643	0.031	0.48	1	1	0.398
Departure Headway (Hd)	10.591	10.095	10.93	9.595	9.181	8.483	10.203	9.368
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	339	366	332	374	393	436	362	385
Service Time	8.342	7.846	8.667	7.323	6.908	6.21	7.948	7.113
HCM Lane V/C Ratio	0.242	1.639	0.639	0.032	0.478	1.755	1.754	0.397
HCM Control Delay	16.7	80.4	31.5	12.6	20.1	73.1	80.9	18.2
HCM Lane LOS	C	F	D	B	C	F	F	C
HCM 95th-tile Q	0.9	11.5	4.2	0.1	2.5	12.6	11.5	1.9

Intersection												
Int Delay, s/veh	784.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	70	100	240	60	300	20	580	70	230	10	70	60
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	3	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	150	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	5	10	5	5	10	5	5	10	5	5	10	5
Mvmt Flow	88	125	300	75	375	25	725	88	288	12	88	75
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	428	0	0	837	1006	216	825	1144	204
Stage 1	-	-	-	-	-	-	453	453	-	541	541	-
Stage 2	-	-	-	-	-	-	384	553	-	284	603	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.6	6.7	7	7.6	6.7	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.7	-	6.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.7	-	6.6	5.7	-
Follow-up Hdwy	2.25	-	-	2.25	-	-	3.55	4.1	3.35	3.55	4.1	3.35
Pot Cap-1 Maneuver	1131	-	-	1107	-	-	~ 254	227	779	260	187	794
Stage 1	-	-	-	-	-	-	~ 548	549	-	485	499	-
Stage 2	-	-	-	-	-	-	~ 603	493	-	691	467	-
Platoon blocked, %												
Mov Cap-1 Maneuver	1130	-	-	1107	-	-	~ 117	194	777	95	160	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 117	194	-	95	160	-
Stage 1	-	-	-	-	-	-	~ 504	505	-	446	464	-
Stage 2	-	-	-	-	-	-	~ 413	458	-	332	430	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			1.3			\$ 1602.3			60.3		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	117	457	1130	-	-	1107	-	-	226			
HCM Lane V/C Ratio	6.197	0.821	0.077	-	-	0.068	-	-	0.774			
HCM Control Delay (s)	\$ 2410.4	39.9	8.5	-	-	8.5	-	-	60.3			
HCM Lane LOS	F	E	A	-	-	A	-	-	F			
HCM 95th %tile Q(veh)	79.4	7.8	0.3	-	-	0.2	-	-	5.5			
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 2010 Signalized Intersection Summary

18: Enrico Fermi Rd & Airway Rd

Year 2020 + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	190	40	40	60	70	170	140	410	70	70	270	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1727	1810	1810	1727	1810	1810	1739	1900	1810	1742	1900
Adj Flow Rate, veh/h	250	53	53	79	92	224	184	539	92	92	355	79
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	5	10	5	5	10	5	5	10	10	5	10	10
Cap, veh/h	320	541	712	101	335	298	245	801	136	118	587	129
Arrive On Green	0.19	0.31	0.32	0.06	0.19	0.19	0.14	0.28	0.28	0.07	0.22	0.22
Sat Flow, veh/h	1723	1727	1538	1723	1727	1538	1723	2823	480	1723	2698	594
Grp Volume(v), veh/h	250	53	53	79	92	224	184	315	316	92	216	218
Grp Sat Flow(s),veh/h/ln	1723	1727	1538	1723	1727	1538	1723	1652	1651	1723	1655	1637
Q Serve(g_s), s	9.2	1.5	1.3	3.0	3.0	9.2	6.9	11.3	11.4	3.5	7.9	8.0
Cycle Q Clear(g_c), s	9.2	1.5	1.3	3.0	3.0	9.2	6.9	11.3	11.4	3.5	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		0.36
Lane Grp Cap(c), veh/h	320	541	712	101	335	298	245	469	469	118	360	356
V/C Ratio(X)	0.78	0.10	0.07	0.78	0.27	0.75	0.75	0.67	0.68	0.78	0.60	0.61
Avail Cap(c_a), veh/h	645	1166	1268	330	863	769	508	803	803	289	607	600
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	25.9	16.2	10.0	31.0	22.9	25.4	27.5	21.2	21.3	30.6	23.5	23.6
Incr Delay (d2), s/veh	4.2	0.1	0.0	12.1	0.4	3.8	4.6	1.7	1.7	10.5	1.6	1.7
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	4.7	0.7	0.6	1.8	1.5	4.2	3.6	5.3	5.4	2.0	3.8	3.8
LnGrp Delay(d),s/veh	30.1	16.3	10.0	43.1	23.4	29.2	32.1	22.8	23.0	41.1	25.1	25.3
LnGrp LOS	C	B	B	D	C	C	C	C	C	D	C	C
Approach Vol, veh/h		356			395			815			526	
Approach Delay, s/veh		25.0			30.6			25.0			28.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	25.5	13.8	20.0	15.4	17.6	9.4	24.5				
Change Period (Y+Rc), s	3.5	4.6	4.8	6.0	3.5	4.6	4.8	6.0				
Max Green Setting (Gmax), s	12.8	45.1	19.2	24.0	24.5	33.4	11.2	32.0				
Max Q Clear Time (g_c+l1), s	5.0	3.5	8.9	10.0	11.2	11.2	5.5	13.4				
Green Ext Time (p_c), s	0.1	1.9	0.5	4.0	0.8	1.8	0.1	4.5				
Intersection Summary												
HCM 2010 Ctrl Delay			26.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 19: SR 905 SB Ramps & Siempre Viva Road/Siempre Viva

Year 2020 + Project PM
 4/7/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵↵	↑↑↑	↵	↵↵
Volume (veh/h)	970	700	830	310	0	470
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1801	1900	1863	1759	1863	1863
Adj Flow Rate, veh/h	1066	769	912	341	0	516
Adj No. of Lanes	3	0	2	3	1	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	8	8	2	8	2	2
Cap, veh/h	2098	980	792	4371	319	502
Arrive On Green	0.64	0.63	0.38	1.00	0.00	0.18
Sat Flow, veh/h	3440	1531	3442	4961	1774	2787
Grp Volume(v), veh/h	1066	769	912	341	0	516
Grp Sat Flow(s), veh/h/ln	1639	1531	1721	1601	1774	1393
Q Serve(g_s), s	17.3	36.5	23.0	0.0	0.0	18.0
Cycle Q Clear(g_c), s	17.3	36.5	23.0	0.0	0.0	18.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2098	980	792	4371	319	502
V/C Ratio(X)	0.51	0.78	1.15	0.08	0.00	1.03
Avail Cap(c_a), veh/h	2098	980	792	4371	319	502
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	13.2	30.8	0.0	0.0	41.0
Incr Delay (d2), s/veh	0.9	6.3	82.7	0.0	0.0	47.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	16.9	19.9	0.0	0.0	10.2
LnGrp Delay(d),s/veh	10.5	19.5	113.5	0.0	0.0	88.7
LnGrp LOS	B	B	F	A		F
Approach Vol, veh/h	1835			1253	516	
Approach Delay, s/veh	14.3			82.6	88.7	
Approach LOS	B			F	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	27.0	68.5				95.5		22.0
Change Period (Y+Rc), s	4.0	4.5				* 4.5		4.0
Max Green Setting (Gmax), s	23.0	46.5				* 74		18.0
Max Q Clear Time (g_c+2.0), s	23.0	38.5				2.0		20.0
Green Ext Time (p_c), s	0.0	6.1				20.7		0.0

Intersection Summary

HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

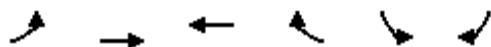
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM Unsignalized Intersection Capacity Analysis

20: Siempre Viva /Siempre Viva Road & SR905 SB Off-Ramp

Year 2020 + Project PM

4/7/2016



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↑↑↑↑	↑↑↑↑			↗	
Volume (veh/h)	0	1440	640	0	0	500	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	0	1548	688	0	0	538	
Pedestrians					5		
Lane Width (ft)					12.0		
Walking Speed (ft/s)					4.0		
Percent Blockage					0		
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)		281	733				
pX, platoon unblocked							
vC, conflicting volume	693				1209	234	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	693				1209	234	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	100				100	30	
cM capacity (veh/h)	894				175	764	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	516	516	516	229	229	229	538
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	538
cSH	1700	1700	1700	1700	1700	1700	764
Volume to Capacity	0.30	0.30	0.30	0.13	0.13	0.13	0.70
Queue Length 95th (ft)	0	0	0	0	0	0	147
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	20.1
Lane LOS							C
Approach Delay (s)	0.0			0.0			20.1
Approach LOS							C
Intersection Summary							
Average Delay			3.9				
Intersection Capacity Utilization			74.6%		ICU Level of Service		D
Analysis Period (min)			15				

HCM 2010 Signalized Intersection Summary
21: SR 905 NB Ramps & Siempre Viva Road

Year 2020 + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  				 			
Volume (veh/h)	600	840	0	0	530	900	110	10	440	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1759	0	0	1805	1863	1900	1863	1863			
Adj Flow Rate, veh/h	652	913	0	0	576	978	120	11	478			
Adj No. of Lanes	2	3	0	0	2	2	0	1	2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	8	0	0	8	2	2	2	2			
Cap, veh/h	1188	3315	0	0	1062	925	355	33	607			
Arrive On Green	0.23	0.46	0.00	0.00	0.29	0.29	0.21	0.22	0.22			
Sat Flow, veh/h	3442	4961	0	0	3611	3145	1632	150	2787			
Grp Volume(v), veh/h	652	913	0	0	576	978	131	0	478			
Grp Sat Flow(s),veh/h/ln	1721	1601	0	0	1805	1573	1781	0	1393			
Q Serve(g_s), s	16.7	11.7	0.0	0.0	13.4	29.4	6.2	0.0	16.2			
Cycle Q Clear(g_c), s	16.7	11.7	0.0	0.0	13.4	29.4	6.2	0.0	16.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.92		1.00			
Lane Grp Cap(c), veh/h	1188	3315	0	0	1062	925	388	0	607			
V/C Ratio(X)	0.55	0.28	0.00	0.00	0.54	1.06	0.34	0.00	0.79			
Avail Cap(c_a), veh/h	1188	3315	0	0	1062	925	720	0	1126			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	1.00	0.00	1.00			
Uniform Delay (d), s/veh	31.6	11.5	0.0	0.0	29.7	35.3	33.2	0.0	36.9			
Incr Delay (d2), s/veh	0.5	0.2	0.0	0.0	0.2	28.8	0.5	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.1	5.2	0.0	0.0	6.7	16.4	3.1	0.0	6.4			
LnGrp Delay(d),s/veh	32.1	11.7	0.0	0.0	29.8	64.1	33.7	0.0	39.3			
LnGrp LOS	C	B			C	F	C		D			
Approach Vol, veh/h	1565				1554			609				
Approach Delay, s/veh	20.2				51.4			38.1				
Approach LOS	C				D			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5		6					
Phs Duration (G+Y+Rc), s	73.6				39.6		34.0					
Change Period (Y+Rc), s	5.1				5.1		* 5.1					
Max Green Setting (Gmax), s	49.9				16.3		* 29					
Max Q Clear Time (g_c+l1), s	13.7				18.7		31.4					
Green Ext Time (p_c), s	10.1				0.0		0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	36.1											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
22: Paseo De Las Americas & Siempre Viva Road

Year 2020 + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	620	490	70	40	640	320	330	310	40	80	80	350
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1863	1792	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	689	544	78	44	711	356	367	344	44	89	89	389
Adj No. of Lanes	1	3	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	2	2	8	8	2	2	2	2	2	2
Cap, veh/h	349	2191	720	64	648	324	137	941	119	119	512	450
Arrive On Green	0.20	0.46	0.46	0.04	0.30	0.29	0.08	0.30	0.30	0.07	0.29	0.28
Sat Flow, veh/h	1774	4803	1579	1774	2192	1097	1774	3146	398	1774	1770	1557
Grp Volume(v), veh/h	689	544	78	44	552	515	367	192	196	89	89	389
Grp Sat Flow(s),veh/h/ln	1774	1601	1579	1774	1703	1586	1774	1770	1775	1774	1770	1557
Q Serve(g_s), s	23.1	8.2	3.3	2.9	34.7	34.7	9.1	10.0	10.2	5.8	4.4	27.8
Cycle Q Clear(g_c), s	23.1	8.2	3.3	2.9	34.7	34.7	9.1	10.0	10.2	5.8	4.4	27.8
Prop In Lane	1.00		1.00	1.00		0.69	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	349	2191	720	64	503	468	137	529	531	119	512	450
V/C Ratio(X)	1.97	0.25	0.11	0.69	1.10	1.10	2.67	0.36	0.37	0.74	0.17	0.86
Avail Cap(c_a), veh/h	349	2191	720	98	503	468	137	529	531	166	550	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	19.6	18.3	56.0	41.4	41.5	54.2	32.4	32.4	53.8	31.3	39.8
Incr Delay (d2), s/veh	448.8	0.1	0.1	12.4	69.4	71.2	771.9	0.4	0.4	10.9	0.2	14.3
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	54.7	3.6	1.5	1.6	25.9	24.4	33.9	5.0	5.1	3.2	2.2	13.8
LnGrp Delay(d),s/veh	496.0	19.6	18.3	68.4	110.8	112.7	826.0	32.8	32.9	64.7	31.4	54.1
LnGrp LOS	F	B	B	E	F	F	F	C	C	E	C	D
Approach Vol, veh/h	1311			1111			755			567		
Approach Delay, s/veh	269.9			110.0			418.4			52.2		
Approach LOS	F			F			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	58.0	13.0	38.3	27.0	39.1	11.8	39.5				
Change Period (Y+Rc), s	4.4	4.9	4.4	4.9	4.4	4.9	4.4	4.9				
Max Green Setting (Gmax), s	6.0	50.8	8.6	36.0	22.6	34.2	10.5	34.1				
Max Q Clear Time (g_c+1.9), s	14.9	10.2	11.1	29.8	25.1	36.7	7.8	12.2				
Green Ext Time (p_c), s	0.0	10.8	0.0	1.7	0.0	0.0	0.1	3.9				
Intersection Summary												
HCM 2010 Ctrl Delay	219.4											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary
23: Enrico Fermi Rd & Siempre Viva Road

Year 2020 + Project PM
4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	100	30	30	390	60	170	120	20	20	10	280
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1782	1900	1863	1772	1900	1863	1773	1900	1863	1859	1900
Adj Flow Rate, veh/h	446	120	36	36	470	72	205	145	24	24	12	337
Adj No. of Lanes	2	1	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	8	8	2	8	8	2	8	8	2	8	8
Cap, veh/h	1026	392	118	332	548	84	232	979	159	33	397	356
Arrive On Green	0.30	0.30	0.30	0.19	0.19	0.19	0.13	0.34	0.34	0.02	0.23	0.23
Sat Flow, veh/h	3442	1317	395	1774	2931	447	1774	2903	472	1774	1766	1580
Grp Volume(v), veh/h	446	0	156	36	269	273	205	83	86	24	12	337
Grp Sat Flow(s),veh/h/ln	1721	0	1712	1774	1684	1694	1774	1685	1690	1774	1766	1580
Q Serve(g_s), s	12.5	0.0	8.4	2.0	18.5	18.7	13.6	4.1	4.3	1.6	0.6	25.2
Cycle Q Clear(g_c), s	12.5	0.0	8.4	2.0	18.5	18.7	13.6	4.1	4.3	1.6	0.6	25.2
Prop In Lane	1.00		0.23	1.00		0.26	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	1026	0	510	332	315	317	232	568	570	33	397	356
V/C Ratio(X)	0.43	0.00	0.31	0.11	0.85	0.86	0.88	0.15	0.15	0.74	0.03	0.95
Avail Cap(c_a), veh/h	1026	0	510	444	421	423	245	568	570	87	397	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	34.0	0.0	32.5	40.5	47.2	47.3	51.3	27.7	27.8	58.6	36.3	45.8
Incr Delay (d2), s/veh	1.3	0.0	1.5	0.1	12.2	12.9	28.4	0.1	0.1	23.5	0.0	30.7
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	6.1	0.0	4.2	1.0	9.7	9.9	8.5	1.9	2.0	1.0	0.3	14.0
LnGrp Delay(d),s/veh	35.3	0.0	34.0	40.6	59.4	60.2	79.7	27.8	27.9	82.1	36.3	76.6
LnGrp LOS	D		C	D	E	E	E	C	C	F	D	E
Approach Vol, veh/h	602				578		374				373	
Approach Delay, s/veh	35.0				58.6		56.3				75.6	
Approach LOS	C				E		E				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	40.7		20.1	31.9	27.4		6.6	45.4				
Change Period (Y+Rc), s	4.9		4.4	4.9	4.9		4.4	4.9				
Max Green Setting (Gmax), s	27.3		16.6	27.0	30.0		5.9	37.7				
Max Q Clear Time (g_c+I1), s	14.5		15.6	27.2	20.7		3.6	6.3				
Green Ext Time (p_c), s	2.3		0.1	0.0	1.7		0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			54.1									
HCM 2010 LOS			D									

APPENDIX I

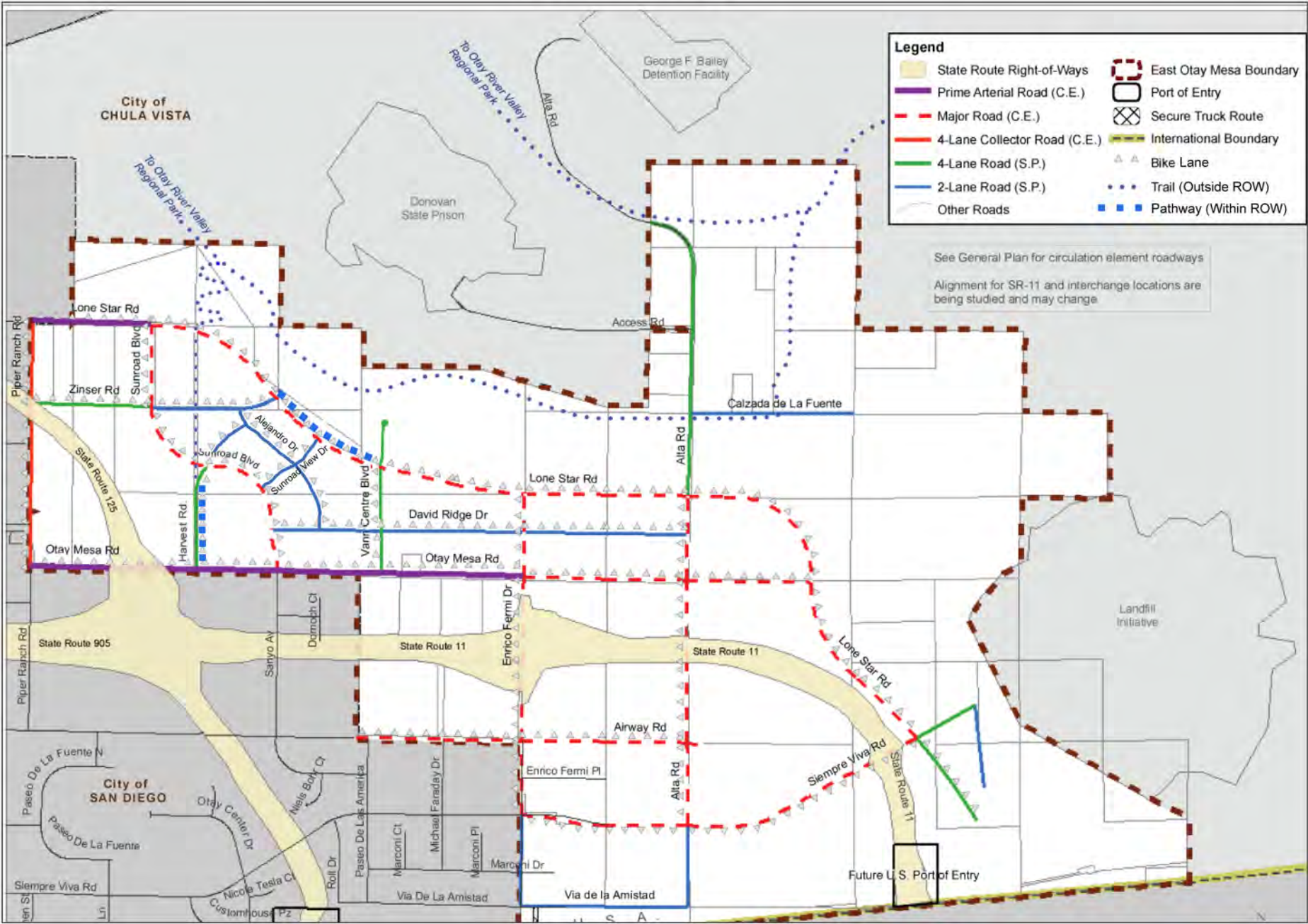
EXCERPT FROM THE EAST OTAY MESA BUSINESS PARK SPECIFIC PLAN

ROAD NAME	FROM	TO	CLASSIFICATION	Road Type	Bicycle Network ?
Airway Road	City of San Diego	Alta Road	4L-Major	Mobility Element (ME)	Yes
Alejandro Drive	Zinser Road	David Ridge Drive	2L-MXU Collector	Specific Plan (SP)	Yes
Alta Road	Specific Plan Boundary	Lone Star Road	4L-I/C Collector	Specific Plan (SP)	No
	Lone Star Road	Otay Mesa Road	4L-Major	Mobility Element (ME)	Yes
	Otay Mesa Road	Siempre Viva Road	4L-Major	Mobility Element (ME)	Yes
	Siempre Viva Road	Via de la Amistad	2L-I/C Collector	Specific Plan (SP)	No
David Ridge Drive	Sunroad Blvd.	Vann Centre Blvd.	2L-MXU Collector	Specific Plan (SP)	Yes
	Vann Centre Blvd.	Alta Road	2L-I/C Collector	Specific Plan (SP)	Yes
Calzada de la Fuente	Alta Road	East end of E.C. Way	2L-I/C Collector	Specific Plan (SP)	No
Enrico Fermi Drive	Lone Star Road		4L-Major	Mobility Element (ME)	Yes
	Otay Mesa Road	Airway Road	4L-Enhanced Major ¹	Mobility Element (ME)	Yes
	Airway Road	Siempre Viva Road	4L-Major	Mobility Element (ME)	Yes
	Siempre Viva Road	Via de la Amistad	2L-I/C Collector	Specific Plan (SP)	No
Harvest Road	Sunroad Blvd.	Otay Mesa Road	4L-MXU Collector	Specific Plan (SP)	Yes
	Sunroad Blvd.	Alejandro Drive	2L MXU Collector	Specific Plan (SP)	Yes
Lone Star Road	City of San Diego	Sunroad Blvd.	6L-Prime Arterial	Mobility Element (ME)	Yes
	Sunroad Blvd.	Siempre Viva Road	4L-Major	Mobility Element (ME)	Yes
	Siempre Viva Road	End Of Road	4L I/C Collector	Specific Plan (SP)	Yes
Otay Mesa Road	City of San Diego	Enrico Fermi Drive	6L-Prime Arterial	Mobility Element (ME)	Yes
	Enrico Fermi Drive	Alta Road	4L-Major	Mobility Element (ME)	Yes
	Alta Road	Lone Star Road	4L-Major	Mobility Element (ME)	Yes
Piper Ranch Road	Lone Star Road	Otay Mesa Road	4L-Collector	Mobility Element (ME)	Yes
Siempre Viva Road	City of San Diego	Lone Star Road	4L-Major	Mobility Element (ME)	Yes
	Lone Star Road	End of Road	4L I/C Collector	Specific Plan (SP)	Yes
Sunroad Boulevard	Lone Star Road	Otay Mesa Road	4L-Major	Mobility Element (ME)	Yes
Sunroad View Drive	Sunroad Blvd.	Lone Star Road	2L MXU Collector	Specific Plan (SP)	Yes
Vann Centre Blvd.	Otay Mesa Road	David Ridge Drive	4L-I/C Collector	Specific Plan (SP)	Yes
	David Ridge Drive	Lone Star Road	4L-I/C/MXU Collector	Specific Plan (SP)	Yes
	Lone Star Road	End of Road	4L-I/C/MXU Collector	Specific Plan (SP)	No

Via de la Amistad	City of San Diego	Alta Road	2L-I/C Collector	Specific Plan (SP)	No
Zinser Road	Piper Ranch Road	Sunroad Blvd.	4L- I/C/MXU Collector	Specific Plan (SP)	Yes
	Sunroad Blvd.	Lone Star Road	2L-I/C/MXU Collector	Specific Plan (SP)	Yes
State Route 11	City of San Diego	Port of Entry	Freeway	Mobility Element (ME)	No
State Route 125	City of San Diego	City of San Diego	Freeway	Mobility Element (ME)	No

¹ Enhanced Major Road (CE) requires additional Right-Of-Way to accommodate turn movements and freeway access from Otay Mesa Road to SR-11.

Figure 2.2-1 Mobility Plan



APPENDIX J

EXISTING + PROJECT + MITIGATION SYNCHRO INTERSECTION ANALYSIS WORKSHEETS

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

Existing + Project AM Mitigation

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	360	64	780	477	50	35	84	961	34	65	15
Future Volume (veh/h)	36	360	64	780	477	50	35	84	961	34	65	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	39	391	70	848	518	54	38	91	1045	37	71	16
Adj No. of Lanes	2	3	2	2	3	2	2	3	2	2	3	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	78	1554	916	625	2303	1359	77	1695	926	77	1694	923
Arrive On Green	0.02	0.33	0.33	0.18	0.49	0.49	0.02	0.33	0.33	0.02	0.33	0.33
Sat Flow, veh/h	3442	4715	2779	3442	4715	2783	3442	5085	2778	3442	5085	2772
Grp Volume(v), veh/h	39	391	70	848	518	54	38	91	1045	37	71	16
Grp Sat Flow(s),veh/h/ln	1721	1572	1390	1721	1572	1392	1721	1695	1389	1721	1695	1386
Q Serve(g_s), s	1.5	8.2	2.3	24.5	8.5	1.4	1.5	1.6	45.0	1.4	1.3	0.5
Cycle Q Clear(g_c), s	1.5	8.2	2.3	24.5	8.5	1.4	1.5	1.6	45.0	1.4	1.3	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	1554	916	625	2303	1359	77	1695	926	77	1694	923
V/C Ratio(X)	0.50	0.25	0.08	1.36	0.22	0.04	0.49	0.05	1.13	0.48	0.04	0.02
Avail Cap(c_a), veh/h	107	1554	916	625	2303	1359	107	1695	926	102	1694	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.90	0.90	0.90	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	33.1	31.1	55.2	19.9	18.0	65.2	30.5	45.0	65.2	30.4	30.2
Incr Delay (d2), s/veh	4.3	0.3	0.1	170.3	0.2	0.0	4.1	0.0	70.0	4.7	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	0.8	3.6	0.9	26.4	3.7	0.5	0.7	0.8	26.2	0.7	0.6	0.2
LnGrp Delay(d),s/veh	69.5	33.4	31.3	225.5	20.1	18.1	69.3	30.6	115.0	69.9	30.5	30.2
LnGrp LOS	E	C	C	F	C	B	E	C	F	E	C	C
Approach Vol, veh/h		500			1420			1174			124	
Approach Delay, s/veh		35.9			142.7			106.9			42.2	
Approach LOS		D			F			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.0	49.0	7.5	49.5	7.6	70.4	7.5	49.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	24.5	43.5	4.2	44.8	4.2	63.8	4.0	45.0				
Max Q Clear Time (g_c+I1), s	26.5	10.2	3.5	3.3	3.5	10.5	3.4	47.0				
Green Ext Time (p_c), s	0.0	5.8	0.0	8.7	0.0	5.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				109.2								
HCM 2010 LOS				F								

HCM 2010 Signalized Intersection Summary

8: Harvest Road & Otay Mesa Rd

Existing + Project AM Mitigation

8/3/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	1569	1	0	1043	45	1	0	0	69	0	529
Future Volume (veh/h)	342	1569	1	0	1043	45	1	0	0	69	0	529
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1900	1863	1732	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	433	1986	1	0	1320	57	1	0	0	87	0	670
Adj No. of Lanes	2	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	510	2296	1	2	1589	69	73	0	0	281	0	485
Arrive On Green	0.15	0.68	0.68	0.00	0.49	0.49	0.04	0.00	0.00	0.16	0.00	0.16
Sat Flow, veh/h	3442	3366	2	1774	3215	139	1774	0	0	1774	0	1583
Grp Volume(v), veh/h	433	968	1019	0	675	702	1	0	0	87	0	670
Grp Sat Flow(s),veh/h/ln	1721	1641	1727	1774	1646	1708	1774	0	0	1774	0	1583
Q Serve(g_s), s	12.4	46.3	46.3	0.0	35.6	35.7	0.1	0.0	0.0	4.4	0.0	16.0
Cycle Q Clear(g_c), s	12.4	46.3	46.3	0.0	35.6	35.7	0.1	0.0	0.0	4.4	0.0	16.0
Prop In Lane	1.00		0.00	1.00		0.08	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	510	1119	1178	2	814	844	73	0	0	281	0	485
V/C Ratio(X)	0.85	0.86	0.87	0.00	0.83	0.83	0.01	0.00	0.00	0.31	0.00	1.38
Avail Cap(c_a), veh/h	612	1119	1178	88	878	911	281	0	0	281	0	485
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(l)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	12.5	12.5	0.0	21.9	22.0	46.5	0.0	0.0	37.7	0.0	35.1
Incr Delay (d2), s/veh	9.4	7.3	6.9	0.0	6.3	6.2	0.1	0.0	0.0	0.6	0.0	184.2
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	6.6	23.0	24.1	0.0	17.6	18.2	0.0	0.0	0.0	2.2	0.0	38.3
LnGrp Delay(d),s/veh	51.4	19.7	19.4	0.0	28.3	28.2	46.6	0.0	0.0	38.3	0.0	219.3
LnGrp LOS	D	B	B		C	C	D			D		F
Approach Vol, veh/h	2420			1377			1			757		
Approach Delay, s/veh	25.3			28.2			46.6			198.5		
Approach LOS	C			C			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	8.2		0.0	73.0	20.0		19.0	54.0				
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s	16.0		5.0	67.0	16.0		18.0	54.0				
Max Q Clear Time (g_c+I1), s	2.1		0.0	48.3	18.0		14.4	37.7				
Green Ext Time (p_c), s	0.0		0.0	17.8	0.0		0.6	12.3				
Intersection Summary												
HCM 2010 Ctrl Delay	54.9											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary

9: Sanyo Ave/Sunroad Blvd & Otay Mesa Rd

Existing + Project AM Mitigation

8/3/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	982	362	41	533	43	97	44	30	68	68	458
Future Volume (veh/h)	294	982	362	41	533	43	97	44	30	68	68	458
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1762	1900	1863	1736	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	320	1228	452	51	666	47	121	48	38	74	74	498
Adj No. of Lanes	2	2	0	1	2	0	1	1	0	1	1	2
Peak Hour Factor	0.92	0.80	0.80	0.80	0.80	0.92	0.80	0.92	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	385	1369	487	65	1528	108	146	174	137	94	248	684
Arrive On Green	0.11	0.57	0.57	0.04	0.49	0.49	0.08	0.18	0.18	0.05	0.13	0.13
Sat Flow, veh/h	3442	2413	858	1774	3125	220	1774	964	764	1774	1863	2787
Grp Volume(v), veh/h	320	838	842	51	351	362	121	0	86	74	74	498
Grp Sat Flow(s),veh/h/ln	1721	1674	1598	1774	1649	1697	1774	0	1728	1774	1863	1393
Q Serve(g_s), s	10.9	52.1	57.8	3.4	16.6	16.6	8.1	0.0	5.2	4.9	4.3	16.0
Cycle Q Clear(g_c), s	10.9	52.1	57.8	3.4	16.6	16.6	8.1	0.0	5.2	4.9	4.3	16.0
Prop In Lane	1.00		0.54	1.00		0.13	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	385	949	906	65	806	829	146	0	311	94	248	684
V/C Ratio(X)	0.83	0.88	0.93	0.78	0.44	0.44	0.83	0.00	0.28	0.78	0.30	0.73
Avail Cap(c_a), veh/h	513	949	906	78	806	829	149	0	311	148	248	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.44	0.44	0.44	0.85	0.85	0.85	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	22.5	23.7	57.3	19.9	19.9	54.2	0.0	42.5	56.1	46.9	41.6
Incr Delay (d2), s/veh	3.9	5.6	8.8	28.9	1.5	1.4	30.0	0.0	0.5	13.2	0.7	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	25.5	27.5	2.2	7.8	8.1	5.2	0.0	2.5	2.8	2.3	8.0
LnGrp Delay(d),s/veh	56.0	28.1	32.6	86.2	21.4	21.3	84.3	0.0	42.9	69.3	47.6	45.5
LnGrp LOS	E	C	C	F	C	C	F		D	E	D	D
Approach Vol, veh/h	2000				764				207			
Approach Delay, s/veh	34.5				25.7				67.1			
Approach LOS	C				C				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	75.3	16.0	22.1	19.5	65.9	10.4	27.7				
Change Period (Y+Rc), s	* 5.7	7.2	6.1	* 6.1	6.1	7.2	4.0	6.1				
Max Green Setting (Gmax), s	* 5.3	65.6	10.1	* 16	17.9	52.6	10.0	16.1				
Max Q Clear Time (g_c+I1), s	5.4	59.8	10.1	18.0	12.9	18.6	6.9	7.2				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.0	0.5	17.6	0.0	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay	37.0											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary

10: Otay Mesa Rd & Vann Centre Blvd

Existing + Project AM Mitigation

8/3/2016

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	251	829	227	76	119	390		
Future Volume (veh/h)	251	829	227	76	119	390		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1759	1900	1863	1863		
Adj Flow Rate, veh/h	273	901	247	83	129	424		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	10	10	10	2	2		
Cap, veh/h	333	1084	481	162	455	703		
Arrive On Green	0.19	0.63	0.38	0.38	0.26	0.26		
Sat Flow, veh/h	1774	1727	1261	424	1774	1583		
Grp Volume(v), veh/h	273	901	0	330	129	424		
Grp Sat Flow(s),veh/h/ln	1774	1727	0	1685	1774	1583		
Q Serve(g_s), s	10.2	28.0	0.0	10.4	4.0	14.0		
Cycle Q Clear(g_c), s	10.2	28.0	0.0	10.4	4.0	14.0		
Prop In Lane	1.00			0.25	1.00	1.00		
Lane Grp Cap(c), veh/h	333	1084	0	643	455	703		
V/C Ratio(X)	0.82	0.83	0.00	0.51	0.28	0.60		
Avail Cap(c_a), veh/h	1287	2080	0	709	747	964		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	26.9	10.0	0.0	16.4	20.5	14.5		
Incr Delay (d2), s/veh	5.0	1.7	0.0	0.6	0.3	0.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.5	13.5	0.0	4.9	2.0	12.7		
LnGrp Delay(d),s/veh	31.8	11.7	0.0	17.0	20.9	15.4		
LnGrp LOS	C	B		B	C	B		
Approach Vol, veh/h		1174	330		553			
Approach Delay, s/veh		16.4	17.0		16.7			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		47.2		21.7	16.9	30.3		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		83.0		29.0	50.0	29.0		
Max Q Clear Time (g_c+I1), s		30.0		16.0	12.2	12.4		
Green Ext Time (p_c), s		13.3		1.7	0.8	8.5		
Intersection Summary								
HCM 2010 Ctrl Delay			16.6					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: La Media Rd & Otay Mesa Rd

Existing + Project PM

4/7/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	505	131	796	548	67	74	80	791	56	143	31
Future Volume (veh/h)	38	505	131	796	548	67	74	80	791	56	143	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1727	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	42	555	144	875	602	74	81	88	869	62	157	34
Adj No. of Lanes	2	3	2	2	3	2	2	3	2	2	3	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	10	2	2	10	2	2	2	2	2	2	2
Cap, veh/h	77	1382	817	843	2430	1435	128	1578	865	95	1529	836
Arrive On Green	0.02	0.29	0.29	0.24	0.52	0.52	0.04	0.31	0.31	0.03	0.30	0.30
Sat Flow, veh/h	3442	4715	2787	3442	4715	2783	3442	5085	2787	3442	5085	2781
Grp Volume(v), veh/h	42	555	144	875	602	74	81	88	869	62	157	34
Grp Sat Flow(s),veh/h/ln	1721	1572	1393	1721	1572	1392	1721	1695	1393	1721	1695	1391
Q Serve(g_s), s	1.8	13.7	5.6	35.5	10.3	1.9	3.4	1.8	45.0	2.6	3.2	1.3
Cycle Q Clear(g_c), s	1.8	13.7	5.6	35.5	10.3	1.9	3.4	1.8	45.0	2.6	3.2	1.3
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	77	1382	817	843	2430	1435	128	1578	865	95	1529	836
V/C Ratio(X)	0.54	0.40	0.18	1.04	0.25	0.05	0.63	0.06	1.00	0.65	0.10	0.04
Avail Cap(c_a), veh/h	121	1382	817	843	2430	1435	173	1578	865	95	1529	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	41.1	38.2	54.8	19.5	17.5	68.8	35.1	50.0	69.8	36.6	35.9
Incr Delay (d2), s/veh	5.3	0.8	0.4	39.7	0.2	0.1	4.7	0.0	30.5	14.9	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	0.9	6.1	2.2	21.5	4.5	0.7	1.7	0.8	21.0	1.4	1.5	0.5
LnGrp Delay(d),s/veh	75.4	41.9	38.6	94.4	19.7	17.5	73.5	35.1	80.5	84.7	36.6	35.9
LnGrp LOS	E	D	D	F	B	B	E	D	F	F	D	D
Approach Vol, veh/h		741			1551			1038			253	
Approach Delay, s/veh		43.1			61.8			76.1			48.3	
Approach LOS		D			E			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	47.0	9.9	48.1	7.8	79.2	8.5	49.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	35.5	42.5	7.3	41.7	5.1	72.9	4.0	45.0				
Max Q Clear Time (g_c+I1), s	37.5	15.7	5.4	5.2	3.8	12.3	4.6	47.0				
Green Ext Time (p_c), s	0.0	7.9	0.0	7.5	0.0	8.8	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				61.1								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary

8: Harvest Road & Otay Mesa Rd

Existing + Project PM

8/3/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	625	1197	0	0	1591	80	0	0	0	59	0	465
Future Volume (veh/h)	625	1197	0	0	1591	80	0	0	0	59	0	465
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1900	1863	1733	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	665	1273	0	0	1693	85	0	0	0	63	0	495
Adj No. of Lanes	2	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	661	2486	0	2	1677	84	0	2	0	287	0	560
Arrive On Green	0.19	0.76	0.00	0.00	0.53	0.53	0.00	0.00	0.00	0.16	0.00	0.16
Sat Flow, veh/h	3442	3368	0	1774	3192	159	0	-74510	0	1774	0	1583
Grp Volume(v), veh/h	665	1273	0	0	869	909	0	0	0	63	0	495
Grp Sat Flow(s),veh/h/ln	1721	1641	0	1774	1647	1705	0	1863	0	1774	0	1583
Q Serve(g_s), s	19.0	15.2	0.0	0.0	52.0	52.0	0.0	0.0	0.0	3.1	0.0	16.0
Cycle Q Clear(g_c), s	19.0	15.2	0.0	0.0	52.0	52.0	0.0	0.0	0.0	3.1	0.0	16.0
Prop In Lane	1.00		0.00	1.00		0.09	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	661	2486	0	2	865	896	0	2	0	287	0	560
V/C Ratio(X)	1.01	0.51	0.00	0.00	1.00	1.02	0.00	0.00	0.00	0.22	0.00	0.88
Avail Cap(c_a), veh/h	661	2486	0	72	865	896	0	320	0	287	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.0	4.8	0.0	0.0	23.5	23.5	0.0	0.0	0.0	36.1	0.0	30.1
Incr Delay (d2), s/veh	36.7	0.2	0.0	0.0	31.6	34.0	0.0	0.0	0.0	0.4	0.0	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	12.4	6.8	0.0	0.0	30.9	32.6	0.0	0.0	0.0	1.5	0.0	15.1
LnGrp Delay(d),s/veh	76.7	4.9	0.0	0.0	55.1	57.5	0.0	0.0	0.0	36.5	0.0	45.6
LnGrp LOS	F	A			F	F				D		D
Approach Vol, veh/h		1938			1778			0			558	
Approach Delay, s/veh		29.6			56.3			0.0			44.6	
Approach LOS		C			E						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		0.0	0.0	79.0		20.0	23.0	56.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		17.0	4.0	67.0		16.0	19.0	52.0				
Max Q Clear Time (g_c+I1), s		0.0	0.0	17.2		18.0	21.0	54.0				
Green Ext Time (p_c), s		0.0	0.0	41.4		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			42.7									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
9: Sanyo Ave & Otay Mesa Rd

Existing + Project PM

8/3/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	560	156	47	969	80	304	80	44	59	59	398
Future Volume (veh/h)	540	560	156	47	969	80	304	80	44	59	59	398
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1755	1900	1863	1737	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	587	596	166	50	1031	87	323	87	47	64	64	433
Adj No. of Lanes	2	2	0	1	2	0	1	1	0	1	1	2
Peak Hour Factor	0.92	0.94	0.94	0.94	0.94	0.92	0.94	0.92	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	10	10	2	10	10	2	2	2	2	2	2
Cap, veh/h	599	1621	450	65	1507	127	291	318	172	82	267	885
Arrive On Green	0.17	0.63	0.63	0.04	0.49	0.49	0.16	0.28	0.28	0.05	0.14	0.14
Sat Flow, veh/h	3442	2571	714	1774	3082	260	1774	1139	615	1774	1863	2787
Grp Volume(v), veh/h	587	386	376	50	552	566	323	0	134	64	64	433
Grp Sat Flow(s),veh/h/ln	1721	1667	1618	1774	1650	1691	1774	0	1754	1774	1863	1393
Q Serve(g_s), s	20.4	13.4	13.4	3.4	30.8	30.8	19.7	0.0	7.2	4.3	3.7	15.1
Cycle Q Clear(g_c), s	20.4	13.4	13.4	3.4	30.8	30.8	19.7	0.0	7.2	4.3	3.7	15.1
Prop In Lane	1.00		0.44	1.00		0.15	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	599	1051	1020	65	807	827	291	0	489	82	267	885
V/C Ratio(X)	0.98	0.37	0.37	0.77	0.68	0.68	1.11	0.00	0.27	0.78	0.24	0.49
Avail Cap(c_a), veh/h	599	1051	1020	132	807	827	291	0	489	133	273	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.35	0.35	0.35	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	10.7	10.7	57.3	23.5	23.5	50.2	0.0	33.8	56.6	45.6	33.1
Incr Delay (d2), s/veh	28.2	0.8	0.9	6.7	1.6	1.6	85.3	0.0	0.3	14.5	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	6.4	6.2	1.8	14.3	14.7	16.5	0.0	3.5	2.4	1.9	5.8
LnGrp Delay(d),s/veh	77.6	11.5	11.5	64.1	25.2	25.1	135.4	0.0	34.1	71.1	46.0	33.5
LnGrp LOS	E	B	B	E	C	C	F		C	E	D	C
Approach Vol, veh/h	1349				1168				457			
Approach Delay, s/veh	40.3				26.8				105.7			
Approach LOS	D				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	82.8	25.8	23.3	27.0	65.9	9.6	39.6				
Change Period (Y+Rc), s	* 5.7	7.2	6.1	* 6.1	6.1	7.2	4.0	6.1				
Max Green Setting (Gmax), s	* 8.9	50.8	19.7	* 18	20.9	38.4	9.0	28.3				
Max Q Clear Time (g_c+I1), s	5.4	15.4	21.7	17.1	22.4	32.8	6.3	9.2				
Green Ext Time (p_c), s	0.0	11.3	0.0	0.2	0.0	3.9	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			44.1									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
10: Otay Mesa Rd & Vann Centre Blvd

Existing + Project PM

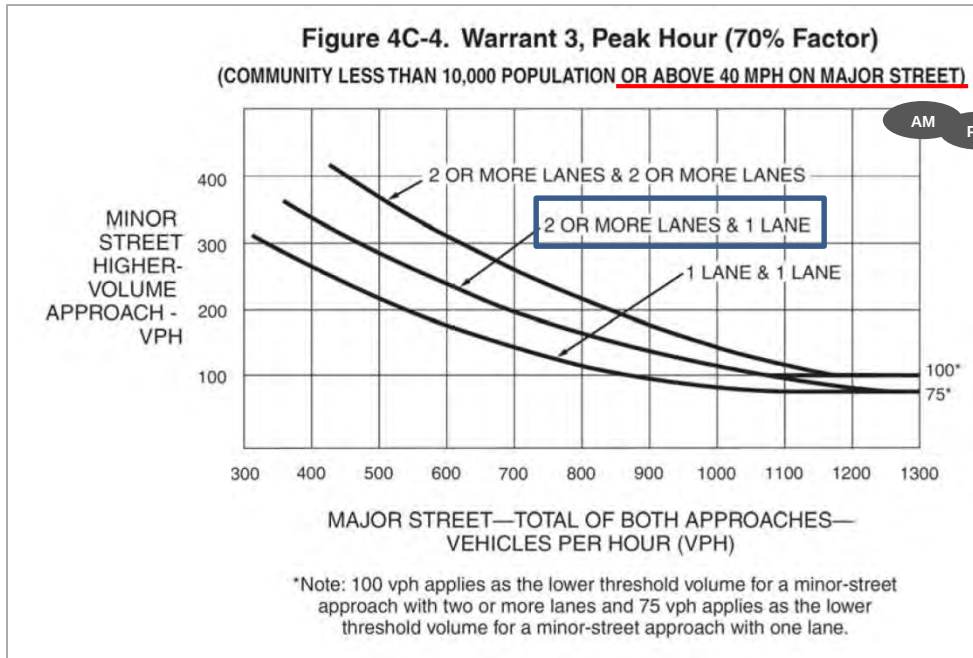
8/3/2016

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	460	203	757	140	103	339		
Future Volume (veh/h)	460	203	757	140	103	339		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1727	1747	1900	1863	1863		
Adj Flow Rate, veh/h	500	221	823	152	112	368		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	10	10	10	2	2		
Cap, veh/h	473	1451	785	145	189	591		
Arrive On Green	0.27	0.84	0.55	0.55	0.11	0.11		
Sat Flow, veh/h	1774	1727	1435	265	1774	1583		
Grp Volume(v), veh/h	500	221	0	975	112	368		
Grp Sat Flow(s),veh/h/ln	1774	1727	0	1700	1774	1583		
Q Serve(g_s), s	40.0	3.5	0.0	82.0	9.0	16.0		
Cycle Q Clear(g_c), s	40.0	3.5	0.0	82.0	9.0	16.0		
Prop In Lane	1.00			0.16	1.00	1.00		
Lane Grp Cap(c), veh/h	473	1451	0	929	189	591		
V/C Ratio(X)	1.06	0.15	0.00	1.05	0.59	0.62		
Avail Cap(c_a), veh/h	473	1451	0	929	189	591		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	55.0	2.2	0.0	34.0	63.9	38.4		
Incr Delay (d2), s/veh	57.2	0.0	0.0	43.2	4.8	2.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	27.1	1.7	0.0	49.4	4.7	25.2		
LnGrp Delay(d),s/veh	112.2	2.2	0.0	77.2	68.7	40.4		
LnGrp LOS	F	A		F	E	D		
Approach Vol, veh/h		721	975		480			
Approach Delay, s/veh		78.5	77.2		47.0			
Approach LOS		E	E		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		130.0		20.0	44.0	86.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		126.0		16.0	40.0	82.0		
Max Q Clear Time (g_c+I1), s		5.5		18.0	42.0	84.0		
Green Ext Time (p_c), s		14.7		0.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			71.0					
HCM 2010 LOS			E					

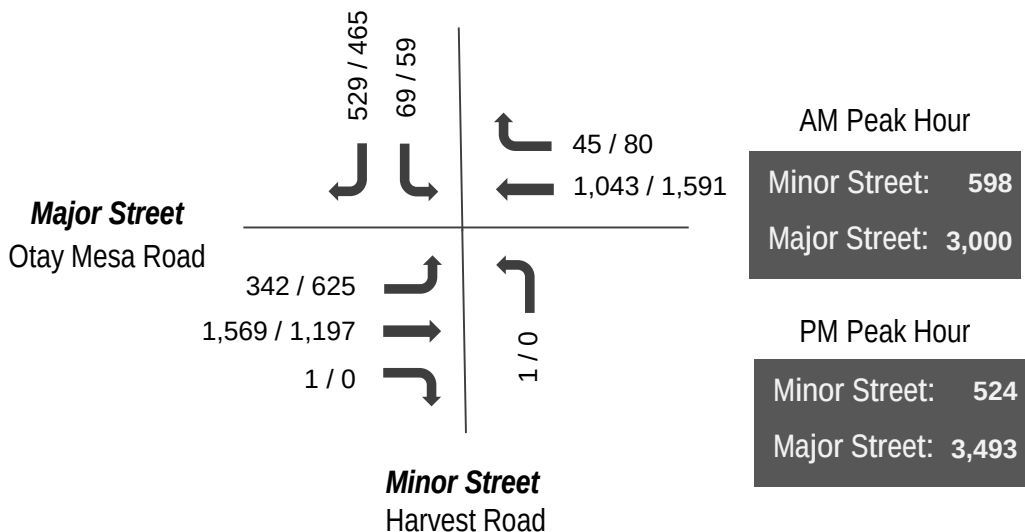
APPENDIX K

SIGNAL WARRANT CALCULATION SHEET

Intersection #8
 Otay Mesa Road / Harvest Road
 Warrant 3, Peak Hour: 70% Factor Table^a
 Existing + Project



Existing+ Project Volumes



Footnotes:

- a. The posted speed limit on the Major Street (Otay Mesa Road) is 55 MPH. Therefore the 70% Table (Table 4C-4) may be used to determine if a signal at the intersection is warranted.

RESULT: SIGNAL WARRANTED

TABLE 11-4
PROJECT MITIGATION PHASING SUMMARY

Impacted Location	EDU Before Impact is Triggered
Intersections	
4. Otay Mesa Road / La Media Road	35 EDU
8. Otay Mesa Road / Harvest Road	35 EDU
9. Otay Mesa Road / Sanyo Avenue	1,980 EDU
10. Otay Mesa Road / Vann Centre Boulevard	1,530 EDU
Street Segments	
Otay Mesa Road: Sanyo Ave to Vann Centre Blvd	60 EDU

