

TTM 20488 VISTA VERDE RESIDENTIAL PROJECT TRAFFIC IMPACT STUDY City of Victorville, California



**TTM 20488 VISTA VERDE RESIDENTIAL PROJECT
TRAFFIC IMPACT STUDY
City of Victorville, California**

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February 4, 2022

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1.0 Introduction

1.1 Purpose of Report & Study Objectives

The purpose of this analysis is to evaluate the Tentative Tract Map (TTM) 20488 Vista Verde Residential project (hereinafter referred to as project) from a traffic impact and level of service standpoint.

This traffic study has been prepared in accordance with the *City of Victorville General Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service and Improvement Needs, January 20, 2005* (Traffic Study Guidelines) and the San Bernardino County Congestion Management Program.

This study is prepared in accordance with the scope of work approved by the City of Victorville staff and contained in Appendix A.

1.2 Site Location & Project Description

The project site is located at the northwest corner of Mesa View Drive and La Mesa Road, in the City of Victorville.

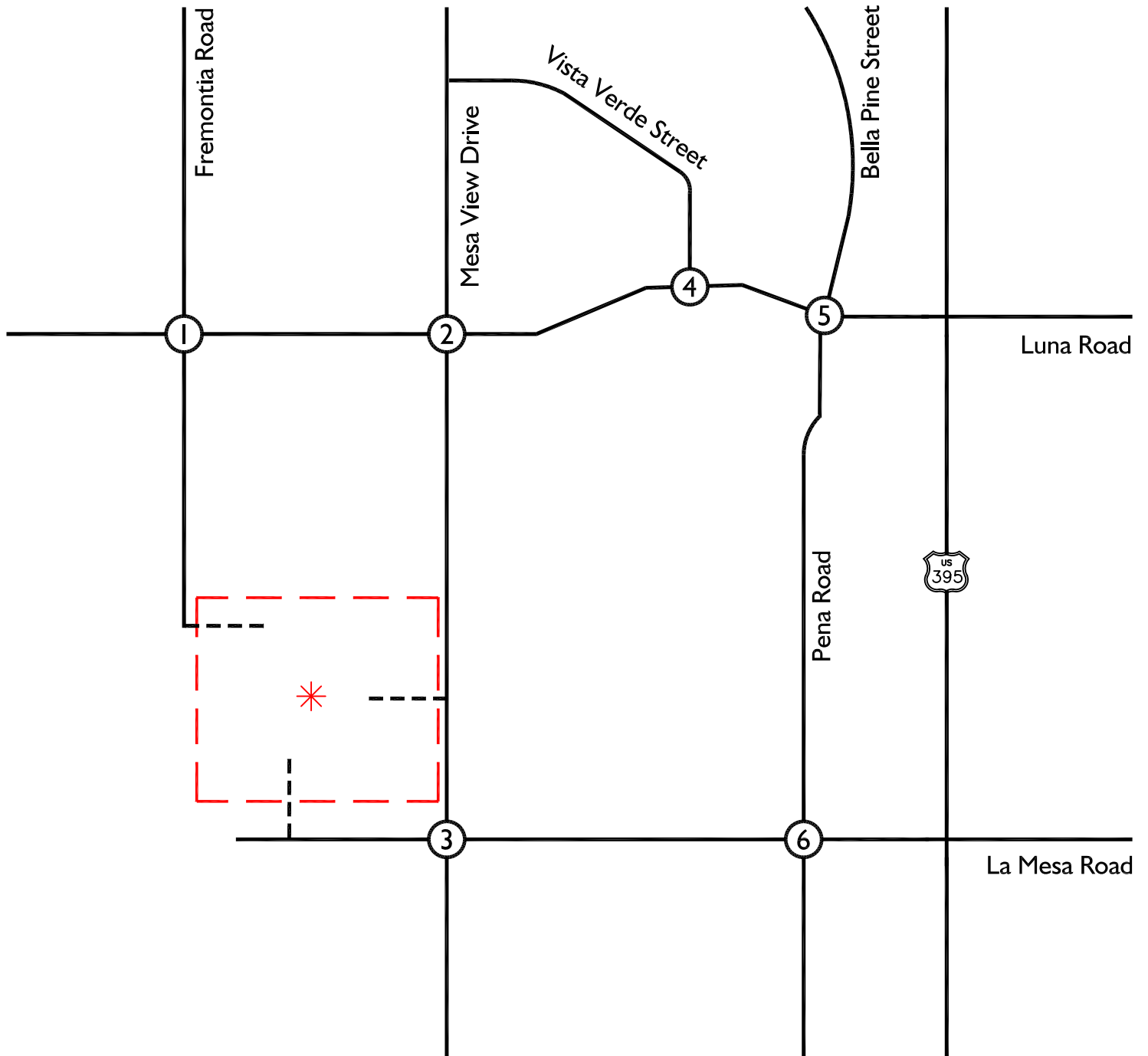
The proposed project site is currently vacant. The project consists of constructing and operating 153 single family residential dwelling units on approximately 28.54 net acres.

Main access for the project is planned via the following:

- One (1) full-access unsignalized intersections along Mesa View Drive.
- One (1) full-access unsignalized intersections along La Mesa Road.
- One (1) full-access unsignalized intersections along Fremontia Road.

The project is planned to open in 2025 and is evaluated in one single phase.

The location of the project site is presented on Exhibit 1-1. The site plan is shown on Exhibit 1-2.

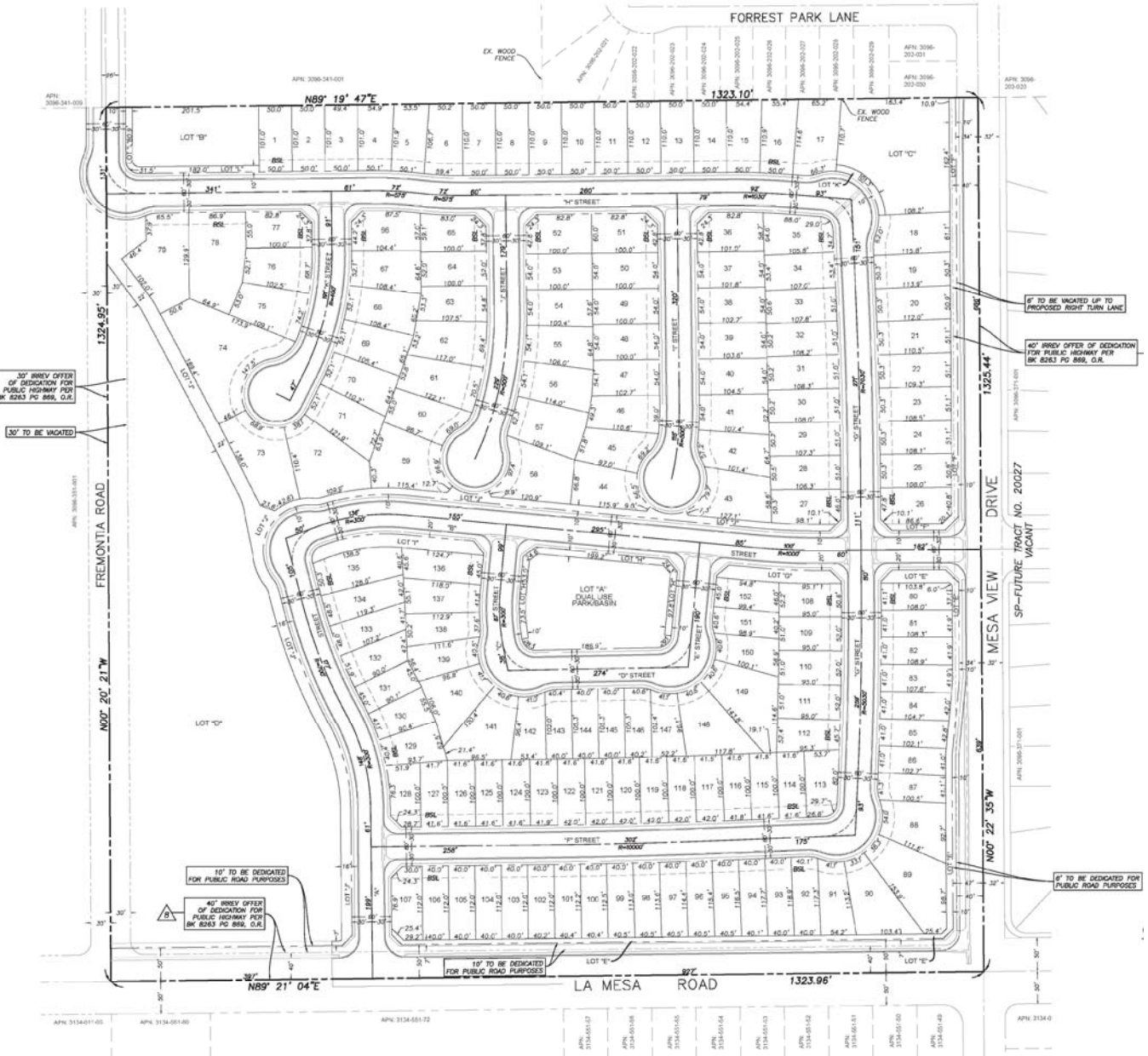


Legend:

- ① = Study Area Intersection
- * = Project Site
- - - = Project Site Boundary
- - - = Project Access Driveway



Exhibit I-2 Site Plan



1.3 Traffic Study Area & Analysis Scenarios

Exhibit 1-1 illustrates the site location map and traffic analysis study area. The study area consists of the following signalized and unsignalized intersections listed below.

1. Fremontia Road (NS) / Luna Road (EW);
2. Mesa View Drive (NS) / Luna Road (EW);
3. Mesa View Drive (NS) / La Mesa Road (EW);
4. Vista Verde Street (NS) / Luna Road (EW).
5. Bella Pine Street (NS) / Luna Road (EW); and
6. Pena Road (NS) / La Mesa Road (EW);

The analysis evaluates traffic conditions of the study intersections and driveways for the following scenarios:

- Existing Conditions;
- Existing Plus Project Conditions;
- Project Opening Year (2025) Without Project Conditions;
- Project Opening Year (2025) With Project Conditions;
- Future Year (2035) Without Project Conditions; and
- Future Year (2035) With Project Conditions.

2.0 Analysis Methodology and Performance Criteria

This section of the report identifies the methodologies used to perform the traffic level of service analysis. The analysis methodologies and performance criteria are consistent with the City of Victorville Traffic Study Guidelines.

2.1 Intersection Level of Service Analysis Methodology

For all intersections within the study area, the Highway Capacity Manual (HCM) 6th Edition has been used to evaluate level of service. HCM methodology expresses the level of service in terms of vehicle delay (seconds) and assigns a letter value to the corresponding range.

For signalized intersections and all-way stop-controlled intersections, the average control delay per vehicle is calculated to determine the level of service.

For two-way stop controlled intersections At two-way or side-street-controlled intersections, the average control delay is calculated for each minor-street stopped movement and the major-street left turns, not for the intersection as a whole. The level of service is reported based on the worst individual movement (or movements sharing a single lane).

Table 2-1 shows the HCM level of service assigned letter value based on vehicle delay.

**Table 2-1
HCM Level of Service**

LOS	Average Control Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
A	0.00 - 10.00	0.00 - 10.00
B	10.01 - 20.00	10.01 - 15.00
C	20.01 - 35.00	15.01 - 25.00
D	35.01 - 55.00	25.01 - 35.00
E	55.01 - 80.00	35.01 - 50.00
F	>80.01	>50.01

2.2. Level of Service Performance Criteria

The City of Victorville General Plan 2030 Circulation Element Policy establishes the following policies related to level of service performance criteria:

Policy 1.1.1 Maintain LOS "D" or better at intersections (as defined in the most current version of the Highway Capacity Manual), except in certain high activity areas designated by the Planning Commission, where a LOS E is acceptable.

Policy 1.1.2 If a development project would worsen an intersection peak hour LOS to E or worse, it is considered a significant impact that must be mitigated. If a development project would worsen an already deficient intersection by two percent or more, it is considered a significant impact that must be mitigated.

3.0 Existing Traffic Volumes & Circulation System

This section provides a discussion of existing study area conditions and traffic volumes.

3.1 Existing Traffic Controls & Intersection Geometrics

Exhibit 3-1 identifies the existing traffic control and geometry conditions for the study area. The number of through traffic lanes for existing roadways and existing intersection controls are identified. The type of traffic control and number of lanes at an intersection are key inputs for the calculation of level of service.

3.2 Existing Conditions Traffic Volumes

Existing conditions intersection level of service calculations are based upon manual AM and PM peak hour turning movement counts taken in November 2021 during typical weekday conditions. The AM peak hour traffic volumes were determined by counting the two-hour peak period between 7:00 AM and 9:00 AM and using the highest hour within that two-hour peak period. Similarly, the PM peak hour traffic volumes were identified by counting the two-hour peak period between 4:00 PM and 6:00 PM and using the highest hour within that two-hour peak period. The traffic count worksheets are included in Appendix B.

Existing traffic volumes for the study area intersections and driveways are shown on Exhibit 3-2.

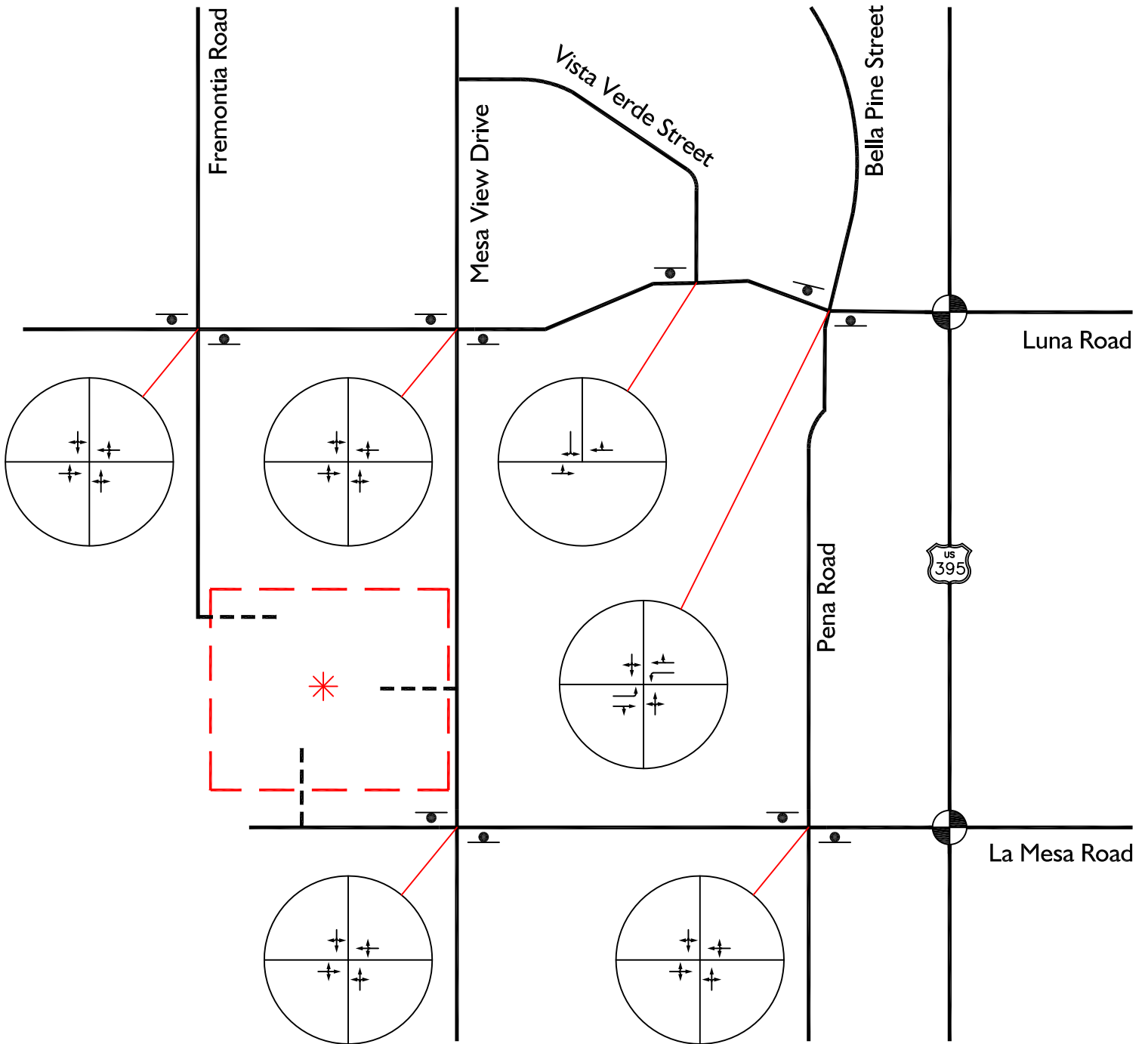
3.3 City of Victorville Circulation Map

The project's setting, within the context of the existing City of Victorville Circulation Map, is shown in Exhibit 3-3. The project is located adjacent to the following classified roadways:

- | | |
|---------------------|---|
| • La Mesa Road - | Residential Arterial (100 ft. ROW) ¹ |
| • Mesa View Drive - | Collector (68 ft. ROW) ¹ |
| • Fremontia Road - | Local |
| • Pena Road - | Collector (68 ft. ROW) ¹ |
| • Luna Road - | Collector (68 ft. ROW) ¹ |

¹ Street sections for new development. Additional right-of-way may be required at intersections.

Existing Lane Geometry and Traffic Conditions

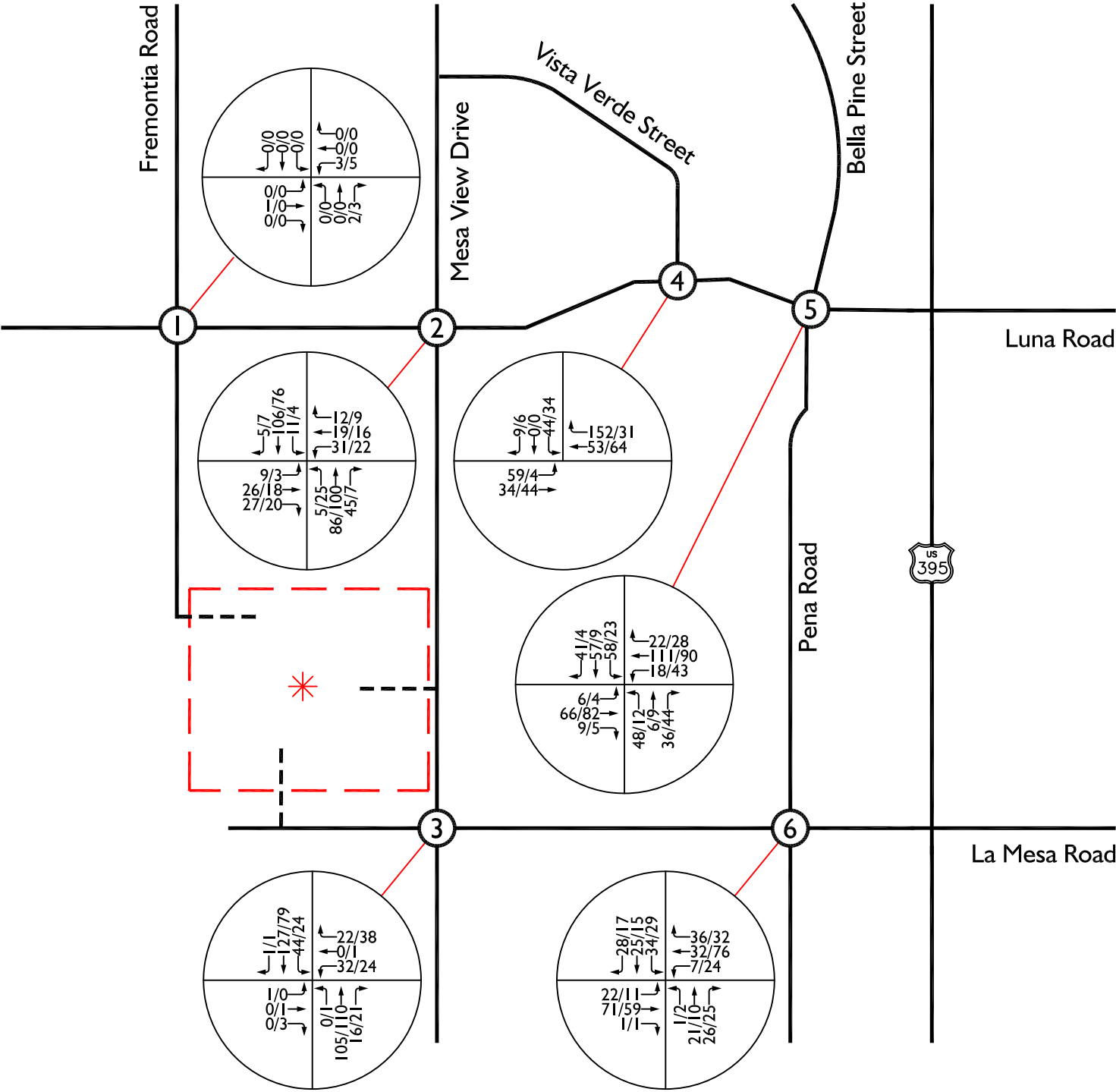


Legend:

- ⊕ = Traffic Signal
- = Stop Sign



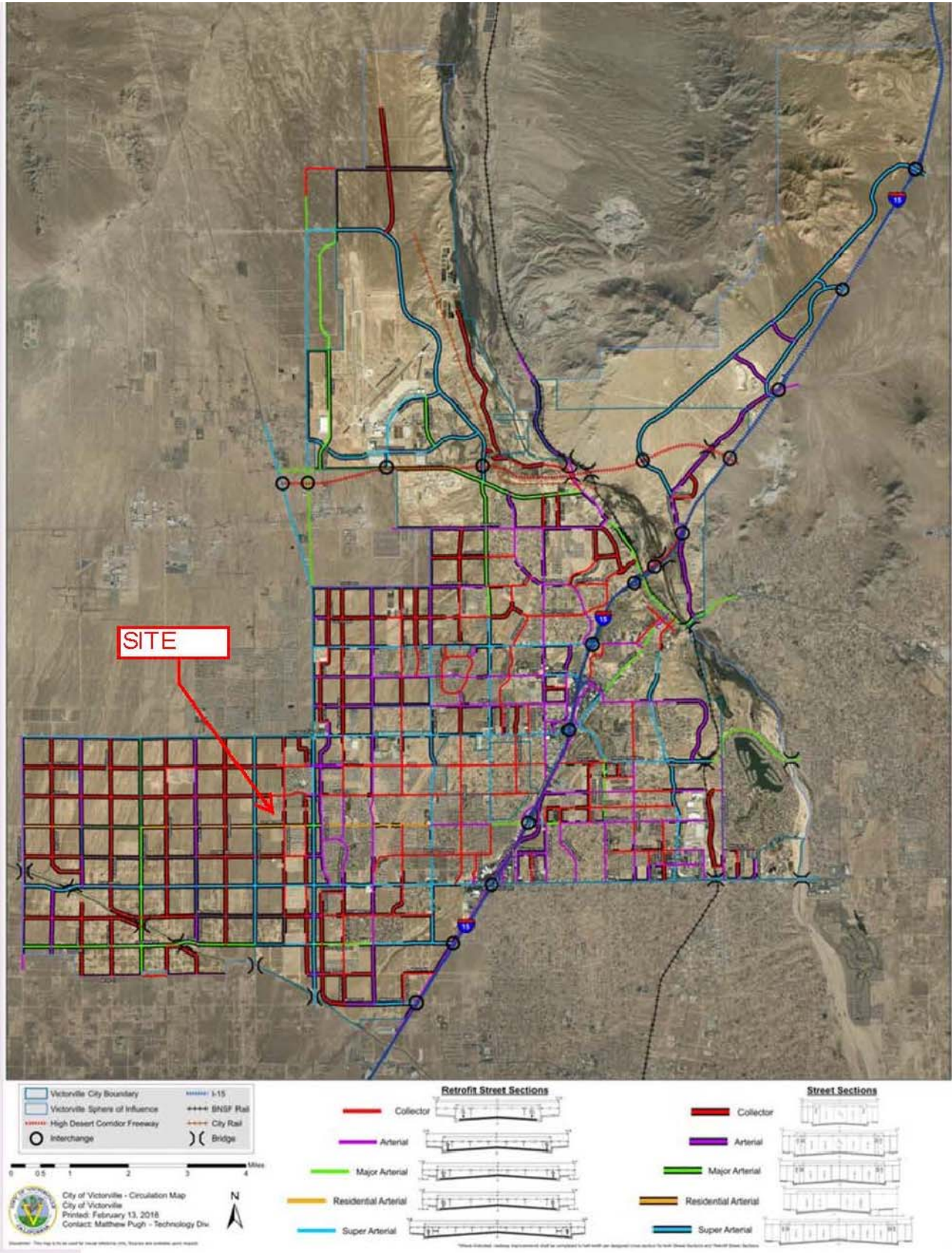
Exhibit 3-2 Existing Traffic Volumes



Legend:
10/20 = AM/PM Peak Hour Volumes



Exhibit 3-3
City of Victorville Circulation Map



4.0 Future Traffic Volumes

This section provides a discussion on methodologies utilized to derive future traffic volumes for the study area.

4.1. Project Traffic

4.1.1 Project Trip Generation

Trip generation represents the amount of trips that are attracted and produced by a land use.

Trip generation for the existing uses, and the proposed project is determined based on ITE 10th Edition² trip generation rates for the proposed land uses as shown in Table 4-1.

Utilizing the ITE trip generation rates shown in Table 4-1, Table 4-2 summarizes the daily and peak hour trip generation for the proposed project.

As shown in Table 4-2, based on ITE trip generation rates, the proposed use is forecast to generate approximately 1,444 daily trips which include approximately 113 AM peak hour trip and approximately 151 PM peak hour trips.

4.1.2 Project Trip Distribution

Trip distribution represents the directional orientation of trips to and from the project. Trip distribution is heavily influenced by the geographical location of the site, the location of residential, retail, employment, recreational opportunities, and the proximity to the regional freeway system. The directional orientation of project-generated trips was determined by evaluating existing and proposed land uses and highways within the community.

Forecast trip distribution for the proposed project has been developed through discussions with the City during the scoping process.

Exhibit 4-1 shows the forecast trip distribution for the proposed project.

² During the time since this study was initiated, ITE released the 11th Edition of the Trip Generation Manual. To be consistent with the approved traffic study scope of work, and because the 10th Edition trip rates are slightly higher than the 11th Edition, this report continues to use the 10th Edition trip rates as a worst case assessment of project traffic.

**Table 4-1
ITE Trip Generation Rates¹**

Land Use	Units	ITE Code	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Single Family Homes	DU	210	0.19	0.56	0.74	0.62	0.37	0.99	9.44

¹ Source: 2017 ITE Trip Generation Manual (10th Edition).

² DU = Dwelling Units

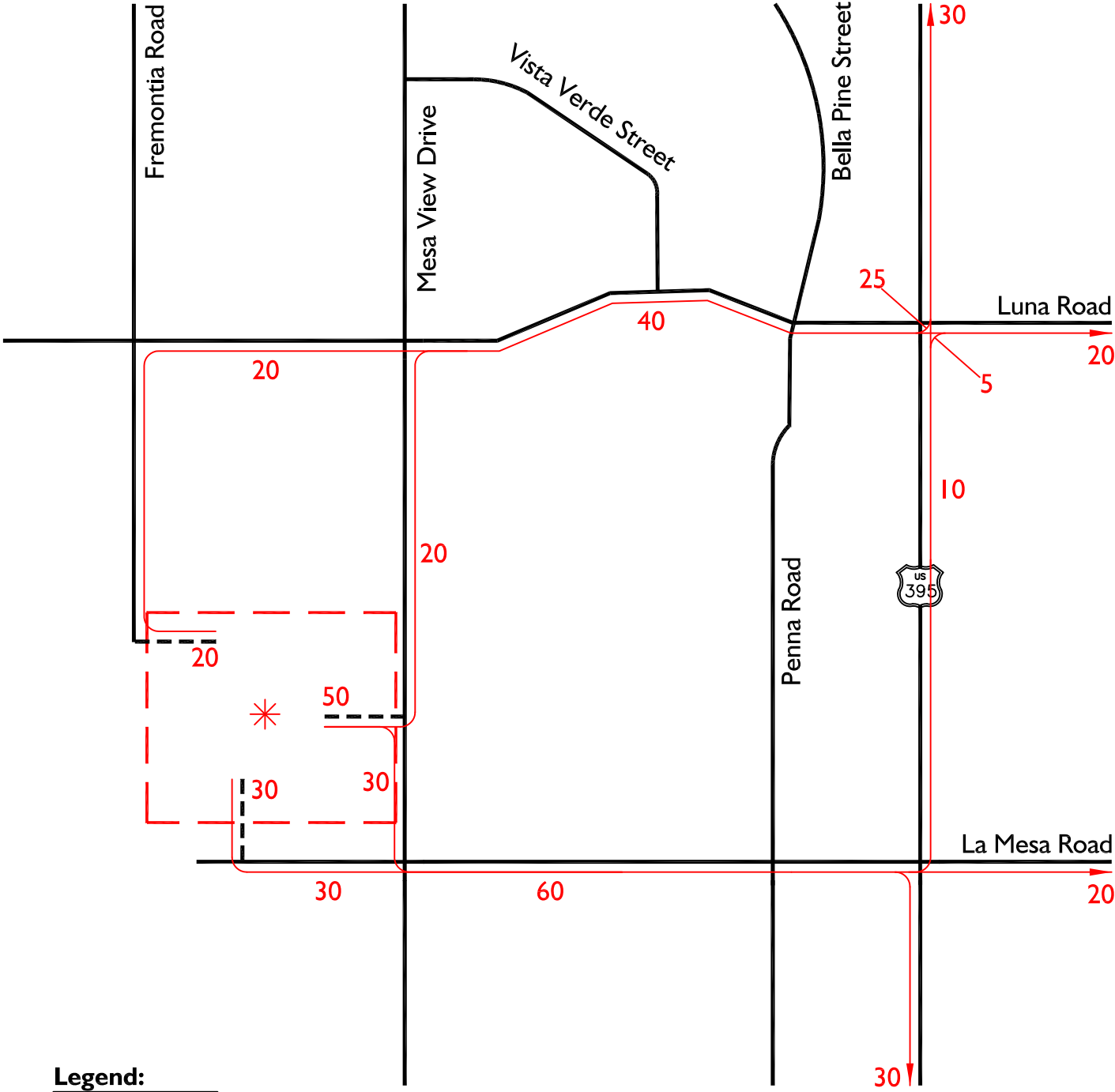
**Table 4-2
Proposed Project Trip Generation¹**

Land Use (ITE Code)	Quantity	Units	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Single Family Homes	153	DU	28	85	113	95	56	151	1,444
		Total	28	85	113	95	56	151	1,444

¹ Source: 2017 ITE Trip Generation Manual (10th Edition).

² DU = Dwelling Units

Exhibit 4-1
Project Trip Distribution



Legend:

- 10 = Percent To/From the Project
- * = Project Site
- - - = Project Site Boundary
- - - = Project Access Driveway



4.1.3 Modal Split

Modal split denotes the proportion of traffic generated by a project that would use any of the transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic reducing potential of public transit and other modes can be notable. However, the traffic projections in this study are conservative because no modal split reduction is applied to the projections.

4.1.4 Project Peak Hour Traffic Volumes/Assignment

The assignment of project-generated trips to and from the project site on the adjoining roadway system is based upon the project's trip generation, trip distribution, and proposed arterial highway and local street systems this traffic study assumes would be in place by the time of occupancy of the site.

Project traffic volumes are shown on Exhibit 4-2.

4.2 Existing Plus Project Traffic Volumes

Existing Plus Project Conditions traffic volumes are derived by adding the project traffic volumes shown in Exhibit 4-3 to the existing traffic volumes shown in Exhibit 3-2.

Existing Plus Project Conditions traffic volumes are shown in Exhibit 4-3.

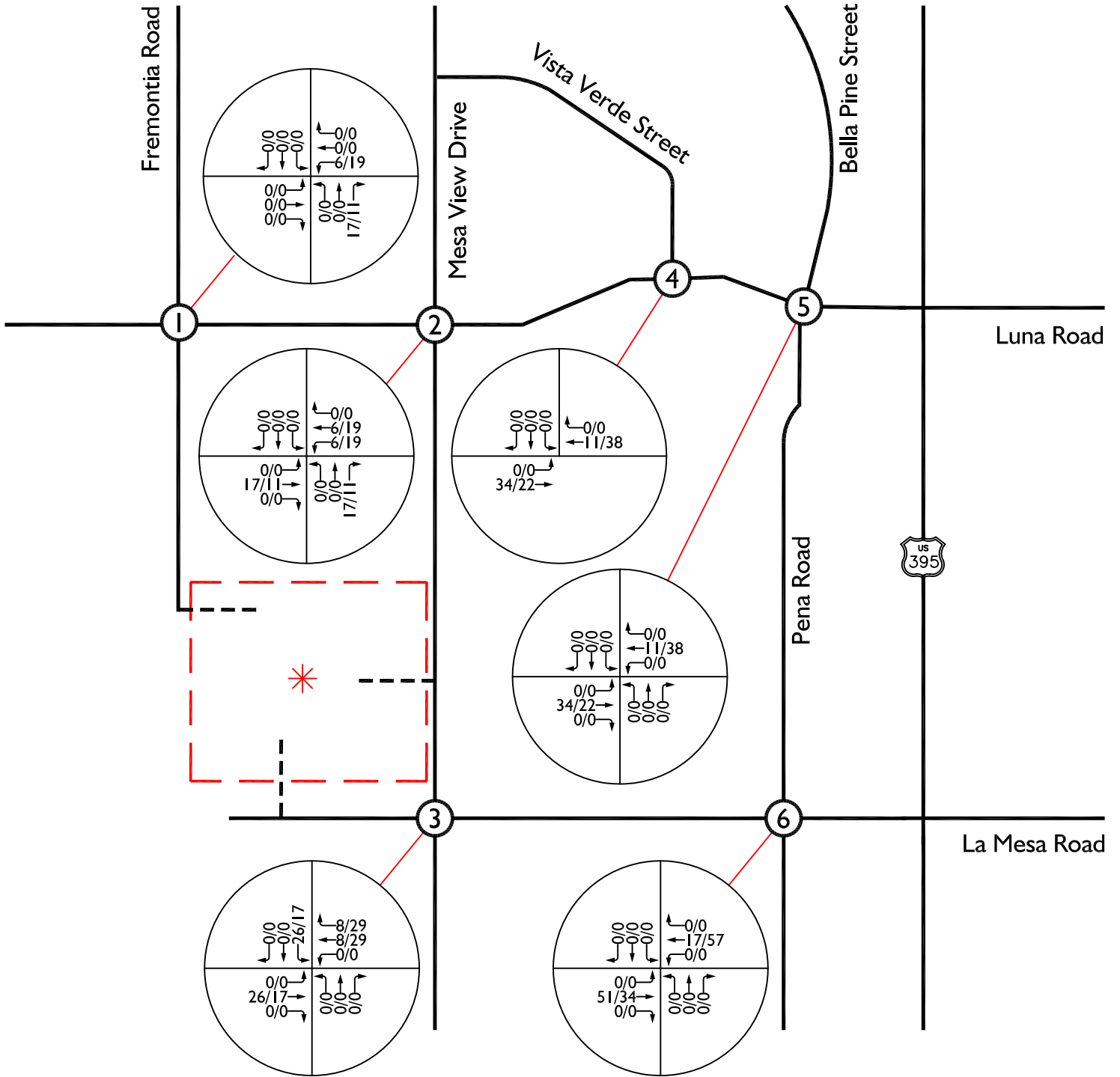
4.3 Background Traffic

4.3.1 Method of Projection

To assess future conditions, project traffic is combined with existing traffic, area-wide growth, and cumulative projects' traffic.

Consistent with the City of Victorville traffic study guidelines and requirements, Opening Year (2025) Conditions traffic volumes were derived by applying an annual growth rate of two (2) percent per year over a four-year period to existing traffic volumes to account for background growth in 2025. Likewise, Future Year (2035) Conditions traffic volumes were derived by applying an annual growth rate of two (2) percent per year over a fourteen-year period to existing traffic volumes to account for background growth in 2035. It should be noted this is a conservative assumption since the growth rate is applied to all movements at the study intersections and driveways.

Exhibit 4-2 Project Traffic Volumes

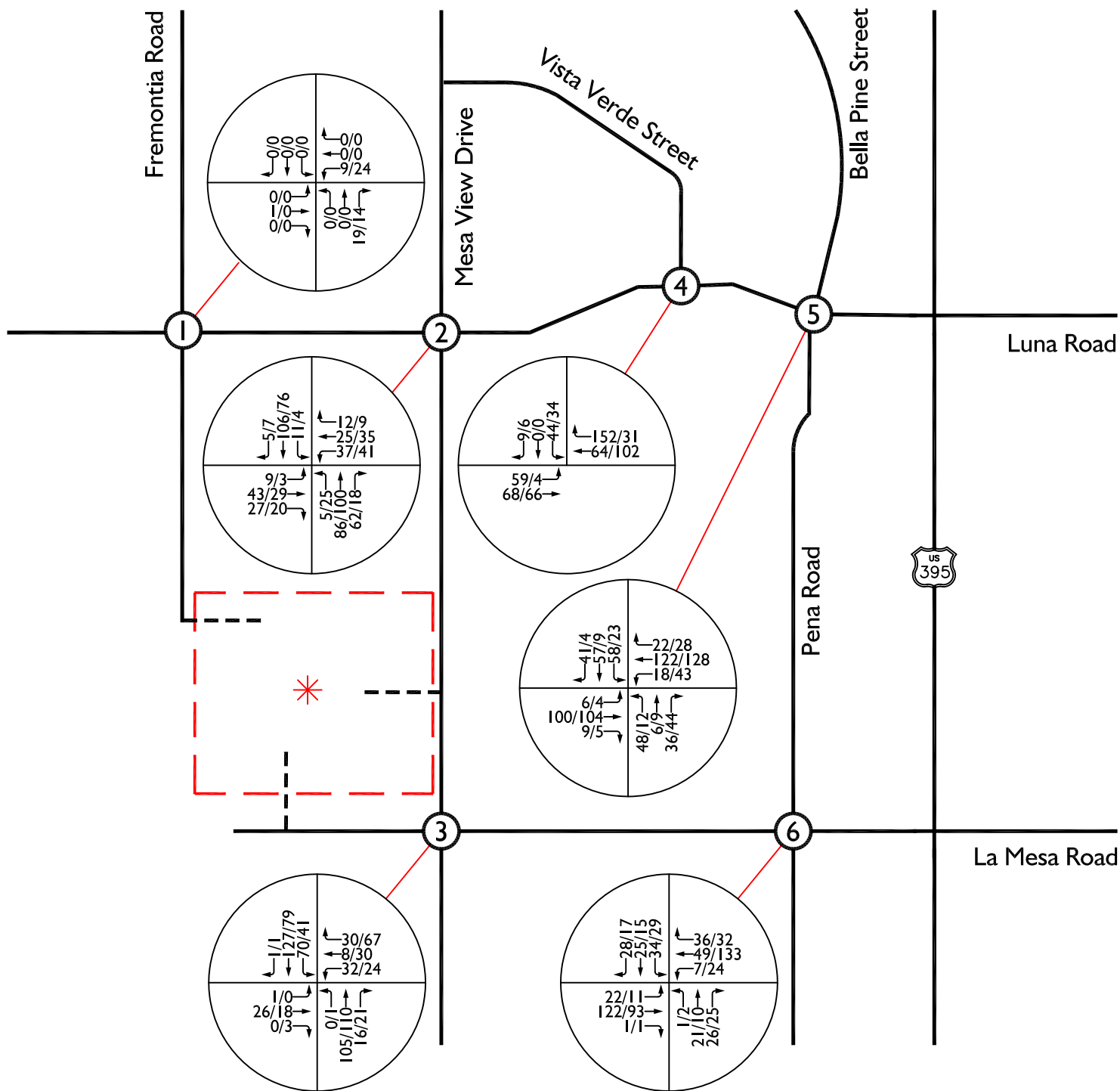


Legend:

10/20 = AM/PM Peak Hour Volumes



Existing Plus Project Traffic Volumes



Legend:

10/20 = AM/PM Peak Hour Volumes



4.4 Opening Year (2025) Without Project Conditions Traffic Volumes

Opening Year (2025) Without Project Conditions traffic volumes consist of existing traffic volumes, and a two (2) percent per year annual growth rate over a four-year period.

Opening Year (2025) Without Project Conditions traffic volumes are shown on Exhibit 4-4.

4.5 Opening Year (2025) With Project Conditions Traffic Volumes

Opening Year (2025) With Project Conditions traffic volumes consist of existing traffic volumes, a two (2) percent per year annual growth rate over a four-year period and project-generated traffic.

Opening Year (2025) With Project Conditions traffic volumes are shown on Exhibit 4-5.

4.6 Future Year (2035) Without Project Conditions Traffic Volumes

Future Year (2035) Without Project Conditions traffic volumes consist of existing traffic volumes, and a two (2) percent per year annual growth rate over a fourteen-year period.

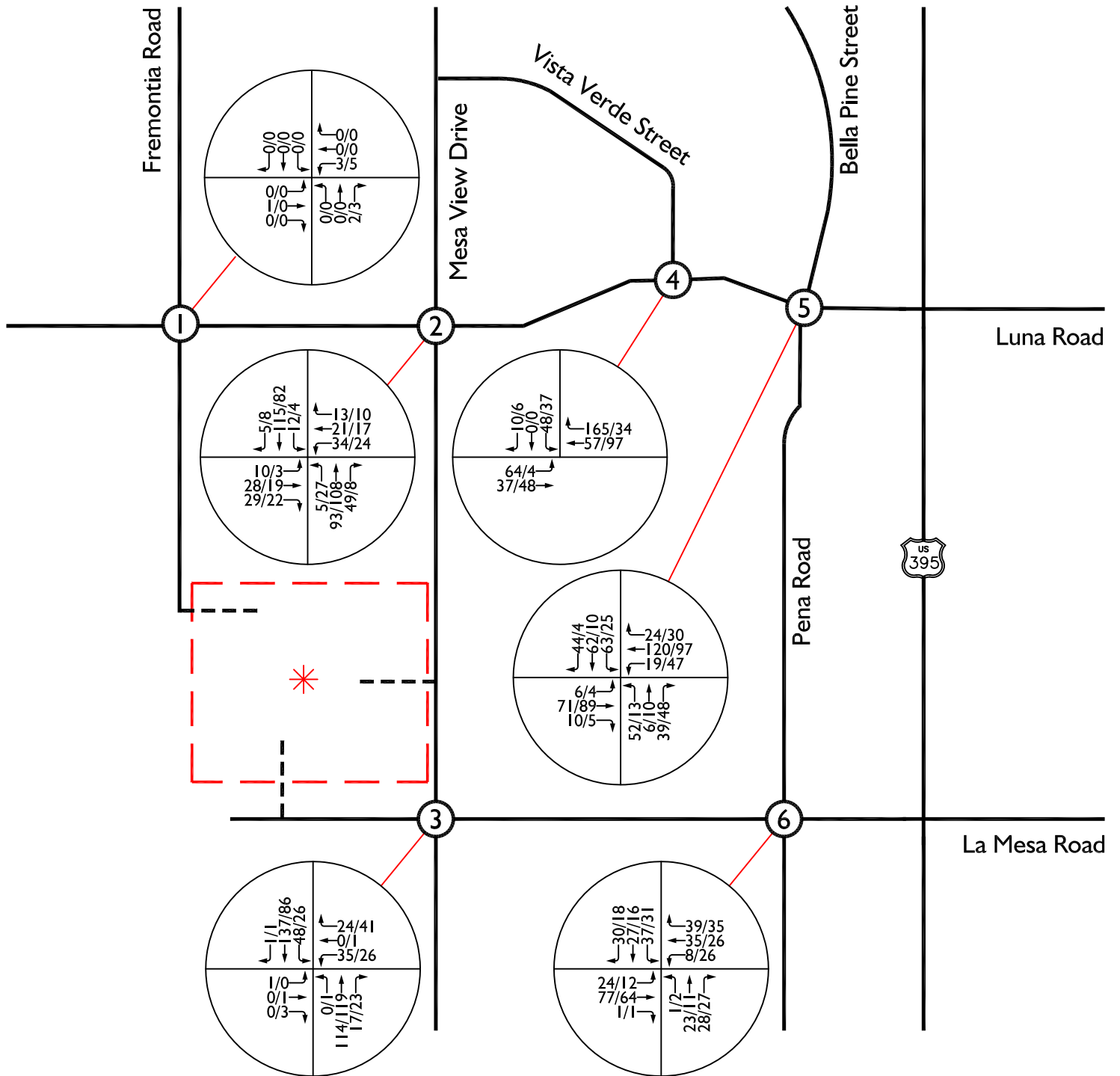
Opening Year (2035) Without Project Conditions traffic volumes are shown on Exhibit 4-6.

4.7 Future Year (2035) With Project Conditions Traffic Volumes

Future Year (2023) With Project Conditions traffic volumes consist of existing traffic volumes, a two (2) percent per year annual growth rate over a two-year period and project-generated traffic.

Opening Year (2023) With Project Conditions traffic volumes are shown on Exhibit 4-7.

Opening Year Without Project Traffic Volumes

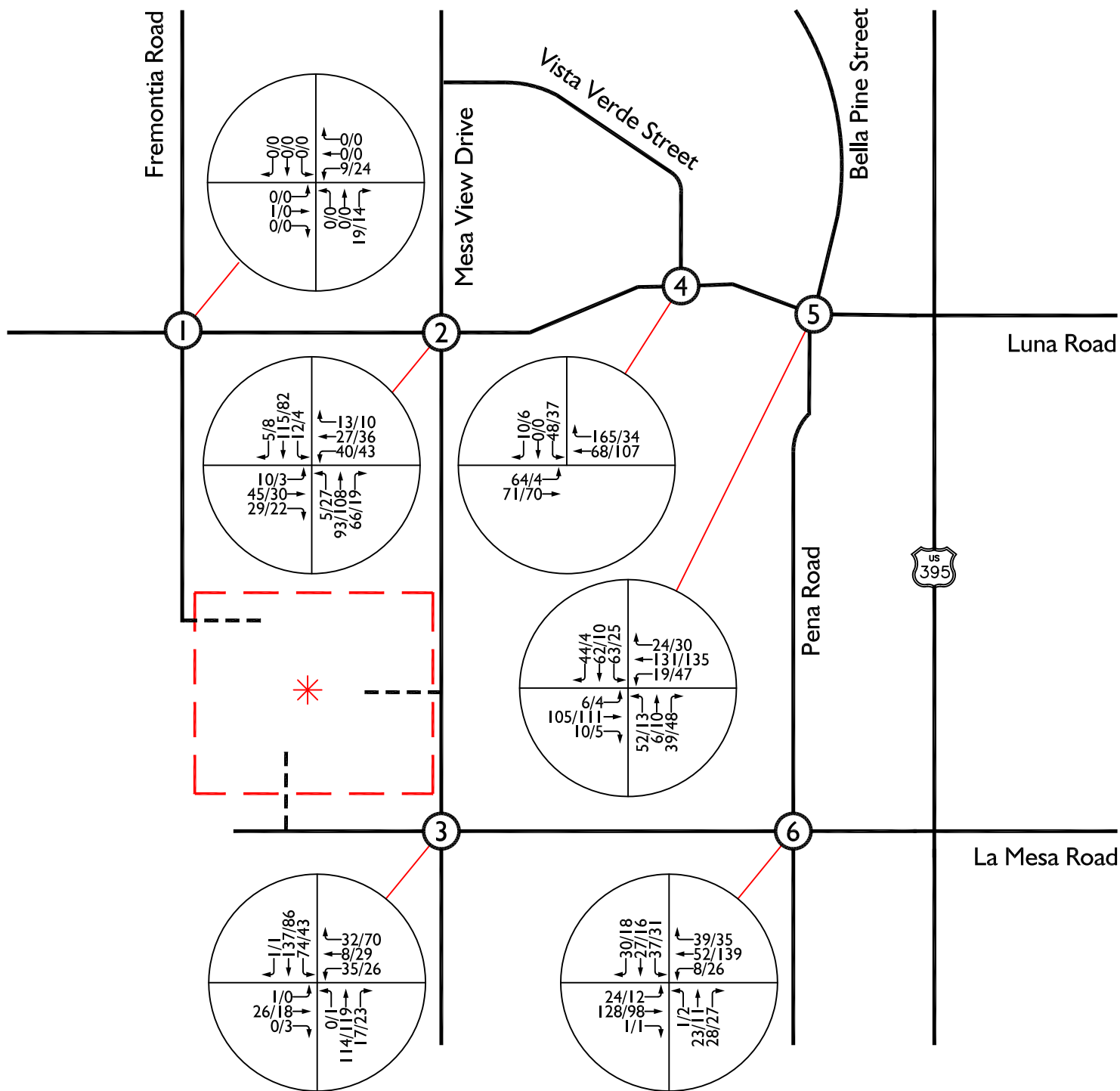


Legend:

10/20 = AM/PM Peak Hour Volumes



Opening Year With Project Traffic Volumes

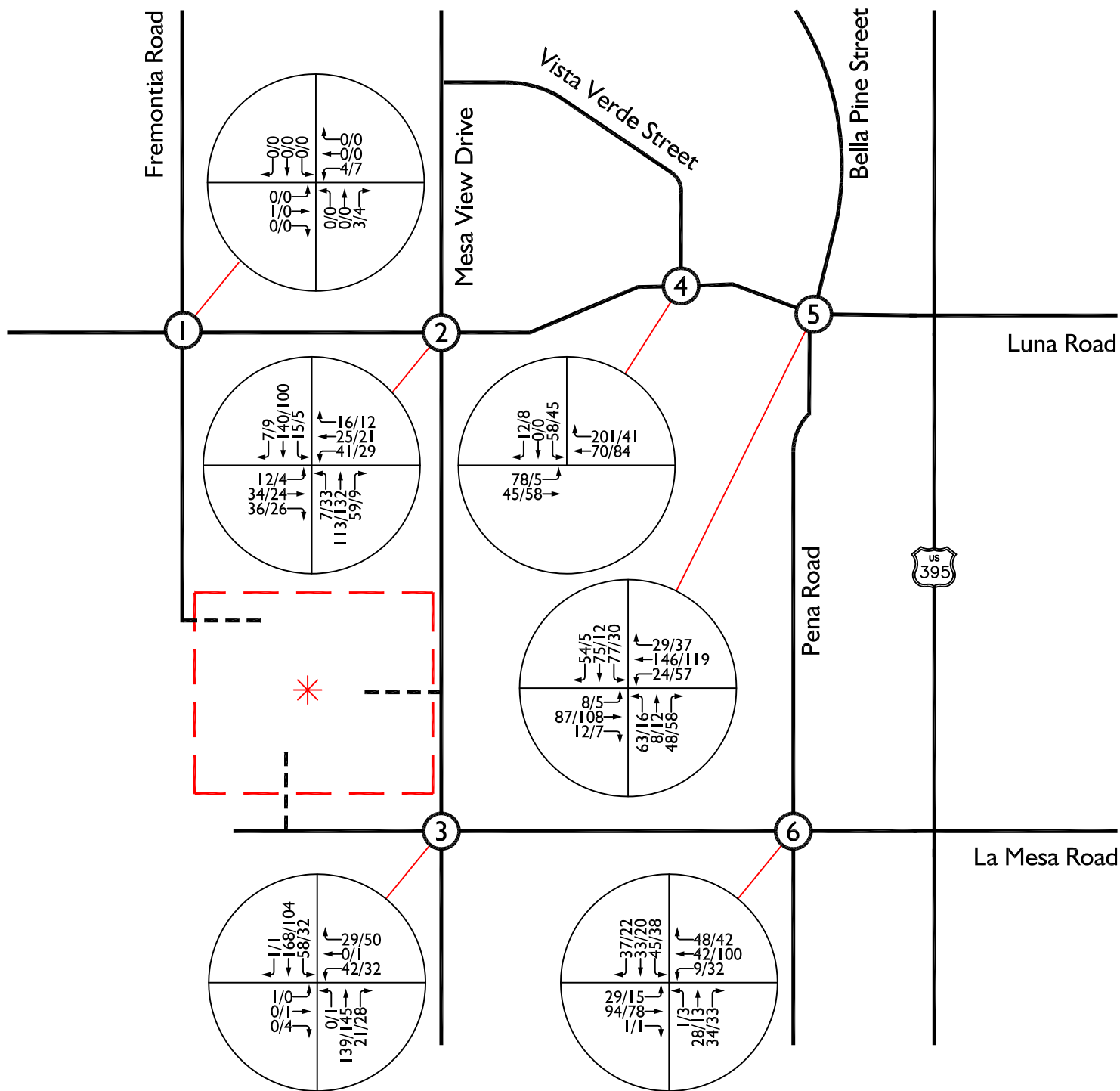


Legend:

10/20 = AM/PM Peak Hour Volumes



Future Year (2035) Without Project Traffic Volumes

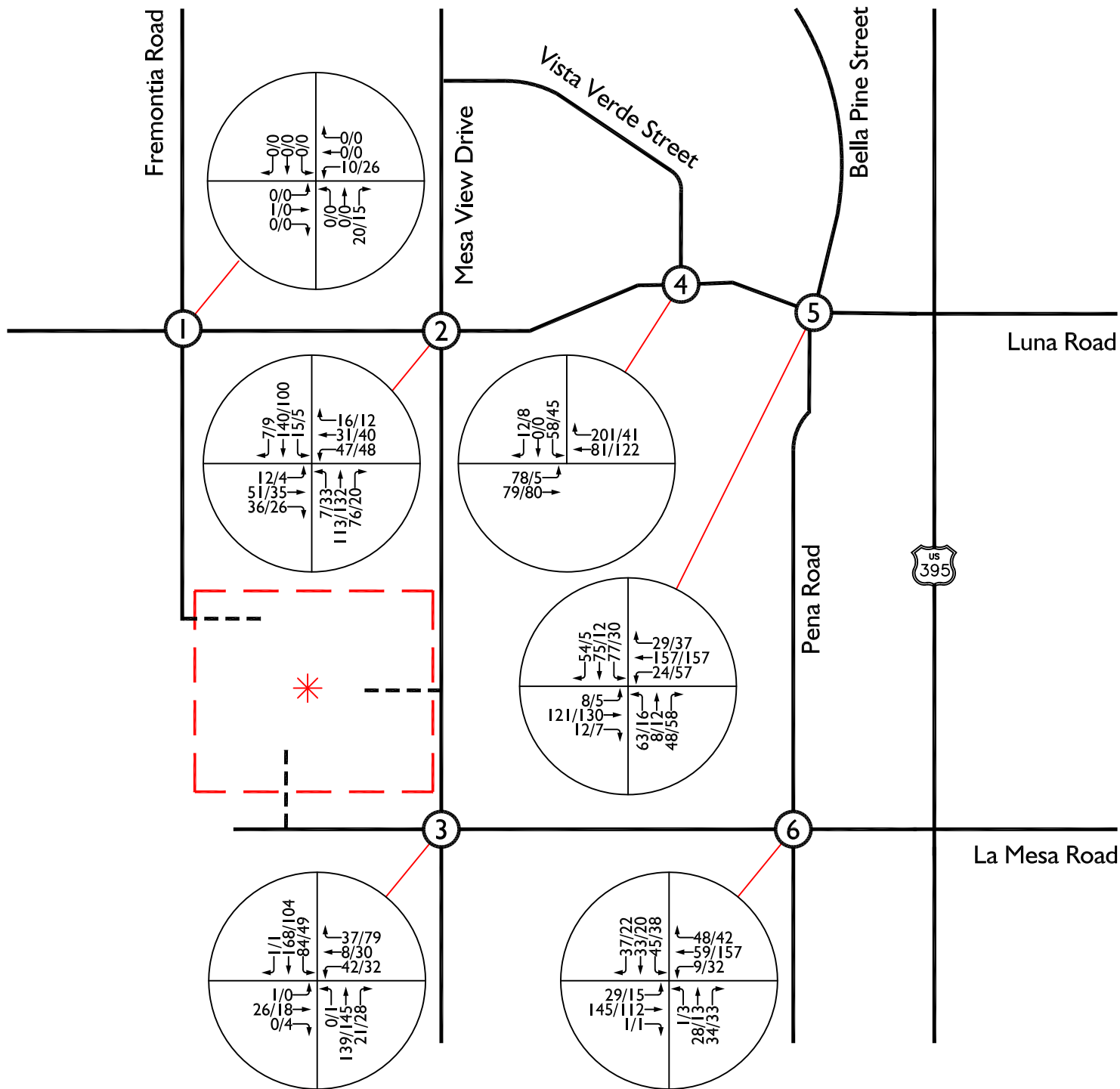


Legend:

10/20 = AM/PM Peak Hour Volumes



Future Year (2035) With Project Traffic Volumes



Legend:

10/20 = AM/PM Peak Hour Volumes



5.0 Level of Service Analysis

This section provides a discussion and summary of the level of service (LOS) analysis for the study intersections.

5.1 Existing Conditions Level of Service

Table 5-1 summarizes the results of the LOS analysis of study intersections for Existing Conditions.

All study intersections are currently operating at an acceptable level of service (LOS D or better) during the peak hours for Existing Conditions.

Detailed LOS analysis sheets for Existing Conditions are contained in Appendix C.

5.2 Existing Plus Project Conditions Level of Service

Table 5-2 summarizes the results of the LOS analysis of study intersections for Existing Plus Project Conditions.

All study intersections are forecast to operate at an acceptable level of service (LOS D or better) during the peak hours for Existing Plus Project Conditions.

The project is not required to contribute towards level of service improvements at any study intersections for Existing Plus Project Conditions.

Detailed LOS analysis sheets for Existing Plus Project Conditions are contained in Appendix D.

5.3 Opening Year (2025) Without Project Conditions Level of Service

Table 5-3 summarizes the results of the LOS analysis of study intersections for Opening Year (2025) Without Project Conditions.

All study intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Opening Year (2025) Without Project Conditions.

Detailed LOS analysis sheets for Opening Year (2025) Without Project Conditions are contained in Appendix E.

5.4 Opening Year (2025) With Project Conditions Level of Service

Table 5-4 summarizes the results of the LOS analysis of study intersections for Opening Year (2025) With Project Conditions.

All study intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Opening Year (2025) With Project Conditions.

Detailed LOS analysis sheets for Opening Year (2025) With Project Conditions are contained in Appendix F.

5.5 Future Year (2035) Without Project Conditions Level of Service

Table 5-5 summarizes the results of the LOS analysis of study intersections for Future Year (2035) Without Project Conditions.

All study intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Future Year (2035) Without Project Conditions.

Detailed LOS analysis sheets for Future Year (2035) Without Project Conditions are contained in Appendix G.

5.6 Future Year (2035) With Project Conditions Level of Service

Table 5-6 summarizes the results of the LOS analysis of study intersections for Future Year (2035) With Project Conditions.

All study intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Future Year (2035) With Project Conditions.

Detailed LOS analysis sheets for Future Year (2035) With Project Conditions are contained in Appendix H.

**Table 5-2
Study Intersection LOS Analysis Summary
Existing (2021) Plus Project Conditions**

Intersection		Traffic Control ³	Methodology ²	Existing (2021) Conditions				Forecast Existing (2021) Plus Project Conditions					
				Delay (Secs) ^{1,2}		Level of Service		Delay (Secs) ^{1,2}		Level of Service		Requires Improvement?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1.	Fremontia Road / Luna Road	CSS	HCM	--	--	--	--	7.3	7.3	A	A	No	No
2.	Mesa View Drive / Luna Road	CSS	HCM	12.5	10.9	B	B	13.4	11.7	B	B	No	No
3.	Mesa View Drive / La Mesa Road	CSS	HCM	8.7	7.9	A	A	13.2	11.3	B	B	No	No
4.	Vista Verde Street / Luna Road	CSS	HCM	13.4	9.6	B	A	14.5	10.0	B	B	No	No
5.	Bella Pine Street / Luna Road	CSS	HCM	18.5	11.8	C	B	21.5	12.7	C	B	No	No
6.	Pena Road / La Mesa Road	CSS	HCM	7.4	7.2	A	A	11.0	11.5	B	B	No	No

¹ Deficient operation shown in **Bold**.

² HCM Analysis Software: Synchro, Version 10.0. Per the 2010 Highway Capacity Manual Edition, intersections with cross-street stop control, the delay and level of service for the worst individual movement

³ CSS = Cross-Street Stop

**Table 5-1
Study Intersection LOS Analysis Summary
Existing (2021) Conditions**

Intersection		Traffic Control ³	Methodolgy ²	Delay (Secs) ¹		Level of Service	
				AM	PM	AM	PM
1.	Fremontia Road / Luna Road	CSS	HCM	--	--	--	--
2.	Mesa View Drive / Luna Road	CSS	HCM	12.5	10.9	B	B
3.	Mesa View Drive / La Mesa Road	AWS	HCM	8.7	7.9	A	A
4.	Vista Verde Street / Luna Road	CSS	HCM	13.4	9.6	B	A
5.	Bella Pine Street / Luna Road	CSS	HCM	18.5	11.8	C	B
6.	Pena Road / La Mesa Road	CSS	HCM	7.4	7.2	A	A

¹ Deficient operation shown in **Bold**.

² HCM Analysis Software: Synchro, Version 10.0. Per the 2010 Highway Capacity Manual Edition, intersections with cross-street stop control, the

³ CSS = Cross-Street Stop

**Table 5-3
Study Intersection LOS Analysis Summary
Opening Year (2025) Without Project Conditions**

Intersection		Traffic Control ³	Methodolgy ²	Delay (Secs) ¹		Level of Service	
				AM	PM	AM	PM
1.	Fremontia Road / Luna Road	CSS	HCM	--	--	--	--
2.	Mesa View Drive / Luna Road	CSS	HCM	13.1	11.2	B	B
3.	Mesa View Drive / La Mesa Road	CSS	HCM	9.0	8.0	A	A
4.	Vista Verde Street / Luna Road	CSS	HCM	14.2	9.7	B	A
5.	Bella Pine Street / Luna Road	CSS	HCM	21.2	12.3	C	B
6.	Pena Road / La Mesa Road	CSS	HCM	7.4	7.2	A	A

¹ Deficient operation shown in **Bold**.

² HCM Analysis Software: Synchro, Version 10.0. Per the 2010 Highway Capacity Manual Edition, intersections with cross-street stop control, the

³ CSS = Cross-Street Stop

**Table 5-4
Study Intersection LOS Analysis Summary
Opening Year (2025) With Project Conditions**

Intersection		Traffic Control ³	Methodology ²	Opening Year (2025) Without Project Conditions				Opening Year (2025) With Project Conditions					
				Delay (Secs) ^{1,2}		Level of Service		Delay (Secs) ^{1,2}		Level of Service		Requires Improvement?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1.	Fremontia Road / Luna Road	CSS	HCM	--	--	--	--	7.3	7.3	A	A	No	No
2.	Mesa View Drive / Luna Road	CSS	HCM	13.1	11.2	B	B	14.1	12.1	B	B	No	No
3.	Mesa View Drive / La Mesa Road	CSS	HCM	9.0	8.0	A	A	13.8	11.6	B	B	No	No
4.	Vista Verde Street / Luna Road	CSS	HCM	14.2	9.7	B	A	15.5	10.2	C	B	No	No
5.	Bella Pine Street / Luna Road	CSS	HCM	21.2	12.3	C	B	25.6	13.2	D	B	No	No
6.	Pena Road / La Mesa Road	CSS	HCM	7.4	7.2	A	A	11.3	11.7	B	B	No	No

¹ Deficient operation shown in **Bold**.

² HCM Analysis Software: Synchro, Version 10.0. Per the 2010 Highway Capacity Manual Edition, intersections with cross-street stop control, the delay and level of service for the worst individual movement

³ CSS = Cross-Street Stop

**Table 5-5
Study Intersection LOS Analysis Summary
Future Year (2035) Without Project Conditions⁴**

Intersection		Traffic Control ³	Methodology ²	Delay (Secs) ¹		Level of Service	
				AM	PM	AM	PM
1.	Fremontia Road / Luna Road	CSS	HCM	--	--	--	--
2.	Mesa View Drive / Luna Road	CSS	HCM	12.3	11.7	B	B
3.	Mesa View Drive / La Mesa Road	CSS	HCM	9.1	8.3	A	A
4.	Vista Verde Street / Luna Road	CSS	HCM	11.7	9.7	B	A
5.	Bella Pine Street / Luna Road	CSS	HCM	14.0	12.8	B	B
6.	Pena Road / La Mesa Road	CSS	HCM	7.5	7.3	A	A

¹ Deficient operation shown in **Bold**.

² HCM Analysis Software: Synchro, Version 10.0. Per the 2010 Highway Capacity Manual Edition, intersections with cross-street stop control, the

³ CSS = Cross-Street Stop

⁴ Improvements in LOS for future year scenarios is due to improvements in Peak Hour Factor (PHF) per the guidelines detailed in the San Bernardino Congestion Management Program

**Table 5-6
Study Intersection LOS Analysis Summary
Future Year (2035) With Project Conditions⁴**

Intersection		Traffic Control ³	Methodology ²	Future Year (2035) Without Project Conditions				Future Year (2035) With Project Conditions					
				Delay (Secs) ^{1,2}		Level of Service		Delay (Secs) ^{1,2}		Level of Service		Requires Improvement?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1.	Fremontia Road / Luna Road	CSS	HCM	--	--	--	--	7.2	7.3	A	A	No	No
2.	Mesa View Drive / Luna Road	CSS	HCM	12.3	11.7	B	B	12.9	12.8	B	B	No	No
3.	Mesa View Drive / La Mesa Road	CSS	HCM	9.1	8.3	A	A	13.9	12.3	B	B	No	No
4.	Vista Verde Street / Luna Road	CSS	HCM	11.7	9.7	B	A	12.2	10.1	B	B	No	No
5.	Bella Pine Street / Luna Road	CSS	HCM	14.0	12.8	B	B	14.9	13.7	B	B	No	No
6.	Pena Road / La Mesa Road	CSS	HCM	7.5	7.3	A	A	11.9	12.5	B	B	No	No

¹ Deficient operation shown in **Bold**.

² HCM Analysis Software: Synchro, Version 10.0. Per the 2010 Highway Capacity Manual Edition, intersections with cross-street stop control, the delay and level of service for the worst individual movement

³ CSS = Cross-Street Stop

⁴ Improvements in LOS for future year scenarios is due to improvements in Peak Hour Factor (PHF) per the guidelines detailed in the San Bernardino Congestion Management Program

6.0 MUTCD Traffic Signal Warrant Analysis

6.1 Peak Hour Traffic Signal Warrant Analysis

The following study intersections have been evaluated for signalization based on the peak hour signal warrant criteria and procedures contained in the *California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition*:

- Mesa View Drive / La Mesa Road.

Table 6-1 summarizes the results of the *MUTCD* peak hour traffic signal warrant analysis for all analysis scenarios evaluated in this study.

**Table 6-1
Peak Hour Signal Warrant Analysis**

Study Intersection	Intersection Meets Peak Hour Warrant Criteria? ¹					
	Existing Conditions	Existing Plus Project Conditions	Year 2025 without Project	Year 2025 with Project	Year 2035 without Project	Year 2035 with Project
3. Mesa View Drive / Mesa Linda Road	No/No	No/No	No/No	No/No	No/No	No/No

¹ No/No = AM/PM Peak Hour

Detailed MUTCD signal warrant analysis worksheets are included in Appendix I.

The results of the analysis indicate that the existing and future project peak hour traffic volume at the intersection of Mesa View Drive at Mesa Linda Road does not satisfy the traffic signal warrant.

6.2 All-Way Stop Warrant Analysis

RK has performed preliminary all-way stop warrant analysis for the intersection of Mesa View Drive at Mesa Linda Road. Due to the current vacancy at the project site location as well as difficulties with projection of future pedestrian volumes and accident collision data, the analysis is considered preliminary.

To begin, based on the existing and future projected peak hour approach volume, it does not appear that the minimum eight average entering volume will be met. The intersection is shown to operate acceptable level of service under future conditions, hence based on the projections from this study it would not be necessary.

Additionally, the intersection does not warrant a traffic signal hence it does not have an urgent need for a four-way stop as an interim measure.

RK has obtained collision data from the City of Victorville for 2018-2021. According to the collision data and as summarized in Table 6-2, zero (0) reported collisions have occurred within 250 feet of the intersection in any 12 month period. Hence, the number of correctable accidents does not meet the criteria and would not warrant an AWS control.

TABLE 6-2
Study Intersection Collision Summary
2018 - 2021

Intersection	Year				Total
	2018	2019	2020	2021	
3. Mesa View Drive / Mesa Linda Road	0	0	0	0	0

The northeast, northwest, and southwest corner of the study intersection are currently vacant lots. As such, there is nothing that would serve as a sight distance issue for drivers approaching the intersection. There are also no vertical or horizontal curves present that would inhibit sight distance. Future buildout of the roadways at this intersection should be designed to Victorville standards with adequate setbacks that will accommodate sufficient sight distance. Hence, an AWS is not warranted based on inadequate sight distance.

As shown in Exhibit 3-3, La Mesa Road is classified as a residential arterial and Mesa View Drive is classified as a collector street. Since the study intersection is not an intersection of two (2) residential collector streets, the criteria for an AWS is not met and therefore an AWS is not warranted.

Based on a preliminary review of the AWS warrant criteria (traffic volume, traffic signal warranted, number of correctable accidents, sight distance conflicts, the intersection of two residential collector streets, and etc.), an all-way stop control is not recommended for existing conditions. However, once the project, the surrounding uses, and subject roadways are built-out and fully operational, it is recommended that a full AWS warrant analysis be performed in order to accurately determine the necessity for an all-way stop control.

7.0 Vehicle Miles Traveled (VMT) Analysis

Effective July 1st, 2020, the longstanding metric of roadway level of service (LOS), which is typically measured in terms of vehicle delay, roadway capacity and congestion, will no longer be considered a significant impact under the California Environmental Quality Act (CEQA). Pursuant to CEQA Guidelines, Section 15064.3, Vehicle Miles Traveled (VMT) is now the most appropriate measure of transportation impacts.

The proposed project is subject to a VMT analysis pursuant to the latest City of Victorville Vehicle Miles Traveled (VMT) Analysis Guidelines, dated June 16, 2020.

RK has previously prepared the *TTM 20488 (Vista Verde) Vehicle Miles Traveled Analysis, City of Victorville, January 13, 2022* for the purpose of analyzing VMT impacts under CEQA.

The findings from this report show that the project is not expected to exceed the City of Victorville VMT thresholds of significance and the project impact to VMT is less than significant.

A copy of the VMT analysis report is provided in Appendix J.

8.0 Findings & Recommendations

This traffic study has been prepared in accordance with the *City of Victorville General Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service and Improvement Needs, January 2005* (TIA Guidelines) and the scope of work set forth with City staff prior to initiating the analysis. The following findings have been determined based upon this study:

1. Based on the ITE trip generation rates, the proposed project is forecast to generate approximately 1,444 daily trips which include approximately 113 AM peak hour trip and approximately 151 PM peak hour trips.
2. All study intersections are forecast to operate at an acceptable level of service, during the peak hours for all existing and future analysis scenarios, with and without the project.
3. No intersection additional improvements have been identified.
4. The intersection of Mesa View Drive and La Mesa Road does not meet the peak hour traffic signal warrant criteria based upon existing and future volume projects.
5. A full AWS warrant at the intersection of intersection of Mesa View Drive and La Mesa Road should be performed once the project is fully operational and the roadways are built at full capacity.
6. As shown in the *TTM 20488 (Vista Verde) Vehicle Miles Traveled Analysis, City of Victorville, January 13, 2022*, the project is not expected to exceed the City of Victorville's VMT thresholds of significance. As a result, the project impact to VMT is less than significant.

Based upon this level of service analysis, the project can be accommodated within the City of Victorville planned circulation system.

Appendix A

Approved Scope of Work

**Vista Verde Residential Project
Traffic Impact Study
Updated Scoping Agreement**

October 22, 2021

The following provides information on the proposed project, summarizes the analysis scope, parameters, and assumptions for review and approval, and also includes request for information on items related to the study.

A. Project Description: The proposed Vista Verde Residential Project (hereinafter referred to as project) is located along the northwest side of Mesa View Drive and La Mesa Road, in the City of Victorville.

The proposed project site is currently vacant. The project consists of constructing and operating 153 single family residential dwelling units. The project is consistent with the general plan land use designation (Single Family – R1).

Main access for the project is planned via the following:

- One (1) full-access unsignalized intersections along Mesa View Drive.
- One (1) full-access unsignalized intersections along La Mesa Road.
- One (1) full-access unsignalized intersections along Fremontia Road.

The project is planned to open in 2025 and will be evaluated in one single phase.

Exhibit A shows the location map of the proposed project. Exhibit B shows the proposed site plan.

B. Project Trip Generation: Trip generation represents the amount of traffic that is attracted and produced by a development.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual*. The latest and most recent version (10th Edition, 2017) ITE Manual has been utilized for this scoping

agreement. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Table 1 shows the ITE trip generation rates utilized for the trip generation analysis of the proposed project land use.

**Table 1
ITE Trip Generation Rates¹**

Land Use	Units	ITE Code	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Single Family Homes	DU	210	0.19	0.56	0.74	0.62	0.37	0.99	9.44

¹ Source: 2017 ITE Trip Generation Manual (10th Edition).

² DU = Dwelling Units

Table 2 shows the trip generation for the proposed project utilizing the trip generation rates shown in Table 1.

**Table 2
Proposed Project Trip Generation¹**

Land Use (ITE Code)	Quantity	Units	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Single Family Homes (210)	153	DU	28	85	113	95	56	151	1,444

¹ Source: 2017 ITE Trip Generation Manual (10th Edition).

² DU = Dwelling Units

As shown in Table 2, based on the ITE trip generation rates, the proposed project is forecast to generate approximately 1,444 daily trips which include approximately 113 AM peak hour trips and approximately 151 PM peak hour trips.

C. Project Trip Distribution: Exhibit C shows the project trip distribution for the proposed project.

D. Study Intersections: The analysis will evaluate the following three (3) study intersections:

1. Fremonita Road / Luna Road;
2. Mesa View Drive / Luna Road;

3. Mesa View Drive / La Mesa Road;
4. Vista Verde Street / Luna Road.
5. Bella Pine Street / Luna Road;
6. Pena Road / La Mesa Road; and

E. Analysis Scenarios: The analysis will evaluate traffic conditions for the following scenarios during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM):

- Existing Conditions;
- Existing Plus Project Conditions;
- Project Opening Year Without Related Projects Without Project Conditions;
- Project Opening Year Without Related Projects With Project Conditions;
- Future Year (2035) Without Related Projects Without Project Conditions;
- Future Year (2035) Without Related Projects With Project Conditions;

F. Traffic Analysis Parameters: The analysis will utilize the following parameters:

- Synchro analysis software and the Highway Capacity Manual 6th Editions (HCM 6) methodology.
- Optimized signal timing;

G. Existing Traffic Counts: The analysis will utilize new traffic counts. The counts will not be collected by vehicle classification.

- AM peak period counts will be collected during one typical weekday from 7:00 AM to 9:00 AM.

- PM peak period counts will be collected during one typical weekday from 4:00 PM to 6:00 PM.

H. Forecast Opening Year (2025) Conditions Traffic Volumes: Opening year (2025) background traffic volumes will be derived by applying an annual growth rate of two percent (2%) per year to existing traffic volumes and addition of traffic associated with specific cumulative projects in the area provided by the City.

I. Future Year (2035) Conditions Traffic Volumes: Future year (2035) background traffic volumes will be derived by applying an annual growth rate of two percent (2%) per year to existing traffic volumes and addition of traffic associated with specific cumulative projects in the area provided by the City.

J. Performance Criteria:

City of Victorville: Acceptable LOS of D or better.

K. Threshold for Requiring LOS Improvement:

The City of Victorville has adopted level of service “D” or better as acceptable operating conditions during the peak hour. In accordance with the City’s guidelines which are identified in the Circulation Element of the City of Victorville General Plan 2030, the following types of traffic impacts are significant under California Environmental Quality Act (CEQA):

- If a development project would worsen an intersection peak hour LOS to E or worse, the level of service needs to be improved to achieve acceptable level of service by identifying improvements.
- If a development project would worsen an already deficient intersection by two percent or more, improvements needs to be identified.

These thresholds of significance apply to both intersections and roadway segments.

L. Traffic Signal Warrant Analysis:

The following study intersection will be evaluated for peak hour traffic signal and all-way stop warrants, for each analysis scenario, utilizing the Caltrans traffic signal and all-way stop warrants criteria:

- Mesa View Drive / La Mesa Road.

M. VMT Analysis:

Effective July 1st, 2020, the longstanding metric of roadway level of service (LOS), which is typically measured in terms of vehicle delay, roadway capacity and congestion, will no longer be considered a significant impact under the California Environmental Quality Act (CEQA). Pursuant to CEQA Guidelines, Section 15064.3, VMT is now the most appropriate measure of transportation impacts.

The City of Victorville adheres to the guidelines set forth by the City of Victorville Vehicle Miles Traveled (VMT) Analysis Guidelines, dated June 16, 2020, to provide recommendations in the form of thresholds of significance and methodology for identifying VMT related impacts. The proposed project is subject to a VMT analysis and will adhere to the recommendations and practices described in the Vehicle Miles Traveled (VMT) analysis, dated June 16, 2020.

Based on the analysis methodology described in the Victorville Vehicle Miles Traveled (VMT) analysis guidelines regarding VMT, project screening procedures have been implemented to identify projects that may be presumed to have a less than significant impact absent substantial evidence to the contrary and will be exempted from further project-level VMT assessment.

Based on the review of the San Bernardino County transportation Authority (SBCTA) VMT screening tool and website, the project site has the following VMT characteristics per service population:

Assessor Parcel Number (APN)	309635102
Traffic Analysis Zone (TAZ)	53898101
TAZ VMT	23.9
Jurisdiction VMT	23.5
% Difference	1.53%
VMT Metric	PA VMT Per Service Population
Threshold	23.5

As shown, the project is 1.53% over threshold. RK will mitigate the 1.53% by making recommendations to reduce the VMT by 1.53% or more.

SBCTA VMT Screening Tool output is shown in the attachments.

N. Request for Information: Please provide information on the following for use in the traffic study:

- Information on cumulative projects that need to be included in the traffic analysis (location, land use type(s), and land use quantities); and
- Information on future roadway and circulation system modifications/improvements that are planned within the study area and would potentially affect the analysis.

If you have any questions, or would like further review, please call us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.



Alex Tabrizi, PE, TE
Principal

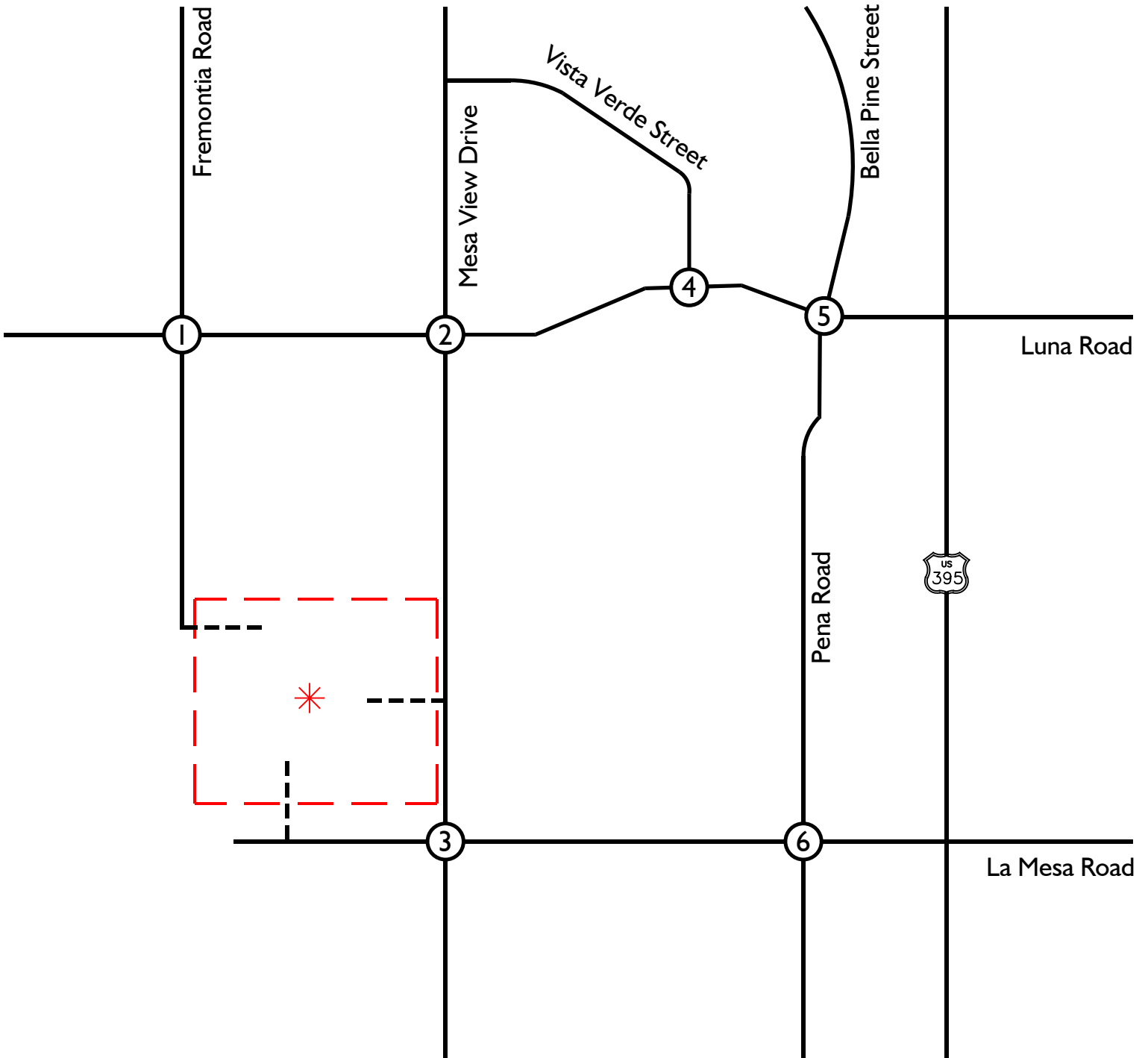
Attachments

Approved by:

City of Victorville

Date

Attachments



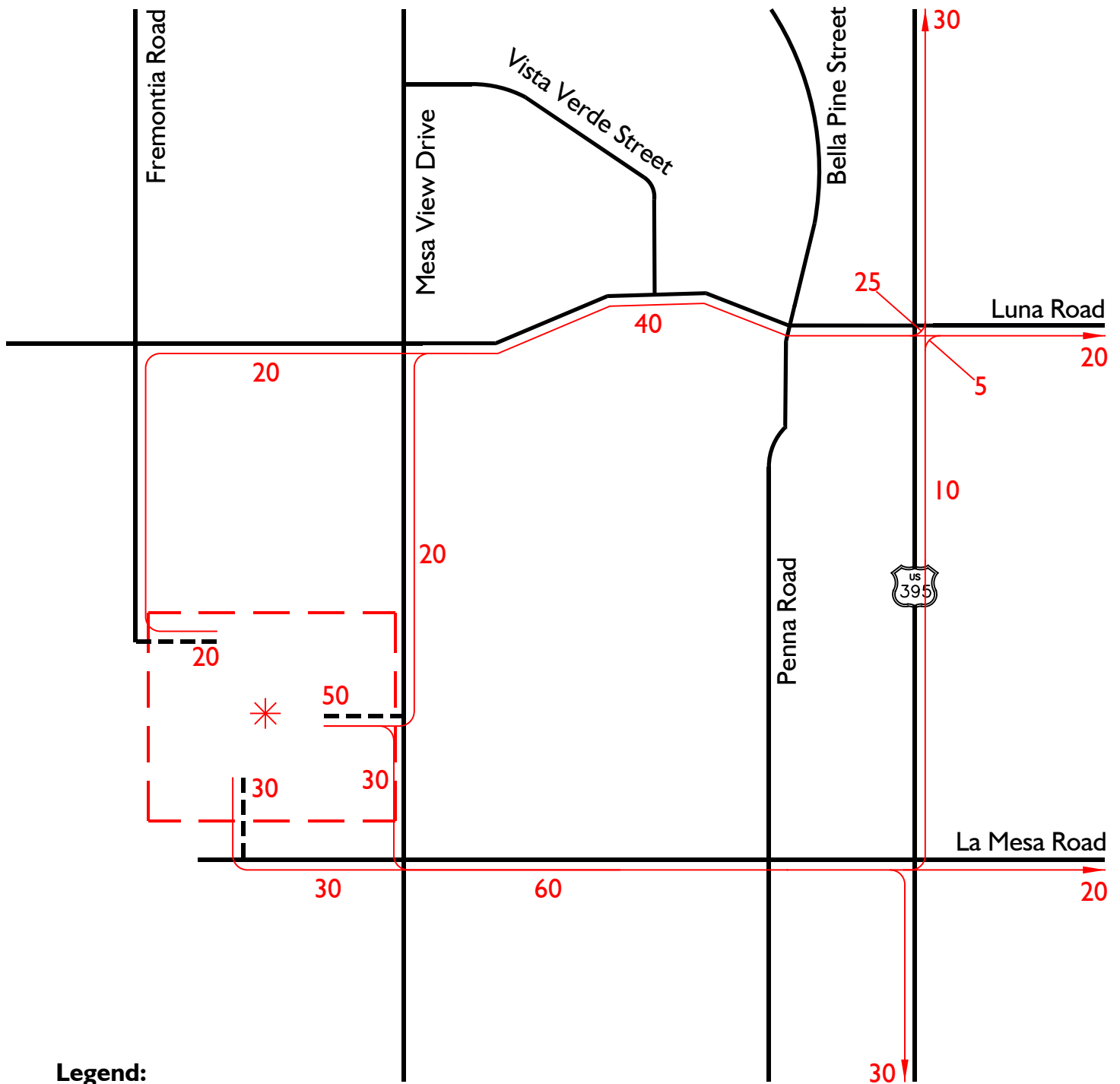
Legend:

- ① = Study Area Intersection
- * = Project Site
- - - = Project Site Boundary
- - - = Project Access Driveway





Exhibit C
Project Trip Distribution



Legend:

- 10 = Percent To/From the Project
- * = Project Site
- - - = Project Site Boundary
- - - = Project Access Driveway



Appendix B

Existing Traffic Count Worksheets

City of Victorville
 N/S: Fremonita Road
 E/W: Luna Road
 Weather: Clear

File Name : 01_VIC_Fremonita_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Luna Road Westbound			Fremonita Road Northbound			Luna Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	2	0	2	0	0	0	0	0	0	2
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	1	0	0	0	0	0	0	1
Total	4	0	4	0	0	0	0	0	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	2	0	2	0	2	2	0	0	0	4
Total	3	0	3	0	2	2	1	0	1	6
Grand Total	7	0	7	0	2	2	1	0	1	10
Apprch %	100	0		0	100		100	0		
Total %	70	0	70	0	20	20	10	0	10	

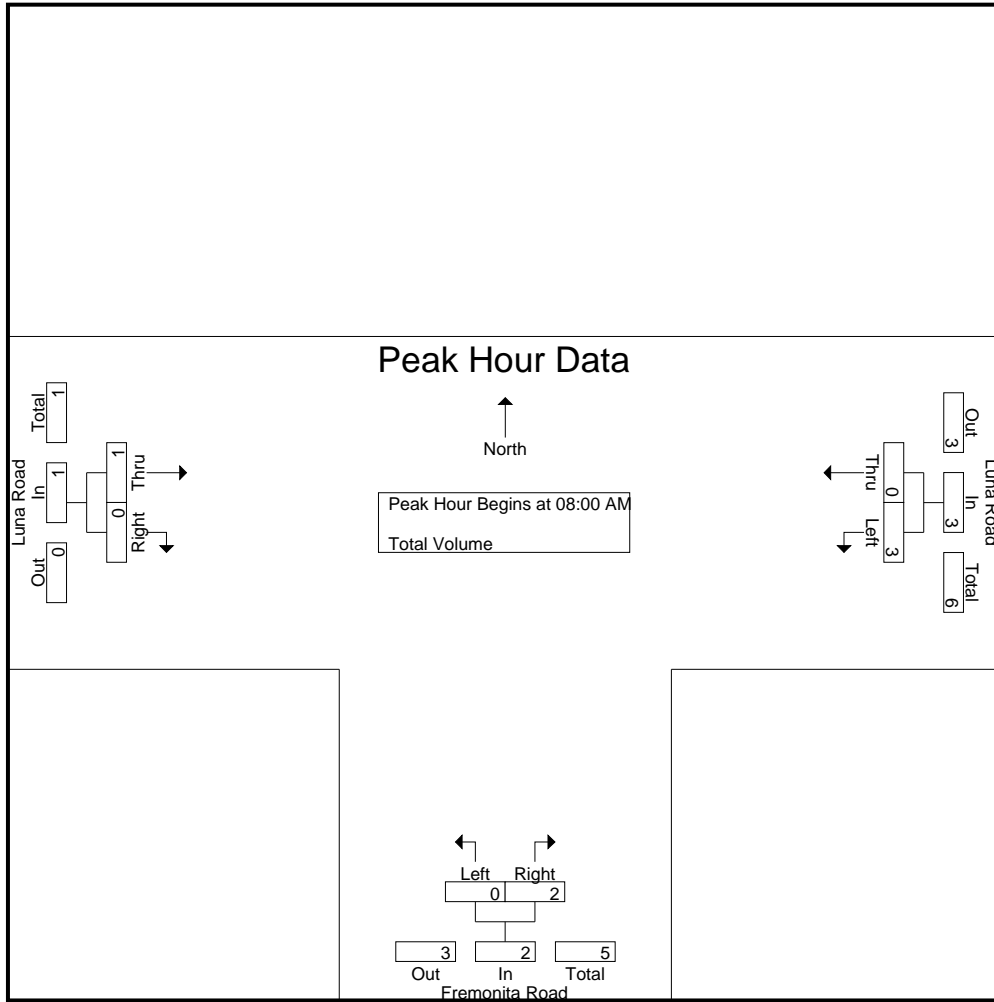
Start Time	Luna Road Westbound			Fremonita Road Northbound			Luna Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	2	0	2	0	2	2	0	0	0	4
Total Volume	3	0	3	0	2	2	1	0	1	6
% App. Total	100	0		0	100		100	0		
PHF	.375	.000	.375	.000	.250	.250	.250	.000	.250	.375

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00 AM

City of Victorville
 N/S: Fremonita Road
 E/W: Luna Road
 Weather: Clear

File Name : 01_VIC_Fremonita_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:45 AM		
+0 mins.	2	0	2	0	0	0	0	0	0
+15 mins.	1	0	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	1	0	2	2	1	0	1
Total Volume	4	0	4	0	2	2	1	0	1
% App. Total	100	0		0	100		100	0	
PHF	.500	.000	.500	.000	.250	.250	.250	.000	.250

City of Victorville
 N/S: Fremonita Road
 E/W: Luna Road
 Weather: Clear

File Name : 01_VIC_Fremonita_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Luna Road Westbound			Fremonita Road Northbound			Luna Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	0	1	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	3	0	3	0	1	1	0	0	0	4
04:45 PM	1	0	1	0	0	0	0	0	0	1
Total	5	0	5	0	1	1	0	0	0	6
05:00 PM	0	0	0	0	1	1	0	0	0	1
05:15 PM	1	0	1	0	1	1	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	4	0	4	0	1	1	0	0	0	5
Total	5	0	5	0	3	3	0	0	0	8
Grand Total	10	0	10	0	4	4	0	0	0	14
Apprch %	100	0		0	100		0	0		
Total %	71.4	0	71.4	0	28.6	28.6	0	0	0	

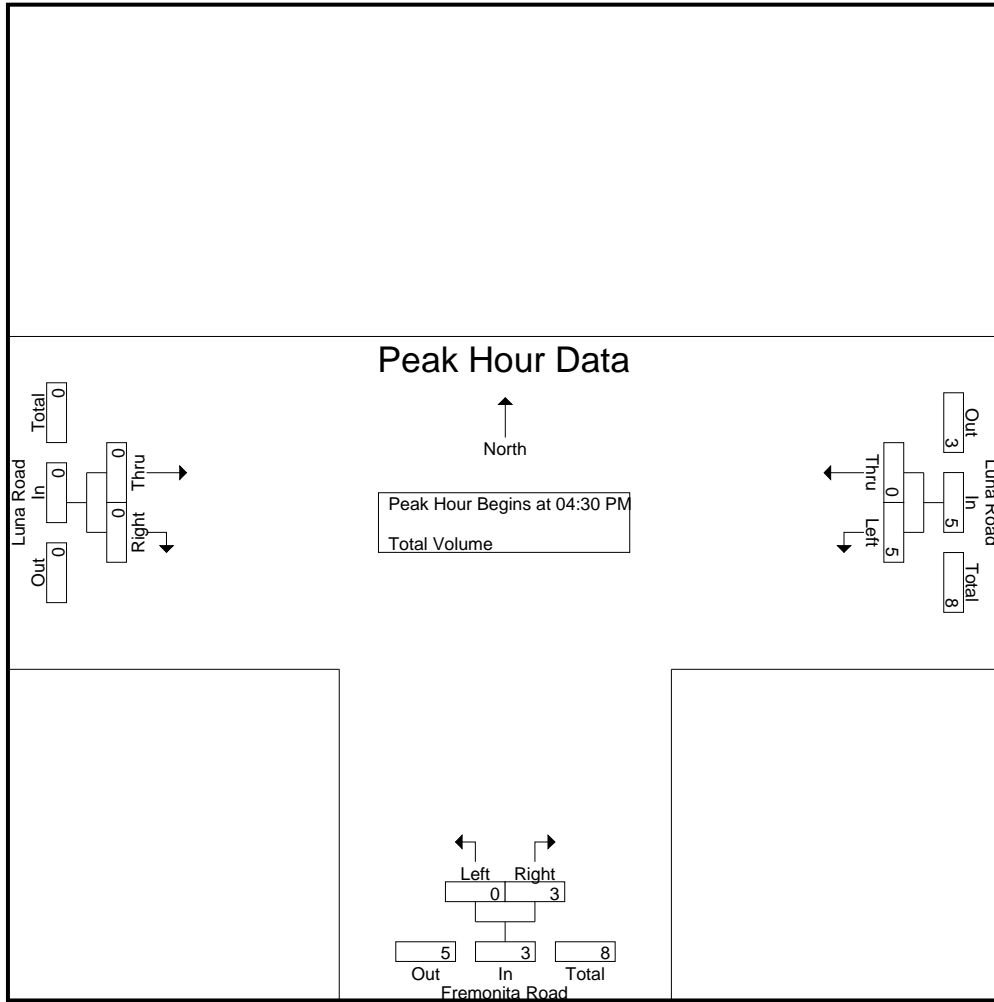
Start Time	Luna Road Westbound			Fremonita Road Northbound			Luna Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:30 PM	3	0	3	0	1	1	0	0	0	4
04:45 PM	1	0	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	1	1	0	0	0	1
05:15 PM	1	0	1	0	1	1	0	0	0	2
Total Volume	5	0	5	0	3	3	0	0	0	8
% App. Total	100	0		0	100		0	0		
PHF	.417	.000	.417	.000	.750	.750	.000	.000	.000	.500

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM

City of Victorville
 N/S: Fremonita Road
 E/W: Luna Road
 Weather: Clear

File Name : 01_VIC_Fremonita_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			04:30 PM			04:00 PM		
+0 mins.	1	0	1	0	1	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	3	0	3	0	1	1	0	0	0
+45 mins.	1	0	1	0	1	1	0	0	0
Total Volume	5	0	5	0	3	3	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.417	.000	.417	.000	.750	.750	.000	.000	.000

City of Victorville
 N/S: Mesa View Drive
 E/W: Luna Road
 Weather: Clear

File Name : 02_VIC_Mesa View_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Mesa View Drive Southbound				Luna Road Westbound				Mesa View Drive Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	9	1	11	2	8	1	11	4	11	6	21	0	6	2	8	51
07:15 AM	0	16	0	16	3	6	1	10	0	25	4	29	2	4	8	14	69
07:30 AM	2	32	2	36	7	3	2	12	1	14	10	25	2	10	4	16	89
07:45 AM	7	30	2	39	14	4	6	24	0	30	22	52	5	7	10	22	137
Total	10	87	5	102	26	21	10	57	5	80	42	127	9	27	24	60	346
08:00 AM	2	28	1	31	7	6	3	16	4	17	9	30	0	5	5	10	87
08:15 AM	1	22	2	25	7	2	0	9	4	15	2	21	0	2	6	8	63
08:30 AM	4	24	3	31	0	4	2	6	1	16	3	20	2	3	5	10	67
08:45 AM	0	10	0	10	4	3	1	8	4	11	2	17	0	6	6	12	47
Total	7	84	6	97	18	15	6	39	13	59	16	88	2	16	22	40	264
Grand Total	17	171	11	199	44	36	16	96	18	139	58	215	11	43	46	100	610
Apprch %	8.5	85.9	5.5		45.8	37.5	16.7		8.4	64.7	27		11	43	46		
Total %	2.8	28	1.8	32.6	7.2	5.9	2.6	15.7	3	22.8	9.5	35.2	1.8	7	7.5	16.4	

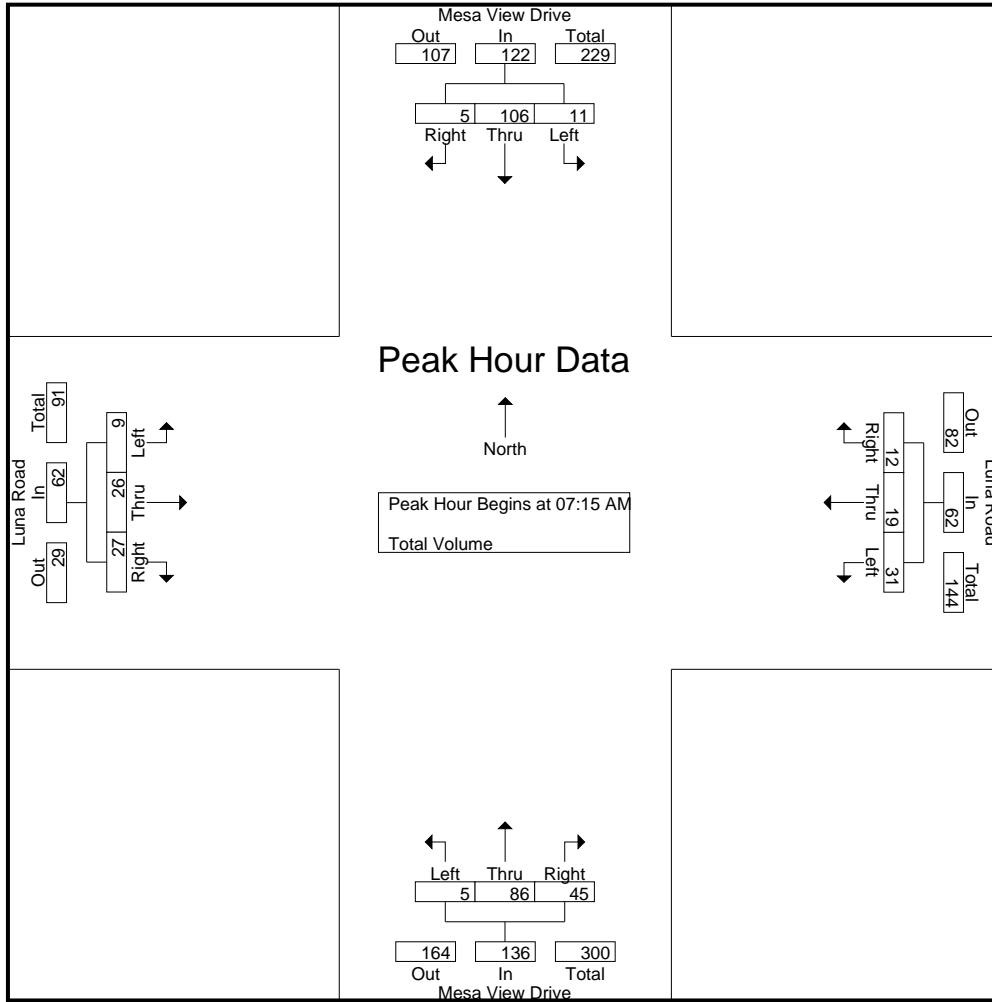
Start Time	Mesa View Drive Southbound				Luna Road Westbound				Mesa View Drive Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:15 AM	0	16	0	16	3	6	1	10	0	25	4	29	2	4	8	14	69
07:30 AM	2	32	2	36	7	3	2	12	1	14	10	25	2	10	4	16	89
07:45 AM	7	30	2	39	14	4	6	24	0	30	22	52	5	7	10	22	137
08:00 AM	2	28	1	31	7	6	3	16	4	17	9	30	0	5	5	10	87
Total Volume	11	106	5	122	31	19	12	62	5	86	45	136	9	26	27	62	382
% App. Total	9	86.9	4.1		50	30.6	19.4		3.7	63.2	33.1		14.5	41.9	43.5		
PHF	.393	.828	.625	.782	.554	.792	.500	.646	.313	.717	.511	.654	.450	.650	.675	.705	.697

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

City of Victorville
 N/S: Mesa View Drive
 E/W: Luna Road
 Weather: Clear

File Name : 02_VIC_Mesa View_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	2	32	2	36	3	6	1	10	0	25	4	29	2	4	8	14
+15 mins.	7	30	2	39	7	3	2	12	1	14	10	25	2	10	4	16
+30 mins.	2	28	1	31	14	4	6	24	0	30	22	52	5	7	10	22
+45 mins.	1	22	2	25	7	6	3	16	4	17	9	30	0	5	5	10
Total Volume	12	112	7	131	31	19	12	62	5	86	45	136	9	26	27	62
% App. Total	9.2	85.5	5.3		50	30.6	19.4		3.7	63.2	33.1		14.5	41.9	43.5	
PHF	.429	.875	.875	.840	.554	.792	.500	.646	.313	.717	.511	.654	.450	.650	.675	.705

City of Victorville
 N/S: Mesa View Drive
 E/W: Luna Road
 Weather: Clear

File Name : 02_VIC_Mesa View_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Mesa View Drive Southbound				Luna Road Westbound				Mesa View Drive Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	2	13	2	17	1	4	1	6	8	20	3	31	3	4	4	11	65
04:15 PM	0	24	5	29	10	4	1	15	5	24	3	32	0	4	6	10	86
04:30 PM	1	15	2	18	9	7	2	18	11	24	2	37	1	4	5	10	83
04:45 PM	0	17	0	17	0	1	4	5	4	25	1	30	0	6	7	13	65
Total	3	69	9	81	20	16	8	44	28	93	9	130	4	18	22	44	299
05:00 PM	3	20	0	23	3	4	2	9	5	27	1	33	2	4	2	8	73
05:15 PM	2	17	2	21	1	4	1	6	5	25	4	34	2	7	4	13	74
05:30 PM	1	15	4	20	3	4	3	10	1	15	2	18	2	4	2	8	56
05:45 PM	1	12	4	17	4	3	2	9	7	21	9	37	7	6	3	16	79
Total	7	64	10	81	11	15	8	34	18	88	16	122	13	21	11	45	282
Grand Total	10	133	19	162	31	31	16	78	46	181	25	252	17	39	33	89	581
Apprch %	6.2	82.1	11.7		39.7	39.7	20.5		18.3	71.8	9.9		19.1	43.8	37.1		
Total %	1.7	22.9	3.3	27.9	5.3	5.3	2.8	13.4	7.9	31.2	4.3	43.4	2.9	6.7	5.7	15.3	

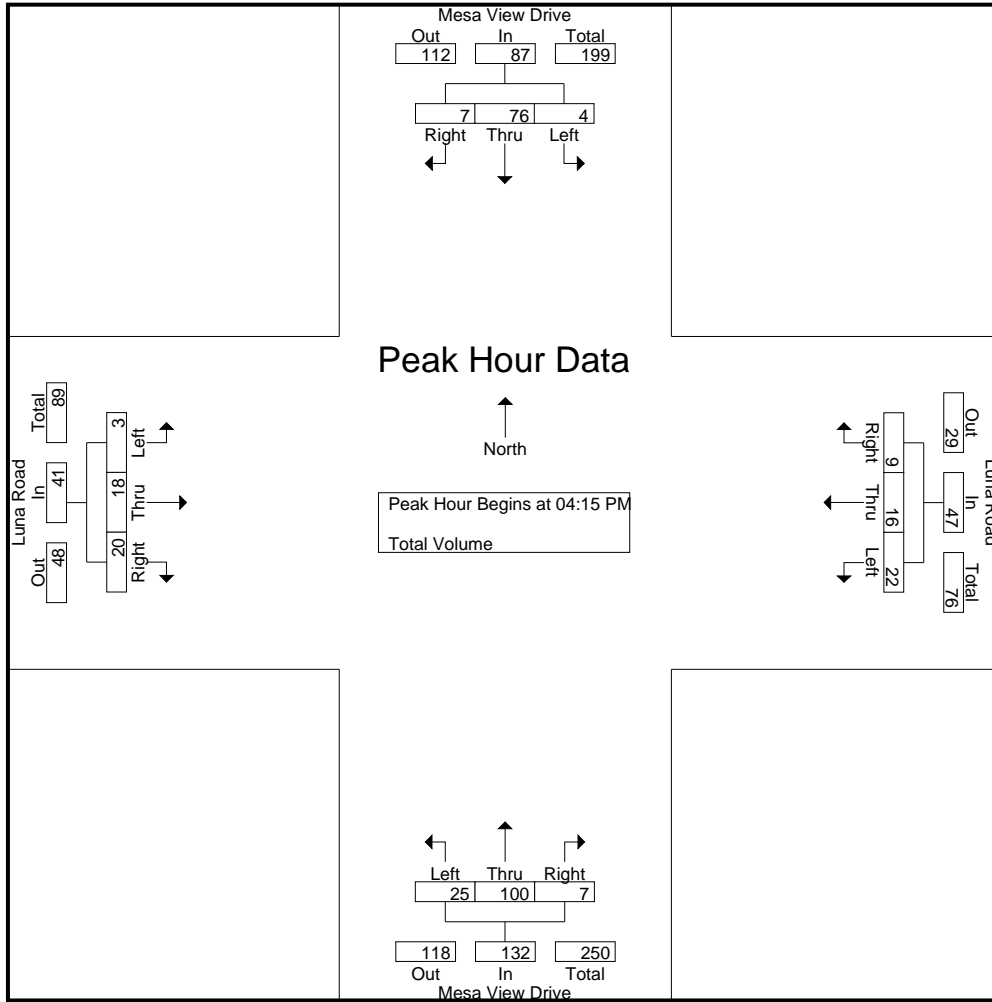
Start Time	Mesa View Drive Southbound				Luna Road Westbound				Mesa View Drive Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:15 PM	0	24	5	29	10	4	1	15	5	24	3	32	0	4	6	10	86
04:30 PM	1	15	2	18	9	7	2	18	11	24	2	37	1	4	5	10	83
04:45 PM	0	17	0	17	0	1	4	5	4	25	1	30	0	6	7	13	65
05:00 PM	3	20	0	23	3	4	2	9	5	27	1	33	2	4	2	8	73
Total Volume	4	76	7	87	22	16	9	47	25	100	7	132	3	18	20	41	307
% App. Total	4.6	87.4	8		46.8	34	19.1		18.9	75.8	5.3		7.3	43.9	48.8		
PHF	.333	.792	.350	.750	.550	.571	.563	.653	.568	.926	.583	.892	.375	.750	.714	.788	.892

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:15 PM

City of Victorville
 N/S: Mesa View Drive
 E/W: Luna Road
 Weather: Clear

File Name : 02_VIC_Mesa View_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:30 PM				05:00 PM			
+0 mins.	0	24	5	29	10	4	1	15	11	24	2	37	2	4	2	8
+15 mins.	1	15	2	18	9	7	2	18	4	25	1	30	2	7	4	13
+30 mins.	0	17	0	17	0	1	4	5	5	27	1	33	2	4	2	8
+45 mins.	3	20	0	23	3	4	2	9	5	25	4	34	7	6	3	16
Total Volume	4	76	7	87	22	16	9	47	25	101	8	134	13	21	11	45
% App. Total	4.6	87.4	8		46.8	34	19.1		18.7	75.4	6		28.9	46.7	24.4	
PHF	.333	.792	.350	.750	.550	.571	.563	.653	.568	.935	.500	.905	.464	.750	.688	.703

City of Victorville
 N/S: Mesa View Drive
 E/W: La Mesa Road
 Weather: Clear

File Name : 03_VIC_Mesa View_La Mesa AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Mesa View Drive Southbound				La Mesa Road Westbound				Mesa View Drive Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	5	12	0	17	3	0	5	8	1	18	4	23	0	0	0	0	48
07:15 AM	5	23	1	29	8	0	0	8	0	29	3	32	1	0	0	1	70
07:30 AM	21	34	0	55	9	0	8	17	0	16	6	22	0	0	0	0	94
07:45 AM	7	40	0	47	9	0	11	20	0	35	5	40	0	0	0	0	107
Total	38	109	1	148	29	0	24	53	1	98	18	117	1	0	0	1	319
08:00 AM	11	30	0	41	6	0	3	9	0	25	2	27	0	0	0	0	77
08:15 AM	4	31	0	35	3	0	3	6	0	17	6	23	0	0	0	0	64
08:30 AM	4	30	0	34	10	0	3	13	0	17	2	19	0	0	0	0	66
08:45 AM	1	21	0	22	2	0	3	5	1	16	3	20	0	0	0	0	47
Total	20	112	0	132	21	0	12	33	1	75	13	89	0	0	0	0	254
Grand Total	58	221	1	280	50	0	36	86	2	173	31	206	1	0	0	1	573
Apprch %	20.7	78.9	0.4		58.1	0	41.9		1	84	15		100	0	0		
Total %	10.1	38.6	0.2	48.9	8.7	0	6.3	15	0.3	30.2	5.4	36	0.2	0	0	0.2	

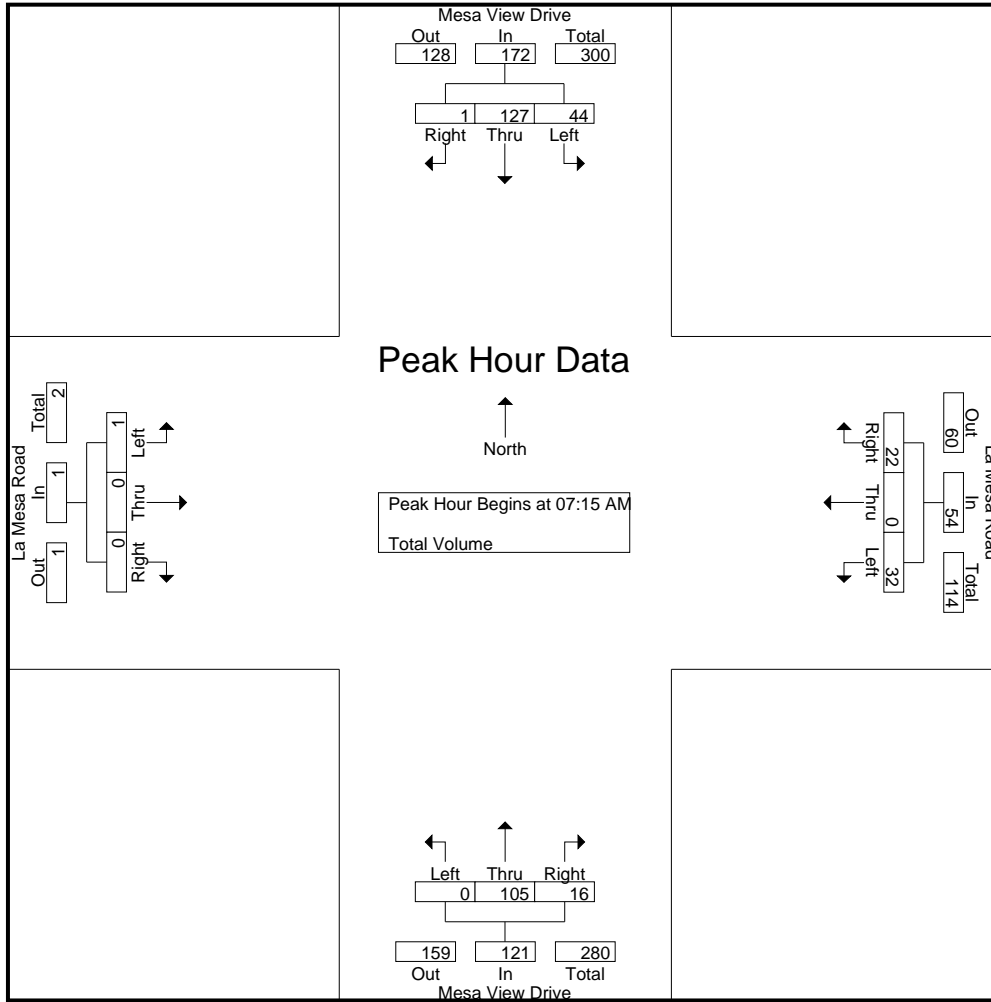
Start Time	Mesa View Drive Southbound				La Mesa Road Westbound				Mesa View Drive Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:15 AM	5	23	1	29	8	0	0	8	0	29	3	32	1	0	0	1	70
07:30 AM	21	34	0	55	9	0	8	17	0	16	6	22	0	0	0	0	94
07:45 AM	7	40	0	47	9	0	11	20	0	35	5	40	0	0	0	0	107
08:00 AM	11	30	0	41	6	0	3	9	0	25	2	27	0	0	0	0	77
Total Volume	44	127	1	172	32	0	22	54	0	105	16	121	1	0	0	1	348
% App. Total	25.6	73.8	0.6		59.3	0	40.7		0	86.8	13.2		100	0	0		
PHF	.524	.794	.250	.782	.889	.000	.500	.675	.000	.750	.667	.756	.250	.000	.000	.250	.813

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

City of Victorville
 N/S: Mesa View Drive
 E/W: La Mesa Road
 Weather: Clear

File Name : 03_VIC_Mesa View_La Mesa AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:15 AM				07:00 AM			
+0 mins.	21	34	0	55	8	0	0	8	0	29	3	32	0	0	0	0
+15 mins.	7	40	0	47	9	0	8	17	0	16	6	22	1	0	0	1
+30 mins.	11	30	0	41	9	0	11	20	0	35	5	40	0	0	0	0
+45 mins.	4	31	0	35	6	0	3	9	0	25	2	27	0	0	0	0
Total Volume	43	135	0	178	32	0	22	54	0	105	16	121	1	0	0	1
% App. Total	24.2	75.8	0		59.3	0	40.7		0	86.8	13.2		100	0	0	
PHF	.512	.844	.000	.809	.889	.000	.500	.675	.000	.750	.667	.756	.250	.000	.000	.250

City of Victorville
 N/S: Mesa View Drive
 E/W: La Mesa Road
 Weather: Clear

File Name : 03_VIC_Mesa View_La Mesa PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Mesa View Drive Southbound				La Mesa Road Westbound				Mesa View Drive Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	7	12	0	19	4	0	4	8	0	24	5	29	0	0	0	0	56
04:15 PM	9	27	0	36	3	0	10	13	0	24	2	26	0	0	1	1	76
04:30 PM	3	23	0	26	6	1	12	19	1	29	4	34	0	1	1	2	81
04:45 PM	10	14	0	24	7	0	8	15	0	25	8	33	0	0	0	0	72
Total	29	76	0	105	20	1	34	55	1	102	19	122	0	1	2	3	285
05:00 PM	2	15	1	18	8	0	8	16	0	32	7	39	0	0	1	1	74
05:15 PM	3	17	0	20	7	0	8	15	0	28	2	30	0	1	0	1	66
05:30 PM	6	16	0	22	8	0	1	9	0	19	8	27	0	0	0	0	58
05:45 PM	5	12	0	17	7	0	6	13	0	28	3	31	0	0	0	0	61
Total	16	60	1	77	30	0	23	53	0	107	20	127	0	1	1	2	259
Grand Total	45	136	1	182	50	1	57	108	1	209	39	249	0	2	3	5	544
Apprch %	24.7	74.7	0.5		46.3	0.9	52.8		0.4	83.9	15.7		0	40	60		
Total %	8.3	25	0.2	33.5	9.2	0.2	10.5	19.9	0.2	38.4	7.2	45.8	0	0.4	0.6	0.9	

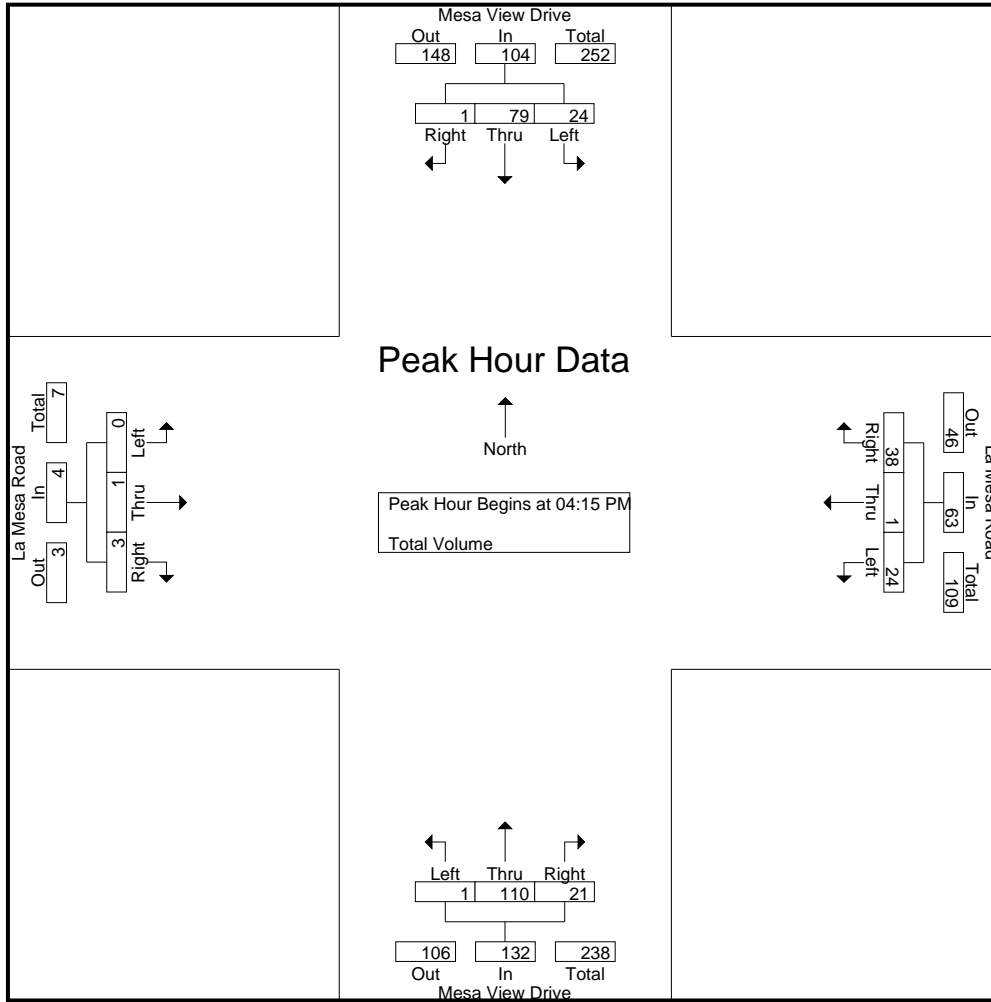
Start Time	Mesa View Drive Southbound				La Mesa Road Westbound				Mesa View Drive Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:15 PM	9	27	0	36	3	0	10	13	0	24	2	26	0	0	1	1	76
04:30 PM	3	23	0	26	6	1	12	19	1	29	4	34	0	1	1	2	81
04:45 PM	10	14	0	24	7	0	8	15	0	25	8	33	0	0	0	0	72
05:00 PM	2	15	1	18	8	0	8	16	0	32	7	39	0	0	1	1	74
Total Volume	24	79	1	104	24	1	38	63	1	110	21	132	0	1	3	4	303
% App. Total	23.1	76	1		38.1	1.6	60.3		0.8	83.3	15.9		0	25	75		
PHF	.600	.731	.250	.722	.750	.250	.792	.829	.250	.859	.656	.846	.000	.250	.750	.500	.935

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:15 PM

City of Victorville
 N/S: Mesa View Drive
 E/W: La Mesa Road
 Weather: Clear

File Name : 03_VIC_Mesa View_La Mesa PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:30 PM				04:15 PM			
+0 mins.	7	12	0	19	6	1	12	19	1	29	4	34	0	0	1	1
+15 mins.	9	27	0	36	7	0	8	15	0	25	8	33	0	1	1	2
+30 mins.	3	23	0	26	8	0	8	16	0	32	7	39	0	0	0	0
+45 mins.	10	14	0	24	7	0	8	15	0	28	2	30	0	0	1	1
Total Volume	29	76	0	105	28	1	36	65	1	114	21	136	0	1	3	4
% App. Total	27.6	72.4	0		43.1	1.5	55.4		0.7	83.8	15.4		0	25	75	
PHF	.725	.704	.000	.729	.875	.250	.750	.855	.250	.891	.656	.872	.000	.250	.750	.500

City of Victorville
 N/S: Vista Verde Street
 E/W: Luna Road
 Weather: Clear

File Name : 04_VIC_Vista Verde_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Vista Verde Street Southbound			Luna Road Westbound			Luna Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	6	0	6	8	3	11	1	6	7	24
07:15 AM	10	0	10	12	15	27	6	6	12	49
07:30 AM	4	1	5	6	58	64	17	7	24	93
07:45 AM	21	6	27	19	66	85	29	13	42	154
Total	41	7	48	45	142	187	53	32	85	320
08:00 AM	9	2	11	16	13	29	7	8	15	55
08:15 AM	6	2	8	14	2	16	1	11	12	36
08:30 AM	5	0	5	9	3	12	0	10	10	27
08:45 AM	8	0	8	5	8	13	0	7	7	28
Total	28	4	32	44	26	70	8	36	44	146
Grand Total	69	11	80	89	168	257	61	68	129	466
Apprch %	86.2	13.8		34.6	65.4		47.3	52.7		
Total %	14.8	2.4	17.2	19.1	36.1	55.2	13.1	14.6	27.7	

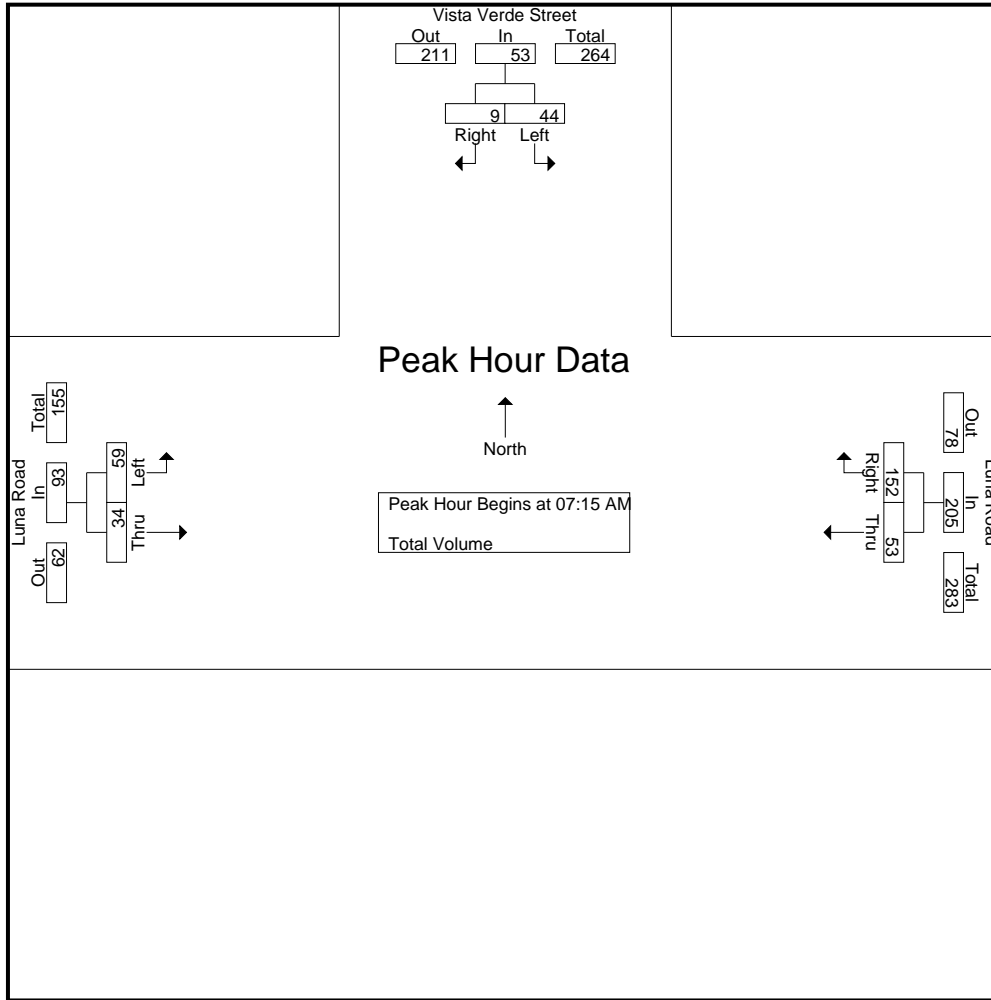
Start Time	Vista Verde Street Southbound			Luna Road Westbound			Luna Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:15 AM	10	0	10	12	15	27	6	6	12	49
07:30 AM	4	1	5	6	58	64	17	7	24	93
07:45 AM	21	6	27	19	66	85	29	13	42	154
08:00 AM	9	2	11	16	13	29	7	8	15	55
Total Volume	44	9	53	53	152	205	59	34	93	351
% App. Total	83	17		25.9	74.1		63.4	36.6		
PHF	.524	.375	.491	.697	.576	.603	.509	.654	.554	.570

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

City of Victorville
 N/S: Vista Verde Street
 E/W: Luna Road
 Weather: Clear

File Name : 04_VIC_Vista Verde_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	10	0	10	12	15	27	6	6	12
+15 mins.	4	1	5	6	58	64	17	7	24
+30 mins.	21	6	27	19	66	85	29	13	42
+45 mins.	9	2	11	16	13	29	7	8	15
Total Volume	44	9	53	53	152	205	59	34	93
% App. Total	83	17		25.9	74.1		63.4	36.6	
PHF	.524	.375	.491	.697	.576	.603	.509	.654	.554

City of Victorville
 N/S: Vista Verde Street
 E/W: Luna Road
 Weather: Clear

File Name : 04_VIC_Vista Verde_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

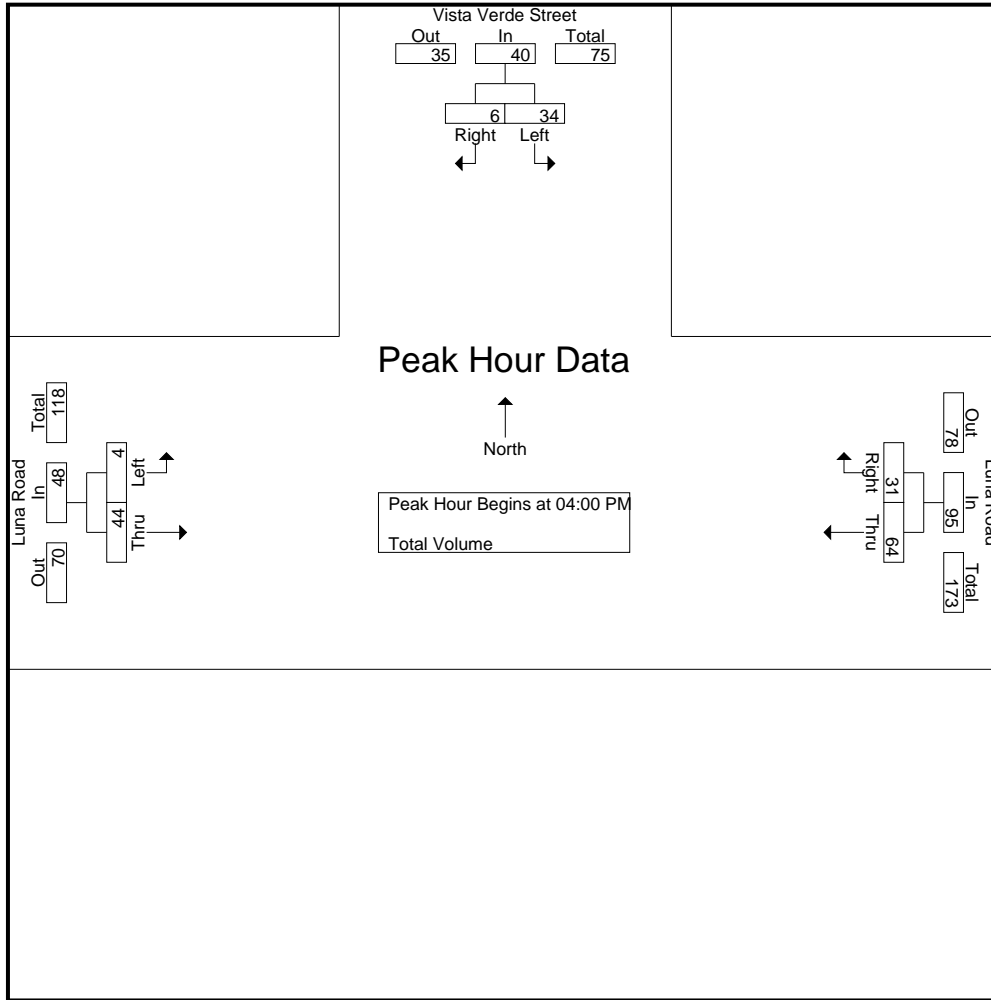
Start Time	Vista Verde Street Southbound			Luna Road Westbound			Luna Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	6	2	8	12	10	22	2	9	11	41
04:15 PM	8	3	11	18	10	28	2	16	18	57
04:30 PM	10	1	11	23	4	27	0	12	12	50
04:45 PM	10	0	10	11	7	18	0	7	7	35
Total	34	6	40	64	31	95	4	44	48	183
05:00 PM	7	0	7	11	10	21	1	9	10	38
05:15 PM	9	1	10	12	22	34	0	8	8	52
05:30 PM	8	1	9	13	18	31	1	13	14	54
05:45 PM	10	0	10	7	14	21	3	5	8	39
Total	34	2	36	43	64	107	5	35	40	183
Grand Total	68	8	76	107	95	202	9	79	88	366
Apprch %	89.5	10.5		53	47		10.2	89.8		
Total %	18.6	2.2	20.8	29.2	26	55.2	2.5	21.6	24	

Start Time	Vista Verde Street Southbound			Luna Road Westbound			Luna Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	6	2	8	12	10	22	2	9	11	41
04:15 PM	8	3	11	18	10	28	2	16	18	57
04:30 PM	10	1	11	23	4	27	0	12	12	50
04:45 PM	10	0	10	11	7	18	0	7	7	35
Total Volume	34	6	40	64	31	95	4	44	48	183
% App. Total	85	15		67.4	32.6		8.3	91.7		
PHF	.850	.500	.909	.696	.775	.848	.500	.688	.667	.803

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Victorville
 N/S: Vista Verde Street
 E/W: Luna Road
 Weather: Clear

File Name : 04_VIC_Vista Verde_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:00 PM		
+0 mins.	6	2	8	11	10	21	2	9	11
+15 mins.	8	3	11	12	22	34	2	16	18
+30 mins.	10	1	11	13	18	31	0	12	12
+45 mins.	10	0	10	7	14	21	0	7	7
Total Volume	34	6	40	43	64	107	4	44	48
% App. Total	85	15		40.2	59.8		8.3	91.7	
PHF	.850	.500	.909	.827	.727	.787	.500	.688	.667

City of Victorville
 N/S: Bella Pine Street
 E/W: Luna Road
 Weather: Clear

File Name : 05_VIC_Bella Pina_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Bella Pine Street Southbound				Luna Road Westbound				Bella Pine Street Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	9	2	0	11	9	13	3	25	1	1	13	15	0	11	0	11	62
07:15 AM	6	1	1	8	2	18	1	21	4	1	2	7	1	10	0	11	47
07:30 AM	8	4	7	19	7	42	5	54	14	2	7	23	2	11	2	15	111
07:45 AM	19	30	20	69	6	43	9	58	29	4	14	47	2	29	4	35	209
Total	42	37	28	107	24	116	18	158	48	8	36	92	5	61	6	72	429
08:00 AM	20	19	10	49	3	18	4	25	5	0	11	16	2	13	2	17	107
08:15 AM	11	4	4	19	2	8	4	14	0	0	4	4	0	13	1	14	51
08:30 AM	2	5	0	7	9	9	1	19	1	0	11	12	3	15	1	19	57
08:45 AM	4	1	2	7	3	17	3	23	1	1	11	13	0	19	0	19	62
Total	37	29	16	82	17	52	12	81	7	1	37	45	5	60	4	69	277
Grand Total	79	66	44	189	41	168	30	239	55	9	73	137	10	121	10	141	706
Apprch %	41.8	34.9	23.3		17.2	70.3	12.6		40.1	6.6	53.3		7.1	85.8	7.1		
Total %	11.2	9.3	6.2	26.8	5.8	23.8	4.2	33.9	7.8	1.3	10.3	19.4	1.4	17.1	1.4	20	

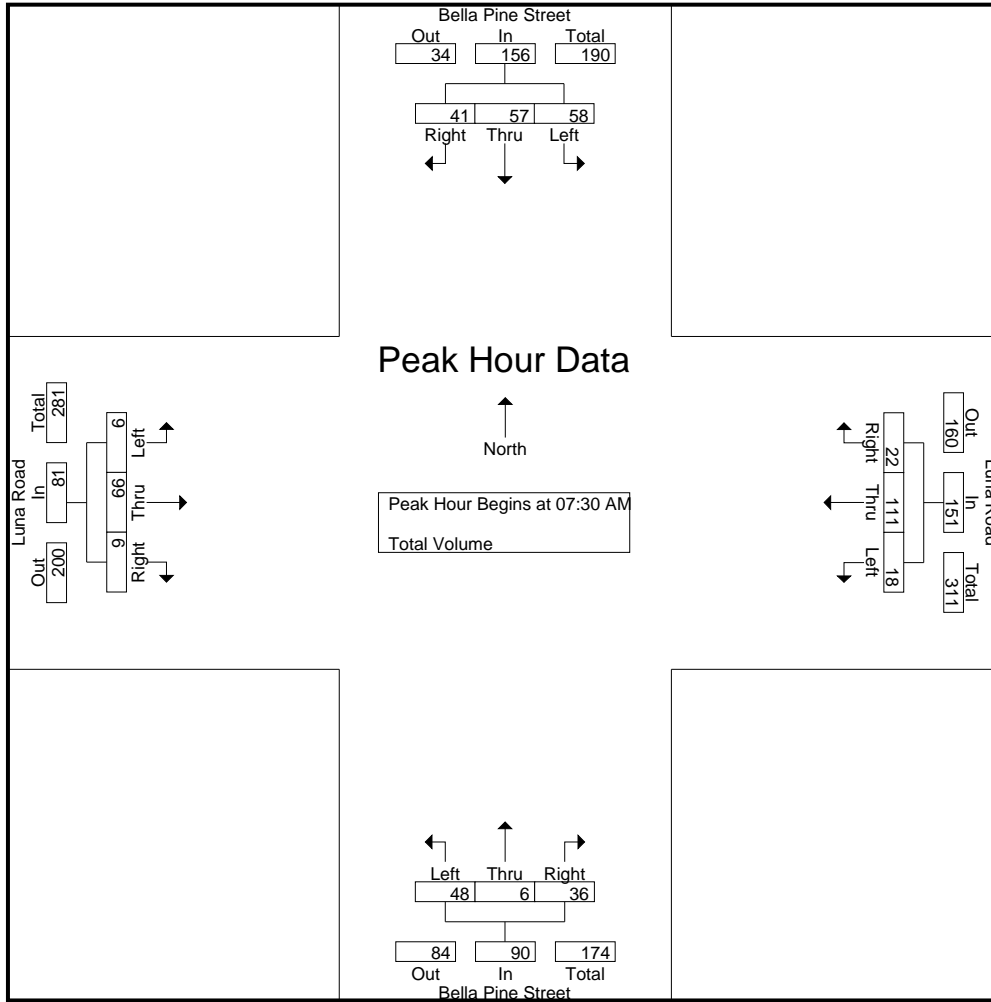
Start Time	Bella Pine Street Southbound				Luna Road Westbound				Bella Pine Street Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	8	4	7	19	7	42	5	54	14	2	7	23	2	11	2	15	111
07:45 AM	19	30	20	69	6	43	9	58	29	4	14	47	2	29	4	35	209
08:00 AM	20	19	10	49	3	18	4	25	5	0	11	16	2	13	2	17	107
08:15 AM	11	4	4	19	2	8	4	14	0	0	4	4	0	13	1	14	51
Total Volume	58	57	41	156	18	111	22	151	48	6	36	90	6	66	9	81	478
% App. Total	37.2	36.5	26.3		11.9	73.5	14.6		53.3	6.7	40		7.4	81.5	11.1		
PHF	.725	.475	.513	.565	.643	.645	.611	.651	.414	.375	.643	.479	.750	.569	.563	.579	.572

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Victorville
 N/S: Bella Pine Street
 E/W: Luna Road
 Weather: Clear

File Name : 05_VIC_Bella Pina_Luna AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:00 AM				07:15 AM				07:45 AM			
+0 mins.	8	4	7	19	9	13	3	25	4	1	2	7	2	29	4	35
+15 mins.	19	30	20	69	2	18	1	21	14	2	7	23	2	13	2	17
+30 mins.	20	19	10	49	7	42	5	54	29	4	14	47	0	13	1	14
+45 mins.	11	4	4	19	6	43	9	58	5	0	11	16	3	15	1	19
Total Volume	58	57	41	156	24	116	18	158	52	7	34	93	7	70	8	85
% App. Total	37.2	36.5	26.3		15.2	73.4	11.4		55.9	7.5	36.6		8.2	82.4	9.4	
PHF	.725	.475	.513	.565	.667	.674	.500	.681	.448	.438	.607	.495	.583	.603	.500	.607

City of Victorville
 N/S: Bella Pine Street
 E/W: Luna Road
 Weather: Clear

File Name : 05_VIC_Bella Pina_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

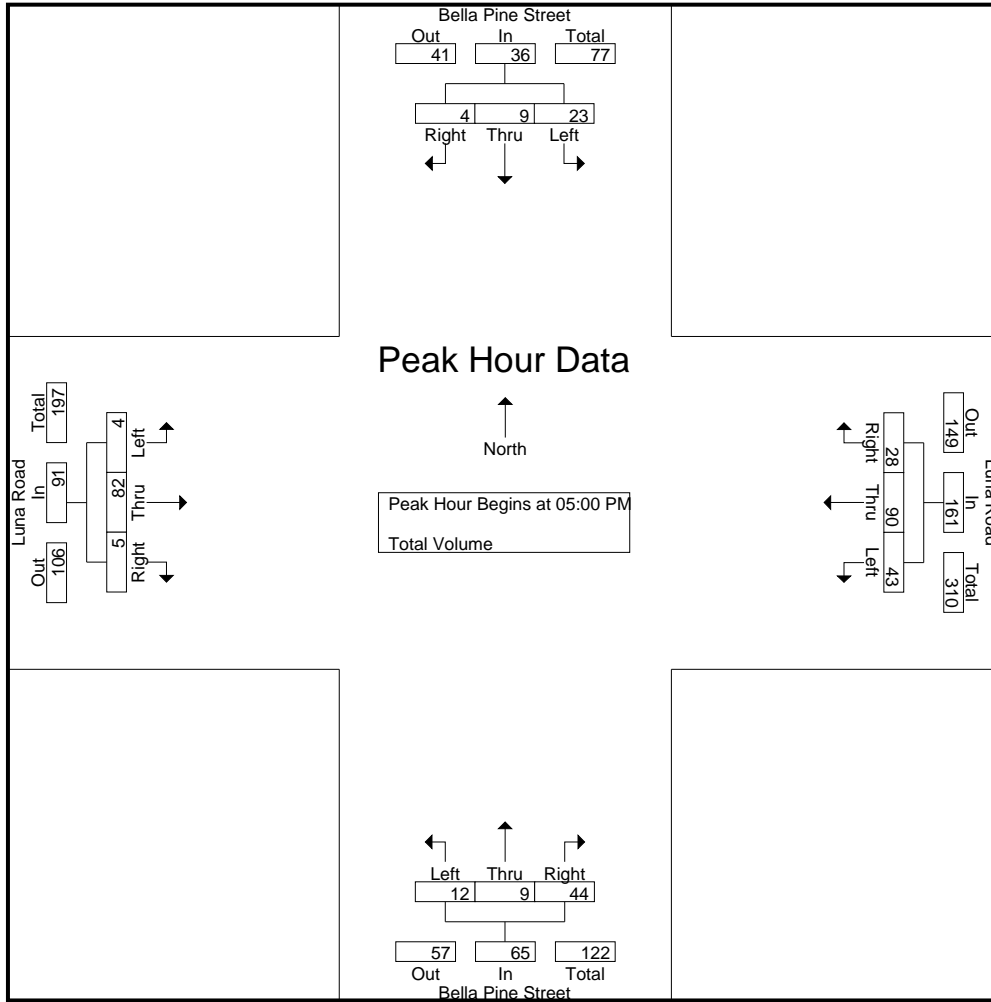
Start Time	Bella Pine Street Southbound				Luna Road Westbound				Bella Pine Street Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	6	0	2	8	14	18	6	38	1	3	5	9	1	20	1	22	77
04:15 PM	6	5	0	11	12	23	11	46	4	1	11	16	0	19	1	20	93
04:30 PM	4	0	0	4	8	30	8	46	5	5	8	18	1	13	0	14	82
04:45 PM	8	1	0	9	10	15	8	33	2	3	7	12	1	11	0	12	66
Total	24	6	2	32	44	86	33	163	12	12	31	55	3	63	2	68	318
05:00 PM	4	1	0	5	10	16	6	32	2	2	8	12	1	18	2	21	70
05:15 PM	6	0	1	7	13	22	10	45	3	3	11	17	2	16	0	18	87
05:30 PM	7	3	3	13	14	28	6	48	2	1	12	15	1	27	0	28	104
05:45 PM	6	5	0	11	6	24	6	36	5	3	13	21	0	21	3	24	92
Total	23	9	4	36	43	90	28	161	12	9	44	65	4	82	5	91	353
Grand Total	47	15	6	68	87	176	61	324	24	21	75	120	7	145	7	159	671
Apprch %	69.1	22.1	8.8		26.9	54.3	18.8		20	17.5	62.5		4.4	91.2	4.4		
Total %	7	2.2	0.9	10.1	13	26.2	9.1	48.3	3.6	3.1	11.2	17.9	1	21.6	1	23.7	

Start Time	Bella Pine Street Southbound				Luna Road Westbound				Bella Pine Street Northbound				Luna Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:00 PM	4	1	0	5	10	16	6	32	2	2	8	12	1	18	2	21	70
05:15 PM	6	0	1	7	13	22	10	45	3	3	11	17	2	16	0	18	87
05:30 PM	7	3	3	13	14	28	6	48	2	1	12	15	1	27	0	28	104
05:45 PM	6	5	0	11	6	24	6	36	5	3	13	21	0	21	3	24	92
Total Volume	23	9	4	36	43	90	28	161	12	9	44	65	4	82	5	91	353
% App. Total	63.9	25	11.1		26.7	55.9	17.4		18.5	13.8	67.7		4.4	90.1	5.5		
PHF	.821	.450	.333	.692	.768	.804	.700	.839	.600	.750	.846	.774	.500	.759	.417	.813	.849

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 05:00 PM

City of Victorville
 N/S: Bella Pine Street
 E/W: Luna Road
 Weather: Clear

File Name : 05_VIC_Bella Pina_Luna PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				05:00 PM				05:00 PM			
+0 mins.	4	1	0	5	14	18	6	38	2	2	8	12	1	18	2	21
+15 mins.	6	0	1	7	12	23	11	46	3	3	11	17	2	16	0	18
+30 mins.	7	3	3	13	8	30	8	46	2	1	12	15	1	27	0	28
+45 mins.	6	5	0	11	10	15	8	33	5	3	13	21	0	21	3	24
Total Volume	23	9	4	36	44	86	33	163	12	9	44	65	4	82	5	91
% App. Total	63.9	25	11.1		27	52.8	20.2		18.5	13.8	67.7		4.4	90.1	5.5	
PHF	.821	.450	.333	.692	.786	.717	.750	.886	.600	.750	.846	.774	.500	.759	.417	.813

City of Victorville
 N/S: Pena Road
 E/W: La Mesa Road
 Weather: Clear

File Name : 06_VIC_Pena_La Mesa AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

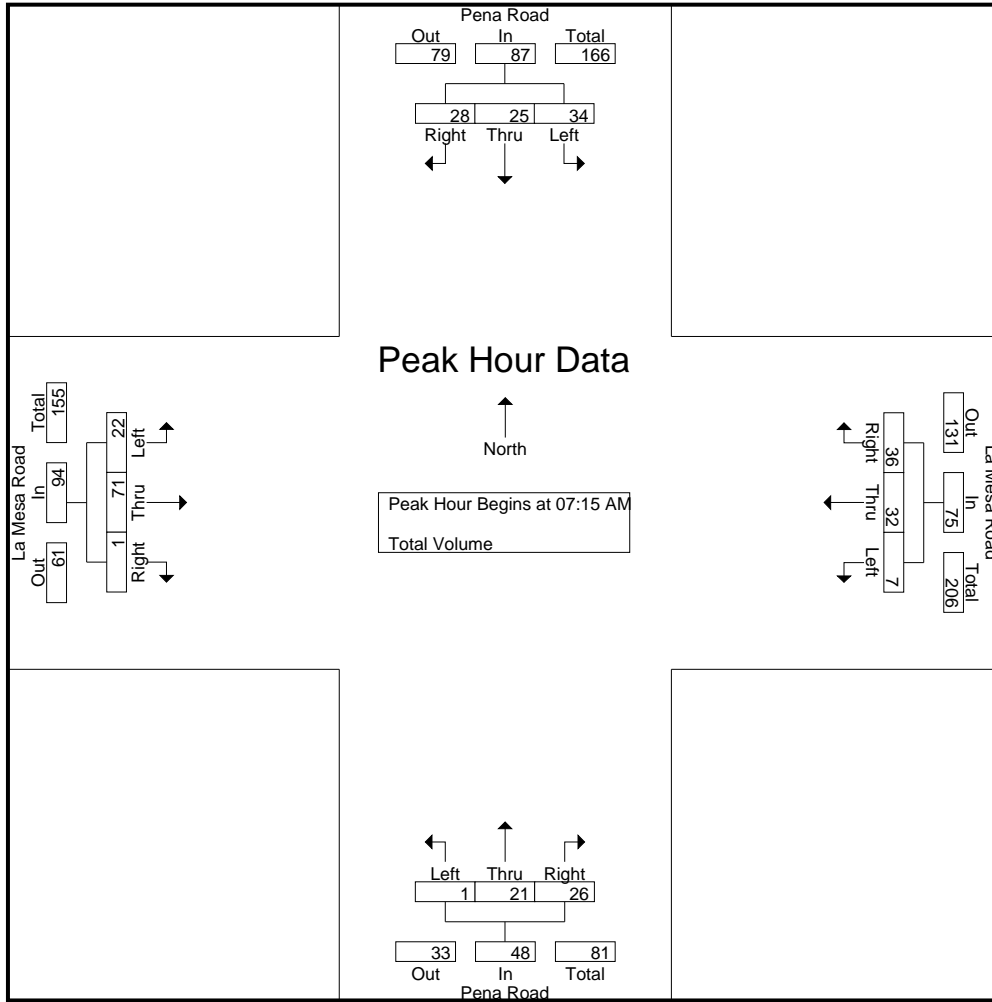
Start Time	Pena Road Southbound				La Mesa Road Westbound				Pena Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	7	2	1	10	4	13	11	28	0	1	5	6	1	19	0	20	64
07:15 AM	8	1	2	11	1	5	10	16	0	4	11	15	2	17	0	19	61
07:30 AM	11	2	6	19	3	11	8	22	0	6	4	10	10	20	0	30	81
07:45 AM	5	11	14	30	2	7	13	22	0	8	6	14	6	12	0	18	84
Total	31	16	23	70	10	36	42	88	0	19	26	45	19	68	0	87	290
08:00 AM	10	11	6	27	1	9	5	15	1	3	5	9	4	22	1	27	78
08:15 AM	6	1	5	12	4	9	2	15	0	4	5	9	2	12	1	15	51
08:30 AM	10	2	3	15	3	8	5	16	0	0	5	5	2	18	0	20	56
08:45 AM	4	3	1	8	6	11	5	22	0	4	7	11	3	18	0	21	62
Total	30	17	15	62	14	37	17	68	1	11	22	34	11	70	2	83	247
Grand Total	61	33	38	132	24	73	59	156	1	30	48	79	30	138	2	170	537
Apprch %	46.2	25	28.8		15.4	46.8	37.8		1.3	38	60.8		17.6	81.2	1.2		
Total %	11.4	6.1	7.1	24.6	4.5	13.6	11	29.1	0.2	5.6	8.9	14.7	5.6	25.7	0.4	31.7	

Start Time	Pena Road Southbound				La Mesa Road Westbound				Pena Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:15 AM	8	1	2	11	1	5	10	16	0	4	11	15	2	17	0	19	61
07:30 AM	11	2	6	19	3	11	8	22	0	6	4	10	10	20	0	30	81
07:45 AM	5	11	14	30	2	7	13	22	0	8	6	14	6	12	0	18	84
08:00 AM	10	11	6	27	1	9	5	15	1	3	5	9	4	22	1	27	78
Total Volume	34	25	28	87	7	32	36	75	1	21	26	48	22	71	1	94	304
% App. Total	39.1	28.7	32.2		9.3	42.7	48		2.1	43.8	54.2		23.4	75.5	1.1		
PHF	.773	.568	.500	.725	.583	.727	.692	.852	.250	.656	.591	.800	.550	.807	.250	.783	.905

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:15 AM

City of Victorville
 N/S: Pena Road
 E/W: La Mesa Road
 Weather: Clear

File Name : 06_VIC_Pena_La Mesa AM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:00 AM				07:15 AM				07:15 AM			
+0 mins.	11	2	6	19	4	13	11	28	0	4	11	15	2	17	0	19
+15 mins.	5	11	14	30	1	5	10	16	0	6	4	10	10	20	0	30
+30 mins.	10	11	6	27	3	11	8	22	0	8	6	14	6	12	0	18
+45 mins.	6	1	5	12	2	7	13	22	1	3	5	9	4	22	1	27
Total Volume	32	25	31	88	10	36	42	88	1	21	26	48	22	71	1	94
% App. Total	36.4	28.4	35.2		11.4	40.9	47.7		2.1	43.8	54.2		23.4	75.5	1.1	
PHF	.727	.568	.554	.733	.625	.692	.808	.786	.250	.656	.591	.800	.550	.807	.250	.783

City of Victorville
 N/S: Pena Road
 E/W: La Mesa Road
 Weather: Clear

File Name : 06_VIC_Pena_La Mesa PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 1

Groups Printed- Total Volume

Start Time	Pena Road Southbound				La Mesa Road Westbound				Pena Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	6	4	7	17	5	16	5	26	0	3	6	9	1	16	1	18	70
04:15 PM	8	1	7	16	6	27	8	41	0	2	4	6	2	9	0	11	74
04:30 PM	5	4	3	12	7	15	3	25	0	2	3	5	7	16	1	24	66
04:45 PM	5	2	3	10	7	16	7	30	2	4	13	19	0	20	0	20	79
Total	24	11	20	55	25	74	23	122	2	11	26	39	10	61	2	73	289
05:00 PM	11	8	4	23	4	18	14	36	0	2	5	7	2	14	0	16	82
05:15 PM	4	5	4	13	3	17	11	31	0	0	2	2	6	9	0	15	61
05:30 PM	5	3	6	14	4	23	9	36	0	2	7	9	4	11	1	16	75
05:45 PM	10	3	3	16	7	20	5	32	0	0	7	7	3	8	0	11	66
Total	30	19	17	66	18	78	39	135	0	4	21	25	15	42	1	58	284
Grand Total	54	30	37	121	43	152	62	257	2	15	47	64	25	103	3	131	573
Apprch %	44.6	24.8	30.6		16.7	59.1	24.1		3.1	23.4	73.4		19.1	78.6	2.3		
Total %	9.4	5.2	6.5	21.1	7.5	26.5	10.8	44.9	0.3	2.6	8.2	11.2	4.4	18	0.5	22.9	

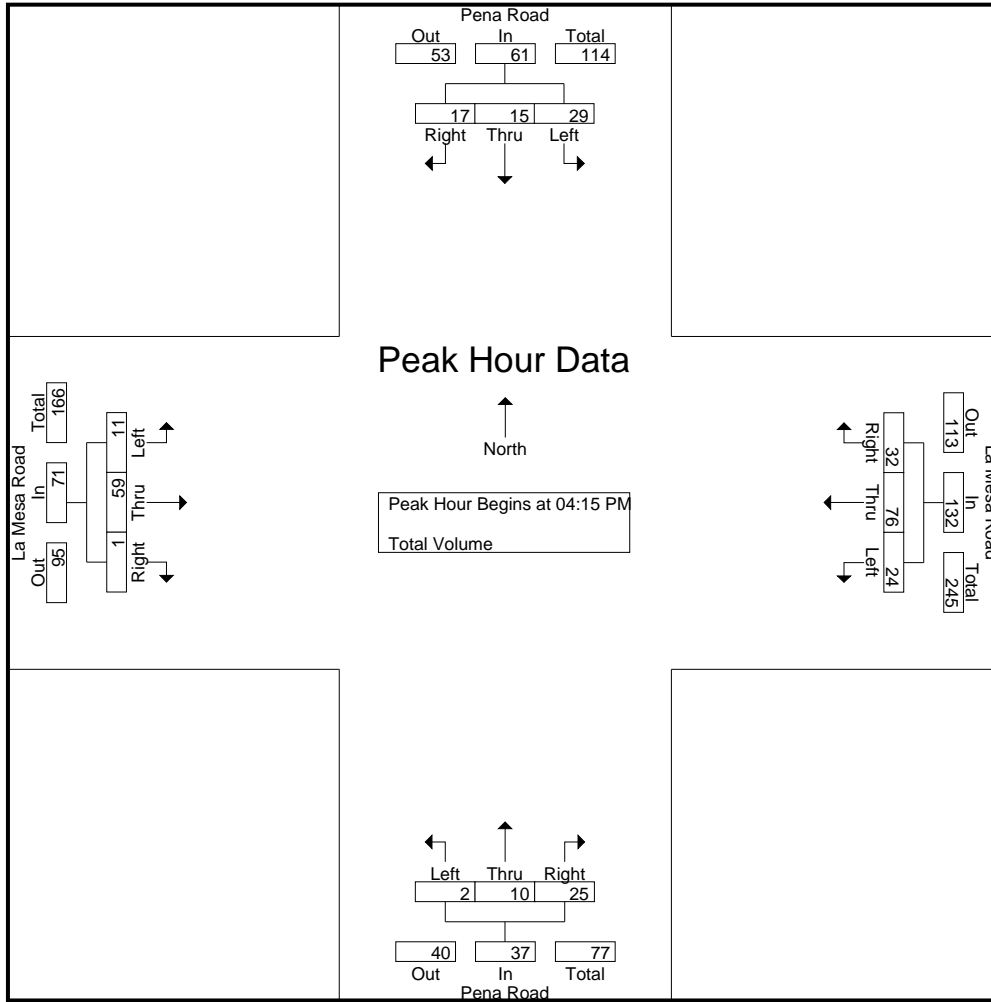
Start Time	Pena Road Southbound				La Mesa Road Westbound				Pena Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:15 PM	8	1	7	16	6	27	8	41	0	2	4	6	2	9	0	11	74
04:30 PM	5	4	3	12	7	15	3	25	0	2	3	5	7	16	1	24	66
04:45 PM	5	2	3	10	7	16	7	30	2	4	13	19	0	20	0	20	79
05:00 PM	11	8	4	23	4	18	14	36	0	2	5	7	2	14	0	16	82
Total Volume	29	15	17	61	24	76	32	132	2	10	25	37	11	59	1	71	301
% App. Total	47.5	24.6	27.9		18.2	57.6	24.2		5.4	27	67.6		15.5	83.1	1.4		
PHF	.659	.469	.607	.663	.857	.704	.571	.805	.250	.625	.481	.487	.393	.738	.250	.740	.918

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:15 PM

City of Victorville
 N/S: Pena Road
 E/W: La Mesa Road
 Weather: Clear

File Name : 06_VIC_Pena_La Mesa PM
 Site Code : 10521629
 Start Date : 11/2/2021
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:00 PM				04:30 PM			
+0 mins.	11	8	4	23	4	18	14	36	0	3	6	9	7	16	1	24
+15 mins.	4	5	4	13	3	17	11	31	0	2	4	6	0	20	0	20
+30 mins.	5	3	6	14	4	23	9	36	0	2	3	5	2	14	0	16
+45 mins.	10	3	3	16	7	20	5	32	2	4	13	19	6	9	0	15
Total Volume	30	19	17	66	18	78	39	135	2	11	26	39	15	59	1	75
% App. Total	45.5	28.8	25.8		13.3	57.8	28.9		5.1	28.2	66.7		20	78.7	1.3	
PHF	.682	.594	.708	.717	.643	.848	.696	.938	.250	.688	.500	.513	.536	.738	.250	.781

Appendix C

Existing Conditions Intersection Analysis Worksheets

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.941			0.974			0.955			0.995	
Flt Protected		0.993			0.976			0.998			0.995	
Satd. Flow (prot)	0	1741	0	0	1771	0	0	1775	0	0	1844	0
Flt Permitted		0.993			0.976			0.998			0.995	
Satd. Flow (perm)	0	1741	0	0	1771	0	0	1775	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	9	26	27	31	19	12	5	86	45	11	106	5
Future Volume (vph)	9	26	27	31	19	12	5	86	45	11	106	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	37	39	44	27	17	7	123	64	16	151	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	88	0	0	194	0	0	174	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	26	27	31	19	12	5	86	45	11	106	5
Future Vol, veh/h	9	26	27	31	19	12	5	86	45	11	106	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	37	39	44	27	17	7	123	64	16	151	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	378	388	155	394	359	155	158	0	0	187	0	0
Stage 1	187	187	-	169	169	-	-	-	-	-	-	-
Stage 2	191	201	-	225	190	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	580	547	891	566	568	891	1422	-	-	1387	-	-
Stage 1	815	745	-	833	759	-	-	-	-	-	-	-
Stage 2	811	735	-	778	743	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	540	537	891	505	557	891	1422	-	-	1387	-	-
Mov Cap-2 Maneuver	540	537	-	505	557	-	-	-	-	-	-	-
Stage 1	810	735	-	828	754	-	-	-	-	-	-	-
Stage 2	762	731	-	698	733	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.4		12.5		0.3		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1422	-	-	650	569	1387	-
HCM Lane V/C Ratio	0.005	-	-	0.136	0.156	0.011	-
HCM Control Delay (s)	7.5	0	-	11.4	12.5	7.6	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	0.5	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.946		0.982			
Flt Protected	0.971					0.987
Satd. Flow (prot)	1711	0	1829	0	0	1839
Flt Permitted	0.971					0.987
Satd. Flow (perm)	1711	0	1829	0	0	1839
Link Speed (mph)	30		30			30
Link Distance (ft)	1911		1029			781
Travel Time (s)	43.4		23.4			17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022






Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	32	22	105	16	44	127
Future Volume (vph)	32	22	105	16	44	127
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	40	27	130	20	54	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	150	0	0	211
Intersection Summary						

HCM 6th AWSC
 3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	22	105	16	44	127
Future Vol, veh/h	32	22	105	16	44	127
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	27	130	20	54	157
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8	8.1	8.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	59%	26%
Vol Thru, %	87%	0%	74%
Vol Right, %	13%	41%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	121	54	171
LT Vol	0	32	44
Through Vol	105	0	127
RT Vol	16	22	0
Lane Flow Rate	149	67	211
Geometry Grp	1	1	1
Degree of Util (X)	0.176	0.085	0.247
Departure Headway (Hd)	4.237	4.595	4.216
Convergence, Y/N	Yes	Yes	Yes
Cap	851	783	840
Service Time	2.237	2.604	2.306
HCM Lane V/C Ratio	0.175	0.086	0.251
HCM Control Delay	8.1	8	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.3	1

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↔		↙	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.900		0.977	
Flt Protected		0.969			0.960	
Satd. Flow (prot)	0	1805	1676	0	1747	0
Flt Permitted		0.969			0.960	
Satd. Flow (perm)	0	1805	1676	0	1747	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	59	34	53	152	44	9
Future Volume (vph)	59	34	53	152	44	9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	104	60	93	267	77	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	164	360	0	93	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	59	34	53	152	44	9
Future Vol, veh/h	59	34	53	152	44	9
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	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	60	93	267	77	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	360	0	-	0	495 227
Stage 1	-	-	-	-	227 -
Stage 2	-	-	-	-	268 -
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	1199	-	-	-	534 812
Stage 1	-	-	-	-	811 -
Stage 2	-	-	-	-	777 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1199	-	-	-	486 812
Mov Cap-2 Maneuver	-	-	-	-	486 -
Stage 1	-	-	-	-	738 -
Stage 2	-	-	-	-	777 -

Approach	EB	WB	SB
HCM Control Delay, s	5.3	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1199	-	-	-	522
HCM Lane V/C Ratio	0.086	-	-	-	0.178
HCM Control Delay (s)	8.3	0	-	-	13.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.6

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982			0.975			0.946				0.965
Flt Protected	0.950			0.950				0.974				0.982
Satd. Flow (prot)	1583	1829	0	1583	1816	0	0	1716	0	0	1765	0
Flt Permitted	0.950			0.950				0.974				0.982
Satd. Flow (perm)	1583	1829	0	1583	1816	0	0	1716	0	0	1765	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	6	66	9	18	111	22	48	6	36	58	57	41
Future Volume (vph)	6	66	9	18	111	22	48	6	36	58	57	41
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	116	16	32	195	39	84	11	63	102	100	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	132	0	32	234	0	0	158	0	0	274	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	9.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	6	66	9	18	111	22	48	6	36	58	57	41
Future Vol, veh/h	6	66	9	18	111	22	48	6	36	58	57	41
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	116	16	32	195	39	84	11	63	102	100	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	234	0	0	132	0	0	511	444	124	462	433	215
Stage 1	-	-	-	-	-	-	146	146	-	279	279	-
Stage 2	-	-	-	-	-	-	365	298	-	183	154	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1333	-	-	1453	-	-	473	508	927	510	516	825
Stage 1	-	-	-	-	-	-	857	776	-	728	680	-
Stage 2	-	-	-	-	-	-	654	667	-	819	770	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1333	-	-	1453	-	-	358	493	927	457	501	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	493	-	457	501	-
Stage 1	-	-	-	-	-	-	850	770	-	722	665	-
Stage 2	-	-	-	-	-	-	496	652	-	747	764	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.9			15.9			18.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	486	1333	-	-	1453	-	-	537
HCM Lane V/C Ratio	0.325	0.008	-	-	0.022	-	-	0.51
HCM Control Delay (s)	15.9	7.7	-	-	7.5	-	-	18.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0	-	-	0.1	-	-	2.9

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.928	
Flt Protected	0.954			0.998		
Satd. Flow (prot)	1768	0	0	1859	1729	0
Flt Permitted	0.954			0.998		
Satd. Flow (perm)	1768	0	0	1859	1729	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1911			1041	1937	
Travel Time (s)	43.4			23.7	44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	22	1	1	21	25	28
Future Volume (vph)	22	1	1	21	25	28
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	24	1	1	23	27	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	24	58	0
Intersection Summary						

HCM 6th AWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	22	1	1	21	25	28
Future Vol, veh/h	22	1	1	21	25	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	1	1	23	27	31
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	7.2	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	5%	96%	0%
Vol Thru, %	95%	0%	47%
Vol Right, %	0%	4%	53%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	22	23	53
LT Vol	1	22	0
Through Vol	21	0	25
RT Vol	0	1	28
Lane Flow Rate	24	25	58
Geometry Grp	1	1	1
Degree of Util (X)	0.027	0.03	0.06
Departure Headway (Hd)	4.03	4.241	3.678
Convergence, Y/N	Yes	Yes	Yes
Cap	889	844	974
Service Time	2.053	2.268	1.699
HCM Lane V/C Ratio	0.027	0.03	0.06
HCM Control Delay	7.2	7.4	6.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0.2

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.934			0.975			0.993			0.989	
Flt Protected		0.997			0.977			0.991			0.998	
Satd. Flow (prot)	0	1735	0	0	1774	0	0	1833	0	0	1839	0
Flt Permitted		0.997			0.977			0.991			0.998	
Satd. Flow (perm)	0	1735	0	0	1774	0	0	1833	0	0	1839	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	3	18	20	22	16	9	25	100	7	4	76	7
Future Volume (vph)	3	18	20	22	16	9	25	100	7	4	76	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	20	22	25	18	10	28	112	8	4	85	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	53	0	0	148	0	0	97	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	18	20	22	16	9	25	100	7	4	76	7
Future Vol, veh/h	3	18	20	22	16	9	25	100	7	4	76	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	20	22	25	18	10	28	112	8	4	85	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	283	273	89	290	273	116	93	0	0	120	0	0
Stage 1	97	97	-	172	172	-	-	-	-	-	-	-
Stage 2	186	176	-	118	101	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	669	634	969	662	634	936	1501	-	-	1468	-	-
Stage 1	910	815	-	830	756	-	-	-	-	-	-	-
Stage 2	816	753	-	887	811	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	636	619	969	620	619	936	1501	-	-	1468	-	-
Mov Cap-2 Maneuver	636	619	-	620	619	-	-	-	-	-	-	-
Stage 1	892	813	-	813	741	-	-	-	-	-	-	-
Stage 2	772	738	-	842	809	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.1		10.9		1.4		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1501	-	-	753	662	1468	-
HCM Lane V/C Ratio	0.019	-	-	0.061	0.08	0.003	-
HCM Control Delay (s)	7.4	0	-	10.1	10.9	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.3	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.918		0.979			
Flt Protected	0.981					0.988
Satd. Flow (prot)	1678	0	1824	0	0	1840
Flt Permitted	0.981					0.988
Satd. Flow (perm)	1678	0	1824	0	0	1840
Link Speed (mph)	30		30			30
Link Distance (ft)	1911		1029			781
Travel Time (s)	43.4		23.4			17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022






Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	24	38	110	21	24	79
Future Volume (vph)	24	38	110	21	24	79
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	26	40	117	22	26	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	139	0	0	110
Intersection Summary						

HCM 6th AWSC
3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	38	110	21	24	79
Future Vol, veh/h	24	38	110	21	24	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	40	117	22	26	84
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.5	7.9	7.9
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	39%	23%
Vol Thru, %	84%	0%	77%
Vol Right, %	16%	61%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	131	62	103
LT Vol	0	24	24
Through Vol	110	0	79
RT Vol	21	38	0
Lane Flow Rate	139	66	110
Geometry Grp	1	1	1
Degree of Util (X)	0.156	0.077	0.128
Departure Headway (Hd)	4.037	4.184	4.203
Convergence, Y/N	Yes	Yes	Yes
Cap	881	861	845
Service Time	2.1	2.184	2.268
HCM Lane V/C Ratio	0.158	0.077	0.13
HCM Control Delay	7.9	7.5	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.2	0.4

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.956		0.979	
Flt Protected		0.996			0.960	
Satd. Flow (prot)	0	1855	1781	0	1751	0
Flt Permitted		0.996			0.960	
Satd. Flow (perm)	0	1855	1781	0	1751	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

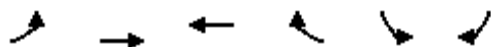
Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	4	44	64	31	34	6
Future Volume (vph)	4	44	64	31	34	6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	5	55	80	39	43	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	60	119	0	51	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	4	44	64	31	34	6
Future Vol, veh/h	4	44	64	31	34	6
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	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	55	80	39	43	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	119	0	-	0	165
Stage 1	-	-	-	-	100
Stage 2	-	-	-	-	65
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	1469	-	-	-	826
Stage 1	-	-	-	-	924
Stage 2	-	-	-	-	958
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1469	-	-	-	823
Mov Cap-2 Maneuver	-	-	-	-	823
Stage 1	-	-	-	-	920
Stage 2	-	-	-	-	958

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1469	-	-	-	841
HCM Lane V/C Ratio	0.003	-	-	-	0.059
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991			0.964			0.909				0.984
Flt Protected	0.950			0.950				0.991				0.970
Satd. Flow (prot)	1583	1846	0	1583	1796	0	0	1678	0	0	1778	0
Flt Permitted	0.950			0.950				0.991				0.970
Satd. Flow (perm)	1583	1846	0	1583	1796	0	0	1678	0	0	1778	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	82	5	43	90	28	12	9	44	23	9	4
Future Volume (vph)	4	82	5	43	90	28	12	9	44	23	9	4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	96	6	51	106	33	14	11	52	27	11	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	102	0	51	139	0	0	77	0	0	43	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	4	82	5	43	90	28	12	9	44	23	9	4
Future Vol, veh/h	4	82	5	43	90	28	12	9	44	23	9	4
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	96	6	51	106	33	14	11	52	27	11	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	139	0	0	102	0	0	342	350	99	366	337	123
Stage 1	-	-	-	-	-	-	109	109	-	225	225	-
Stage 2	-	-	-	-	-	-	233	241	-	141	112	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1445	-	-	1490	-	-	612	574	957	590	584	928
Stage 1	-	-	-	-	-	-	896	805	-	778	718	-
Stage 2	-	-	-	-	-	-	770	706	-	862	803	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1445	-	-	1490	-	-	583	553	957	534	562	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	583	553	-	534	562	-
Stage 1	-	-	-	-	-	-	893	803	-	776	694	-
Stage 2	-	-	-	-	-	-	729	682	-	802	801	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2	10.1	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	785	1445	-	-	1490	-	-	568
HCM Lane V/C Ratio	0.097	0.003	-	-	0.034	-	-	0.075
HCM Control Delay (s)	10.1	7.5	-	-	7.5	-	-	11.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.2

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.929	
Flt Protected	0.956			0.992		
Satd. Flow (prot)	1763	0	0	1848	1730	0
Flt Permitted	0.956			0.992		
Satd. Flow (perm)	1763	0	0	1848	1730	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1911			1041	1937	
Travel Time (s)	43.4			23.7	44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	11	1	2	10	15	17
Future Volume (vph)	11	1	2	10	15	17
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	12	1	2	11	16	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	34	0
Intersection Summary						

HCM 6th AWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	11	1	2	10	15	17
Future Vol, veh/h	11	1	2	10	15	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	1	2	11	16	18
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	7.1	6.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	17%	92%	0%
Vol Thru, %	83%	0%	47%
Vol Right, %	0%	8%	53%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	12	12	32
LT Vol	2	11	0
Through Vol	10	0	15
RT Vol	0	1	17
Lane Flow Rate	13	13	35
Geometry Grp	1	1	1
Degree of Util (X)	0.015	0.015	0.035
Departure Headway (Hd)	4.017	4.151	3.649
Convergence, Y/N	Yes	Yes	Yes
Cap	894	865	985
Service Time	2.026	2.165	1.657
HCM Lane V/C Ratio	0.015	0.015	0.036
HCM Control Delay	7.1	7.2	6.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.1

Appendix D

Existing Plus Project Conditions
Intersection Analysis Worksheets

Lanes and Geometrics

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932						0.865				
Flt Protected					0.950							
Satd. Flow (prot)	0	1736	0	0	1770	0	0	1611	0	0	1863	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1736	0	0	1770	0	0	1611	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1087			1337			1527			801	
Travel Time (s)		24.7			30.4			34.7			18.2	

Intersection Summary

Area Type: Other

Volume

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	1	1	9	0	0	0	0	19	0	0	0
Future Volume (vph)	0	1	1	9	0	0	0	0	19	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	3	3	24	0	0	0	0	50	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	24	0	0	50	0	0	0	0
Intersection Summary												

HCM 6th TWSC
1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	1	9	0	0	0	0	19	0	0	0
Future Vol, veh/h	0	1	1	9	0	0	0	0	19	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	38	38	38	38	38	38	38	38	38
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	3	24	0	0	0	0	50	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	6	0	0	53	53	5	78	54	0
Stage 1	-	-	-	-	-	-	5	5	-	48	48	-
Stage 2	-	-	-	-	-	-	48	48	-	30	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1615	-	-	946	838	1078	911	837	-
Stage 1	-	-	-	-	-	-	1017	892	-	965	855	-
Stage 2	-	-	-	-	-	-	965	855	-	987	891	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1615	-	-	-	825	1078	859	824	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	825	-	859	824	-
Stage 1	-	-	-	-	-	-	1017	892	-	965	842	-
Stage 2	-	-	-	-	-	-	951	842	-	941	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1615	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.015	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.953			0.978			0.945			0.995	
Flt Protected		0.994			0.976			0.998			0.995	
Satd. Flow (prot)	0	1765	0	0	1778	0	0	1757	0	0	1844	0
Flt Permitted		0.994			0.976			0.998			0.995	
Satd. Flow (perm)	0	1765	0	0	1778	0	0	1757	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	9	43	27	37	25	12	5	86	62	11	106	5
Future Volume (vph)	9	43	27	37	25	12	5	86	62	11	106	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	61	39	53	36	17	7	123	89	16	151	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	106	0	0	219	0	0	174	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	43	27	37	25	12	5	86	62	11	106	5
Future Vol, veh/h	9	43	27	37	25	12	5	86	62	11	106	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	61	39	53	36	17	7	123	89	16	151	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	395	413	155	419	372	168	158	0	0	212	0	0
Stage 1	187	187	-	182	182	-	-	-	-	-	-	-
Stage 2	208	226	-	237	190	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	565	529	891	544	558	876	1422	-	-	1358	-	-
Stage 1	815	745	-	820	749	-	-	-	-	-	-	-
Stage 2	794	717	-	766	743	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	519	519	891	467	547	876	1422	-	-	1358	-	-
Mov Cap-2 Maneuver	519	519	-	467	547	-	-	-	-	-	-	-
Stage 1	810	735	-	815	745	-	-	-	-	-	-	-
Stage 2	737	713	-	663	733	-	-	-	-	-	-	-

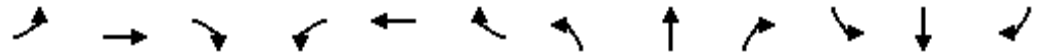
Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.3		13.4		0.2		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1422	-	-	605	534	1358	-
HCM Lane V/C Ratio	0.005	-	-	0.187	0.198	0.012	-
HCM Control Delay (s)	7.5	0	-	12.3	13.4	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.7	0.7	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.943			0.982				0.999
Flt Protected		0.998			0.978						0.983	
Satd. Flow (prot)	0	1859	0	0	1718	0	0	1829	0	0	1829	0
Flt Permitted		0.998			0.978						0.983	
Satd. Flow (perm)	0	1859	0	0	1718	0	0	1829	0	0	1829	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			1911			1029			781	
Travel Time (s)		16.0			43.4			23.4			17.8	

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	1	26	0	32	8	30	0	105	16	70	127	1
Future Volume (vph)	1	26	0	32	8	30	0	105	16	70	127	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	32	0	40	10	37	0	130	20	86	157	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	87	0	0	150	0	0	244	0
Intersection Summary												

HCM 6th TWSC
3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	10.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	26	0	32	8	30	0	105	16	70	127	1
Future Vol, veh/h	1	26	0	32	8	30	0	105	16	70	127	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	32	0	40	10	37	0	130	20	86	157	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	32	0	0	222	161	32	218	143	29
Stage 1	-	-	-	-	-	-	34	34	-	109	109	-
Stage 2	-	-	-	-	-	-	188	127	-	109	34	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1580	-	-	734	731	1042	738	748	1046
Stage 1	-	-	-	-	-	-	982	867	-	896	805	-
Stage 2	-	-	-	-	-	-	814	791	-	896	867	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1560	-	-	1580	-	-	600	711	1042	610	728	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	600	711	-	610	728	-
Stage 1	-	-	-	-	-	-	981	866	-	895	784	-
Stage 2	-	-	-	-	-	-	634	770	-	747	866	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			3.4			11.1			13.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	742	1560	-	-	1580	-	-	682
HCM Lane V/C Ratio	0.201	0.001	-	-	0.025	-	-	0.358
HCM Control Delay (s)	11.1	7.3	0	-	7.3	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	1.6

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.905		0.977	
Flt Protected		0.977			0.960	
Satd. Flow (prot)	0	1820	1686	0	1747	0
Flt Permitted		0.977			0.960	
Satd. Flow (perm)	0	1820	1686	0	1747	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	59	68	64	152	44	9
Future Volume (vph)	59	68	64	152	44	9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	104	119	112	267	77	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	223	379	0	93	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	59	68	64	152	44	9
Future Vol, veh/h	59	68	64	152	44	9
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	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	119	112	267	77	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	379	0	-	0	573 246
Stage 1	-	-	-	-	246 -
Stage 2	-	-	-	-	327 -
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	1179	-	-	-	481 793
Stage 1	-	-	-	-	795 -
Stage 2	-	-	-	-	731 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1179	-	-	-	436 793
Mov Cap-2 Maneuver	-	-	-	-	436 -
Stage 1	-	-	-	-	720 -
Stage 2	-	-	-	-	731 -

Approach	EB	WB	SB
HCM Control Delay, s	3.9	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1179	-	-	-	472
HCM Lane V/C Ratio	0.088	-	-	-	0.197
HCM Control Delay (s)	8.3	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.7

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.977			0.946				0.965
Flt Protected	0.950			0.950				0.974				0.982
Satd. Flow (prot)	1583	1839	0	1583	1820	0	0	1716	0	0	1765	0
Flt Permitted	0.950			0.950				0.974				0.982
Satd. Flow (perm)	1583	1839	0	1583	1820	0	0	1716	0	0	1765	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	6	100	9	18	122	22	48	6	36	58	57	41
Future Volume (vph)	6	100	9	18	122	22	48	6	36	58	57	41
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	175	16	32	214	39	84	11	63	102	100	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	191	0	32	253	0	0	158	0	0	274	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	9.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	6	100	9	18	122	22	48	6	36	58	57	41
Future Vol, veh/h	6	100	9	18	122	22	48	6	36	58	57	41
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	175	16	32	214	39	84	11	63	102	100	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	253	0	0	191	0	0	589	522	183	540	511	234
Stage 1	-	-	-	-	-	-	205	205	-	298	298	-
Stage 2	-	-	-	-	-	-	384	317	-	242	213	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1312	-	-	1383	-	-	420	459	859	453	466	805
Stage 1	-	-	-	-	-	-	797	732	-	711	667	-
Stage 2	-	-	-	-	-	-	639	654	-	762	726	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1312	-	-	1383	-	-	310	445	859	402	452	805
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	445	-	402	452	-
Stage 1	-	-	-	-	-	-	791	726	-	705	652	-
Stage 2	-	-	-	-	-	-	481	639	-	690	720	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.9			18.2			21.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	428	1312	-	-	1383	-	-	486
HCM Lane V/C Ratio	0.369	0.008	-	-	0.023	-	-	0.563
HCM Control Delay (s)	18.2	7.8	-	-	7.7	-	-	21.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.1	-	-	3.4

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.947			0.926			0.956	
Flt Protected		0.993			0.996			0.999			0.981	
Satd. Flow (prot)	0	1848	0	0	1757	0	0	1723	0	0	1747	0
Flt Permitted		0.993			0.996			0.999			0.981	
Satd. Flow (perm)	0	1848	0	0	1757	0	0	1723	0	0	1747	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1911			727			1041			1937	
Travel Time (s)		43.4			16.5			23.7			44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	22	122	1	7	49	36	1	21	26	34	25	28
Future Volume (vph)	22	122	1	7	49	36	1	21	26	34	25	28
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	134	1	8	54	40	1	23	29	37	27	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	159	0	0	102	0	0	53	0	0	95	0
Intersection Summary												

HCM 6th TWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	122	1	7	49	36	1	21	26	34	25	28
Future Vol, veh/h	22	122	1	7	49	36	1	21	26	34	25	28
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	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	134	1	8	54	40	1	23	29	37	27	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	94	0	0	135	0	0	302	293	135	299	273	74
Stage 1	-	-	-	-	-	-	183	183	-	90	90	-
Stage 2	-	-	-	-	-	-	119	110	-	209	183	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1500	-	-	1449	-	-	650	618	914	653	634	988
Stage 1	-	-	-	-	-	-	819	748	-	917	820	-
Stage 2	-	-	-	-	-	-	885	804	-	793	748	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1500	-	-	1449	-	-	598	604	914	603	619	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	598	604	-	603	619	-
Stage 1	-	-	-	-	-	-	805	735	-	901	815	-
Stage 2	-	-	-	-	-	-	824	799	-	731	735	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			0.6			10.2			11		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	740	1500	-	-	1449	-	-	695
HCM Lane V/C Ratio	0.071	0.016	-	-	0.005	-	-	0.138
HCM Control Delay (s)	10.2	7.4	0	-	7.5	0	-	11
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.5

Lanes and Geometrics

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.865											
Flt Protected	0.950											
Satd. Flow (prot)	0	1863	0	0	1770	0	0	1611	0	0	1863	0
Flt Permitted	0.950											
Satd. Flow (perm)	0	1863	0	0	1770	0	0	1611	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1087				1337				1527			
Travel Time (s)	24.7				30.4				34.7			

Intersection Summary

Area Type: Other

Volume

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	0	0	24	0	0	0	0	14	0	0	0
Future Volume (vph)	0	0	0	24	0	0	0	0	14	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	48	0	0	0	0	28	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	48	0	0	28	0	0	0	0
Intersection Summary												

HCM 6th TWSC
 1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	24	0	0	0	0	14	0	0	0
Future Vol, veh/h	0	0	0	24	0	0	0	0	14	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	48	0	0	0	0	28	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	2	0	0	98	98	2	112	98	0
Stage 1	-	-	-	-	-	-	2	2	-	96	96	-
Stage 2	-	-	-	-	-	-	96	96	-	16	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1620	-	-	884	792	1082	866	792	-
Stage 1	-	-	-	-	-	-	1021	894	-	911	815	-
Stage 2	-	-	-	-	-	-	911	815	-	1004	894	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1620	-	-	-	768	1082	824	768	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	768	-	824	768	-
Stage 1	-	-	-	-	-	-	1021	894	-	911	791	-
Stage 2	-	-	-	-	-	-	884	791	-	978	894	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1620	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.03	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0.1	-	-	-

Lanes and Geometrics
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.949			0.986			0.983			0.989	
Flt Protected		0.997			0.976			0.991			0.998	
Satd. Flow (prot)	0	1762	0	0	1793	0	0	1815	0	0	1839	0
Flt Permitted		0.997			0.976			0.991			0.998	
Satd. Flow (perm)	0	1762	0	0	1793	0	0	1815	0	0	1839	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	3	29	20	41	35	9	25	100	18	4	76	7
Future Volume (vph)	3	29	20	41	35	9	25	100	18	4	76	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	33	22	46	39	10	28	112	20	4	85	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	95	0	0	160	0	0	97	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	29	20	41	35	9	25	100	18	4	76	7
Future Vol, veh/h	3	29	20	41	35	9	25	100	18	4	76	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	33	22	46	39	10	28	112	20	4	85	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	300	285	89	303	279	122	93	0	0	132	0	0
Stage 1	97	97	-	178	178	-	-	-	-	-	-	-
Stage 2	203	188	-	125	101	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	652	624	969	649	629	929	1501	-	-	1453	-	-
Stage 1	910	815	-	824	752	-	-	-	-	-	-	-
Stage 2	799	745	-	879	811	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	602	610	969	598	615	929	1501	-	-	1453	-	-
Mov Cap-2 Maneuver	602	610	-	598	615	-	-	-	-	-	-	-
Stage 1	892	813	-	808	737	-	-	-	-	-	-	-
Stage 2	733	730	-	822	809	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.5		11.7		1.3		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1501	-	-	711	629	1453	-
HCM Lane V/C Ratio	0.019	-	-	0.082	0.152	0.003	-
HCM Control Delay (s)	7.4	0	-	10.5	11.7	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.5	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982			0.926			0.979			0.999	
Flt Protected					0.990						0.983	
Satd. Flow (prot)	0	1829	0	0	1708	0	0	1824	0	0	1829	0
Flt Permitted					0.990						0.983	
Satd. Flow (perm)	0	1829	0	0	1708	0	0	1824	0	0	1829	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			1911			1029			781	
Travel Time (s)		16.0			43.4			23.4			17.8	

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	18	3	24	30	67	1	110	21	41	79	1
Future Volume (vph)	0	18	3	24	30	67	1	110	21	41	79	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	19	3	26	32	71	1	117	22	44	84	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	129	0	0	140	0	0	129	0
Intersection Summary												

HCM 6th TWSC
 3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	18	3	24	30	67	1	110	21	41	79	1
Future Vol, veh/h	0	18	3	24	30	67	1	110	21	41	79	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	19	3	26	32	71	1	117	22	44	84	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	103	0	0	22	0	0	183	176	21	210	142	68
Stage 1	-	-	-	-	-	-	21	21	-	120	120	-
Stage 2	-	-	-	-	-	-	162	155	-	90	22	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1489	-	-	1593	-	-	778	717	1056	747	749	995
Stage 1	-	-	-	-	-	-	998	878	-	884	796	-
Stage 2	-	-	-	-	-	-	840	769	-	917	877	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1489	-	-	1593	-	-	700	705	1056	630	736	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	700	705	-	630	736	-
Stage 1	-	-	-	-	-	-	998	878	-	884	782	-
Stage 2	-	-	-	-	-	-	736	756	-	778	877	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.4			11			11.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	744	1489	-	-	1593	-	-	698
HCM Lane V/C Ratio	0.189	-	-	-	0.016	-	-	0.184
HCM Control Delay (s)	11	0	-	-	7.3	0	-	11.3
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.7

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.968		0.979	
Flt Protected		0.997			0.960	
Satd. Flow (prot)	0	1857	1803	0	1751	0
Flt Permitted		0.997			0.960	
Satd. Flow (perm)	0	1857	1803	0	1751	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	4	66	102	31	34	6
Future Volume (vph)	4	66	102	31	34	6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	5	83	128	39	43	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	88	167	0	51	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	4	66	102	31	34	6
Future Vol, veh/h	4	66	102	31	34	6
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	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	83	128	39	43	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	167	0	-	0	241
Stage 1	-	-	-	-	148
Stage 2	-	-	-	-	93
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	1411	-	-	-	747
Stage 1	-	-	-	-	880
Stage 2	-	-	-	-	931
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1411	-	-	-	744
Mov Cap-2 Maneuver	-	-	-	-	744
Stage 1	-	-	-	-	876
Stage 2	-	-	-	-	931

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1411	-	-	-	764
HCM Lane V/C Ratio	0.004	-	-	-	0.065
HCM Control Delay (s)	7.6	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lanes and Geometrics

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.973			0.909				0.984
Flt Protected	0.950			0.950				0.991				0.970
Satd. Flow (prot)	1583	1850	0	1583	1812	0	0	1678	0	0	1778	0
Flt Permitted	0.950			0.950				0.991				0.970
Satd. Flow (perm)	1583	1850	0	1583	1812	0	0	1678	0	0	1778	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	104	5	43	128	28	12	9	44	23	9	4
Future Volume (vph)	4	104	5	43	128	28	12	9	44	23	9	4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	122	6	51	151	33	14	11	52	27	11	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	128	0	51	184	0	0	77	0	0	43	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	4	104	5	43	128	28	12	9	44	23	9	4
Future Vol, veh/h	4	104	5	43	128	28	12	9	44	23	9	4
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	122	6	51	151	33	14	11	52	27	11	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	184	0	0	128	0	0	413	421	125	437	408	168
Stage 1	-	-	-	-	-	-	135	135	-	270	270	-
Stage 2	-	-	-	-	-	-	278	286	-	167	138	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1391	-	-	1458	-	-	549	524	926	530	533	876
Stage 1	-	-	-	-	-	-	868	785	-	736	686	-
Stage 2	-	-	-	-	-	-	728	675	-	835	782	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1391	-	-	1458	-	-	522	504	926	478	512	876
Mov Cap-2 Maneuver	-	-	-	-	-	-	522	504	-	478	512	-
Stage 1	-	-	-	-	-	-	865	782	-	733	662	-
Stage 2	-	-	-	-	-	-	688	651	-	775	779	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.6			10.5			12.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	736	1391	-	-	1458	-	-	512
HCM Lane V/C Ratio	0.104	0.003	-	-	0.035	-	-	0.083
HCM Control Delay (s)	10.5	7.6	-	-	7.6	-	-	12.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.3

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.977			0.909			0.963	
Flt Protected		0.995			0.994			0.998			0.976	
Satd. Flow (prot)	0	1852	0	0	1809	0	0	1690	0	0	1751	0
Flt Permitted		0.995			0.994			0.998			0.976	
Satd. Flow (perm)	0	1852	0	0	1809	0	0	1690	0	0	1751	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1911			727			1041			1937	
Travel Time (s)		43.4			16.5			23.7			44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	11	93	1	24	133	32	2	10	25	29	15	17
Future Volume (vph)	11	93	1	24	133	32	2	10	25	29	15	17
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	12	101	1	26	145	35	2	11	27	32	16	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	114	0	0	206	0	0	40	0	0	66	0
Intersection Summary												

HCM 6th TWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	93	1	24	133	32	2	10	25	29	15	17
Future Vol, veh/h	11	93	1	24	133	32	2	10	25	29	15	17
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	101	1	26	145	35	2	11	27	32	16	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	180	0	0	102	0	0	358	358	102	360	341	163
Stage 1	-	-	-	-	-	-	126	126	-	215	215	-
Stage 2	-	-	-	-	-	-	232	232	-	145	126	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1396	-	-	1490	-	-	597	568	953	596	581	882
Stage 1	-	-	-	-	-	-	878	792	-	787	725	-
Stage 2	-	-	-	-	-	-	771	713	-	858	792	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1396	-	-	1490	-	-	559	552	953	558	565	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	559	552	-	558	565	-
Stage 1	-	-	-	-	-	-	870	785	-	780	711	-
Stage 2	-	-	-	-	-	-	724	699	-	815	785	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.9			9.9			11.5		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	772	1396	-	-	1490	-	-	624
HCM Lane V/C Ratio	0.052	0.009	-	-	0.018	-	-	0.106
HCM Control Delay (s)	9.9	7.6	0	-	7.5	0	-	11.5
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.4

Appendix E

Opening Year (2025) Without Project Conditions
Intersection Analysis Worksheets

Lanes and Geometrics
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.942			0.974			0.955			0.995	
Flt Protected		0.993			0.976			0.998			0.995	
Satd. Flow (prot)	0	1742	0	0	1771	0	0	1775	0	0	1844	0
Flt Permitted		0.993			0.976			0.998			0.995	
Satd. Flow (perm)	0	1742	0	0	1771	0	0	1775	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	10	28	29	34	21	13	5	93	49	12	115	5
Future Volume (vph)	10	28	29	34	21	13	5	93	49	12	115	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	40	41	49	30	19	7	133	70	17	164	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	0	0	98	0	0	210	0	0	188	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	28	29	34	21	13	5	93	49	12	115	5
Future Vol, veh/h	10	28	29	34	21	13	5	93	49	12	115	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	40	41	49	30	19	7	133	70	17	164	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	409	419	168	424	387	168	171	0	0	203	0	0
Stage 1	202	202	-	182	182	-	-	-	-	-	-	-
Stage 2	207	217	-	242	205	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	553	525	876	540	547	876	1406	-	-	1369	-	-
Stage 1	800	734	-	820	749	-	-	-	-	-	-	-
Stage 2	795	723	-	762	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	510	515	876	477	536	876	1406	-	-	1369	-	-
Mov Cap-2 Maneuver	510	515	-	477	536	-	-	-	-	-	-	-
Stage 1	795	724	-	815	745	-	-	-	-	-	-	-
Stage 2	742	719	-	676	722	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	11.8		13.1		0.3		0.7			
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1406	-	-	626	543	1369	-
HCM Lane V/C Ratio	0.005	-	-	0.153	0.179	0.013	-
HCM Control Delay (s)	7.6	0	-	11.8	13.1	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	0.6	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.945		0.982			
Flt Protected	0.971					0.987
Satd. Flow (prot)	1709	0	1829	0	0	1839
Flt Permitted	0.971					0.987
Satd. Flow (perm)	1709	0	1829	0	0	1839
Link Speed (mph)	30		30			30
Link Distance (ft)	1911		1029			781
Travel Time (s)	43.4		23.4			17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022






Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	35	24	114	17	48	137
Future Volume (vph)	35	24	114	17	48	137
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	43	30	141	21	59	169
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	162	0	0	228
Intersection Summary						

HCM 6th AWSC
 3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	24	114	17	48	137
Future Vol, veh/h	35	24	114	17	48	137
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	30	141	21	59	169
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.2	8.3	9
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	59%	26%
Vol Thru, %	87%	0%	74%
Vol Right, %	13%	41%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	131	59	185
LT Vol	0	35	48
Through Vol	114	0	137
RT Vol	17	24	0
Lane Flow Rate	162	73	228
Geometry Grp	1	1	1
Degree of Util (X)	0.192	0.094	0.275
Departure Headway (Hd)	4.268	4.664	4.339
Convergence, Y/N	Yes	Yes	Yes
Cap	843	770	834
Service Time	2.281	2.684	2.339
HCM Lane V/C Ratio	0.192	0.095	0.273
HCM Control Delay	8.3	8.2	9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.3	1.1

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.900		0.976	
Flt Protected		0.969			0.960	
Satd. Flow (prot)	0	1805	1676	0	1745	0
Flt Permitted		0.969			0.960	
Satd. Flow (perm)	0	1805	1676	0	1745	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

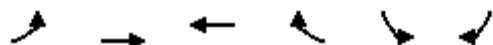
Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	64	37	57	165	48	10
Future Volume (vph)	64	37	57	165	48	10
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	112	65	100	289	84	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	177	389	0	102	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	64	37	57	165	48	10
Future Vol, veh/h	64	37	57	165	48	10
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	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	65	100	289	84	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	389	0	0	534	245
Stage 1	-	-	-	245	-
Stage 2	-	-	-	289	-
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	1170	-	-	507	794
Stage 1	-	-	-	796	-
Stage 2	-	-	-	760	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1170	-	-	457	794
Mov Cap-2 Maneuver	-	-	-	457	-
Stage 1	-	-	-	717	-
Stage 2	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s	5.3	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1170	-	-	-	493
HCM Lane V/C Ratio	0.096	-	-	-	0.206
HCM Control Delay (s)	8.4	0	-	-	14.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.975			0.946				0.965
Flt Protected	0.950			0.950				0.974				0.982
Satd. Flow (prot)	1583	1827	0	1583	1816	0	0	1716	0	0	1765	0
Flt Permitted	0.950			0.950				0.974				0.982
Satd. Flow (perm)	1583	1827	0	1583	1816	0	0	1716	0	0	1765	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	6	71	10	19	120	24	52	6	39	63	62	44
Future Volume (vph)	6	71	10	19	120	24	52	6	39	63	62	44
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	125	18	33	211	42	91	11	68	111	109	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	143	0	33	253	0	0	170	0	0	297	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	10.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	6	71	10	19	120	24	52	6	39	63	62	44
Future Vol, veh/h	6	71	10	19	120	24	52	6	39	63	62	44
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	125	18	33	211	42	91	11	68	111	109	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	253	0	0	143	0	0	547	475	134	494	463	232
Stage 1	-	-	-	-	-	-	156	156	-	298	298	-
Stage 2	-	-	-	-	-	-	391	319	-	196	165	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1312	-	-	1440	-	-	448	488	915	486	496	807
Stage 1	-	-	-	-	-	-	846	769	-	711	667	-
Stage 2	-	-	-	-	-	-	633	653	-	806	762	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1312	-	-	1440	-	-	327	473	915	432	481	807
Mov Cap-2 Maneuver	-	-	-	-	-	-	327	473	-	432	481	-
Stage 1	-	-	-	-	-	-	839	763	-	705	652	-
Stage 2	-	-	-	-	-	-	466	638	-	729	756	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.9			17.7			21.2		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	453	1312	-	-	1440	-	-	513
HCM Lane V/C Ratio	0.376	0.008	-	-	0.023	-	-	0.578
HCM Control Delay (s)	17.7	7.8	-	-	7.6	-	-	21.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.1	-	-	3.6

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.929	
Flt Protected	0.954			0.998		
Satd. Flow (prot)	1768	0	0	1859	1730	0
Flt Permitted	0.954			0.998		
Satd. Flow (perm)	1768	0	0	1859	1730	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1911			1041	1937	
Travel Time (s)	43.4			23.7	44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	24	1	1	23	27	30
Future Volume (vph)	24	1	1	23	27	30
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	26	1	1	25	30	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	0	26	63	0
Intersection Summary						

HCM 6th AWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection

Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	24	1	1	23	27	30
Future Vol, veh/h	24	1	1	23	27	30
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	1	1	25	30	33
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	7.2	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	4%	96%	0%
Vol Thru, %	96%	0%	47%
Vol Right, %	0%	4%	53%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	24	25	57
LT Vol	1	24	0
Through Vol	23	0	27
RT Vol	0	1	30
Lane Flow Rate	26	27	63
Geometry Grp	1	1	1
Degree of Util (X)	0.03	0.032	0.064
Departure Headway (Hd)	4.037	4.256	3.685
Convergence, Y/N	Yes	Yes	Yes
Cap	887	841	972
Service Time	2.06	2.285	1.706
HCM Lane V/C Ratio	0.029	0.032	0.065
HCM Control Delay	7.2	7.4	7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0.2

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.931			0.974			0.992			0.988	
Flt Protected		0.997			0.977			0.991			0.998	
Satd. Flow (prot)	0	1729	0	0	1773	0	0	1831	0	0	1837	0
Flt Permitted		0.997			0.977			0.991			0.998	
Satd. Flow (perm)	0	1729	0	0	1773	0	0	1831	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	3	19	22	24	17	10	27	108	8	4	82	8
Future Volume (vph)	3	19	22	24	17	10	27	108	8	4	82	8
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	21	25	27	19	11	30	121	9	4	92	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	57	0	0	160	0	0	105	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	19	22	24	17	10	27	108	8	4	82	8
Future Vol, veh/h	3	19	22	24	17	10	27	108	8	4	82	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	21	25	27	19	11	30	121	9	4	92	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	306	295	97	314	295	126	101	0	0	130	0	0
Stage 1	105	105	-	186	186	-	-	-	-	-	-	-
Stage 2	201	190	-	128	109	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	646	616	959	639	616	924	1491	-	-	1455	-	-
Stage 1	901	808	-	816	746	-	-	-	-	-	-	-
Stage 2	801	743	-	876	805	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	611	601	959	594	601	924	1491	-	-	1455	-	-
Mov Cap-2 Maneuver	611	601	-	594	601	-	-	-	-	-	-	-
Stage 1	881	806	-	798	730	-	-	-	-	-	-	-
Stage 2	754	727	-	828	803	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		11.2		1.4		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1491	-	-	740	641	1455	-
HCM Lane V/C Ratio	0.02	-	-	0.067	0.089	0.003	-
HCM Control Delay (s)	7.5	0	-	10.2	11.2	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.3	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.917		0.979			
Flt Protected	0.981					0.988
Satd. Flow (prot)	1676	0	1824	0	0	1840
Flt Permitted	0.981					0.988
Satd. Flow (perm)	1676	0	1824	0	0	1840
Link Speed (mph)	30		30			30
Link Distance (ft)	1911		1029			781
Travel Time (s)	43.4		23.4			17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022






Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	26	41	119	23	26	86
Future Volume (vph)	26	41	119	23	26	86
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	28	44	127	24	28	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	0	151	0	0	119
Intersection Summary						

HCM 6th AWSC
 3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	41	119	23	26	86
Future Vol, veh/h	26	41	119	23	26	86
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	44	127	24	28	91
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.6	8	8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	39%	23%
Vol Thru, %	84%	0%	77%
Vol Right, %	16%	61%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	142	67	112
LT Vol	0	26	26
Through Vol	119	0	86
RT Vol	23	41	0
Lane Flow Rate	151	71	119
Geometry Grp	1	1	1
Degree of Util (X)	0.17	0.084	0.14
Departure Headway (Hd)	4.052	4.232	4.22
Convergence, Y/N	Yes	Yes	Yes
Cap	875	852	840
Service Time	2.124	2.232	2.294
HCM Lane V/C Ratio	0.173	0.083	0.142
HCM Control Delay	8	7.6	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.3	0.5

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.955		0.980	
Flt Protected		0.996			0.959	
Satd. Flow (prot)	0	1855	1779	0	1751	0
Flt Permitted		0.996			0.959	
Satd. Flow (perm)	0	1855	1779	0	1751	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

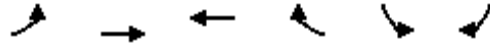
Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	4	48	69	34	37	6
Future Volume (vph)	4	48	69	34	37	6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	5	60	86	43	46	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	65	129	0	54	0
Intersection Summary						

HCM 6th TWSC
 4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	4	48	69	34	37	6
Future Vol, veh/h	4	48	69	34	37	6
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	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	60	86	43	46	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	129	0	-	0	178
Stage 1	-	-	-	-	108
Stage 2	-	-	-	-	70
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	1457	-	-	-	812
Stage 1	-	-	-	-	916
Stage 2	-	-	-	-	953
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1457	-	-	-	809
Mov Cap-2 Maneuver	-	-	-	-	809
Stage 1	-	-	-	-	912
Stage 2	-	-	-	-	953

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1457	-	-	-	826
HCM Lane V/C Ratio	0.003	-	-	-	0.065
HCM Control Delay (s)	7.5	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.965			0.909				0.985
Flt Protected	0.950			0.950				0.991				0.969
Satd. Flow (prot)	1583	1848	0	1583	1798	0	0	1678	0	0	1778	0
Flt Permitted	0.950			0.950				0.991				0.969
Satd. Flow (perm)	1583	1848	0	1583	1798	0	0	1678	0	0	1778	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	89	5	47	97	30	13	10	48	25	10	4
Future Volume (vph)	4	89	5	47	97	30	13	10	48	25	10	4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	105	6	55	114	35	15	12	56	29	12	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	111	0	55	149	0	0	83	0	0	46	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	4	89	5	47	97	30	13	10	48	25	10	4
Future Vol, veh/h	4	89	5	47	97	30	13	10	48	25	10	4
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	105	6	55	114	35	15	12	56	29	12	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	111	0	0	368	377	108	394	363	132
Stage 1	-	-	-	-	-	-	118	118	-	242	242	-
Stage 2	-	-	-	-	-	-	250	259	-	152	121	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1432	-	-	1479	-	-	588	555	946	566	565	917
Stage 1	-	-	-	-	-	-	887	798	-	762	705	-
Stage 2	-	-	-	-	-	-	754	694	-	850	796	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1432	-	-	1479	-	-	557	533	946	507	542	917
Mov Cap-2 Maneuver	-	-	-	-	-	-	557	533	-	507	542	-
Stage 1	-	-	-	-	-	-	884	796	-	760	679	-
Stage 2	-	-	-	-	-	-	710	668	-	785	794	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2	10.3	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	765	1432	-	-	1479	-	-	541
HCM Lane V/C Ratio	0.109	0.003	-	-	0.037	-	-	0.085
HCM Control Delay (s)	10.3	7.5	-	-	7.5	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.3

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.927	
Flt Protected	0.956			0.993		
Satd. Flow (prot)	1763	0	0	1850	1727	0
Flt Permitted	0.956			0.993		
Satd. Flow (perm)	1763	0	0	1850	1727	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1911			1041	1937	
Travel Time (s)	43.4			23.7	44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	12	1	2	11	16	18
Future Volume (vph)	12	1	2	11	16	18
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	13	1	2	12	17	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	14	37	0
Intersection Summary						

HCM 6th AWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	12	1	2	11	16	18
Future Vol, veh/h	12	1	2	11	16	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	1	2	12	17	20
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	7.1	6.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	15%	92%	0%
Vol Thru, %	85%	0%	47%
Vol Right, %	0%	8%	53%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	13	13	34
LT Vol	2	12	0
Through Vol	11	0	16
RT Vol	0	1	18
Lane Flow Rate	14	14	37
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.016	0.038
Departure Headway (Hd)	4.018	4.162	3.653
Convergence, Y/N	Yes	Yes	Yes
Cap	894	862	984
Service Time	2.028	2.178	1.661
HCM Lane V/C Ratio	0.016	0.016	0.038
HCM Control Delay	7.1	7.2	6.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.1

Appendix F

Opening Year (2025) With Project Conditions
Intersection Analysis Worksheets

Lanes and Geometrics

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932						0.865				
Flt Protected					0.950							
Satd. Flow (prot)	0	1736	0	0	1770	0	0	1611	0	0	1863	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1736	0	0	1770	0	0	1611	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1087			1337			1527			801	
Travel Time (s)		24.7			30.4			34.7			18.2	

Intersection Summary

Area Type: Other

Volume

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	1	1	9	0	0	0	0	19	0	0	0
Future Volume (vph)	0	1	1	9	0	0	0	0	19	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	3	3	24	0	0	0	0	50	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	24	0	0	50	0	0	0	0
Intersection Summary												

HCM 6th TWSC
 1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	1	9	0	0	0	0	19	0	0	0
Future Vol, veh/h	0	1	1	9	0	0	0	0	19	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	38	38	38	38	38	38	38	38	38
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	3	24	0	0	0	0	50	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	6	0	0	53	53	5	78	54	0
Stage 1	-	-	-	-	-	-	5	5	-	48	48	-
Stage 2	-	-	-	-	-	-	48	48	-	30	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1615	-	-	946	838	1078	911	837	-
Stage 1	-	-	-	-	-	-	1017	892	-	965	855	-
Stage 2	-	-	-	-	-	-	965	855	-	987	891	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1615	-	-	-	825	1078	859	824	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	825	-	859	824	-
Stage 1	-	-	-	-	-	-	1017	892	-	965	842	-
Stage 2	-	-	-	-	-	-	951	842	-	941	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1615	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.015	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.953			0.978			0.946			0.995	
Flt Protected		0.994			0.976			0.999			0.995	
Satd. Flow (prot)	0	1765	0	0	1778	0	0	1760	0	0	1844	0
Flt Permitted		0.994			0.976			0.999			0.995	
Satd. Flow (perm)	0	1765	0	0	1778	0	0	1760	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	10	45	29	40	27	13	5	93	66	12	115	5
Future Volume (vph)	10	45	29	40	27	13	5	93	66	12	115	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	64	41	57	39	19	7	133	94	17	164	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	115	0	0	234	0	0	188	0
Intersection Summary												

HCM 6th TWSC
2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	45	29	40	27	13	5	93	66	12	115	5
Future Vol, veh/h	10	45	29	40	27	13	5	93	66	12	115	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	64	41	57	39	19	7	133	94	17	164	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	425	443	168	448	399	180	171	0	0	227	0	0
Stage 1	202	202	-	194	194	-	-	-	-	-	-	-
Stage 2	223	241	-	254	205	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	540	509	876	521	539	863	1406	-	-	1341	-	-
Stage 1	800	734	-	808	740	-	-	-	-	-	-	-
Stage 2	780	706	-	750	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	491	499	876	441	528	863	1406	-	-	1341	-	-
Mov Cap-2 Maneuver	491	499	-	441	528	-	-	-	-	-	-	-
Stage 1	795	724	-	803	736	-	-	-	-	-	-	-
Stage 2	719	702	-	642	722	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.7		14.1		0.2		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1406	-	-	585	510	1341	-
HCM Lane V/C Ratio	0.005	-	-	0.205	0.224	0.013	-
HCM Control Delay (s)	7.6	0	-	12.7	14.1	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.8	0.9	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.942			0.982				0.999
Flt Protected		0.998			0.977							0.983
Satd. Flow (prot)	0	1859	0	0	1714	0	0	1829	0	0	1829	0
Flt Permitted		0.998			0.977							0.983
Satd. Flow (perm)	0	1859	0	0	1714	0	0	1829	0	0	1829	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		706			1911			1029				781
Travel Time (s)		16.0			43.4			23.4				17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	1	26	0	35	8	32	0	114	17	74	137	1
Future Volume (vph)	1	26	0	35	8	32	0	114	17	74	137	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	32	0	43	10	40	0	141	21	91	169	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	93	0	0	162	0	0	261	0
Intersection Summary												

HCM 6th TWSC
 3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	10.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	26	0	35	8	32	0	114	17	74	137	1
Future Vol, veh/h	1	26	0	35	8	32	0	114	17	74	137	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	32	0	43	10	40	0	141	21	91	169	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	32	0	0	235	170	32	231	150	30
Stage 1	-	-	-	-	-	-	34	34	-	116	116	-
Stage 2	-	-	-	-	-	-	201	136	-	115	34	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1557	-	-	1580	-	-	720	723	1042	724	742	1044
Stage 1	-	-	-	-	-	-	982	867	-	889	800	-
Stage 2	-	-	-	-	-	-	801	784	-	890	867	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1557	-	-	1580	-	-	577	702	1042	587	720	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	577	702	-	587	720	-
Stage 1	-	-	-	-	-	-	981	866	-	888	778	-
Stage 2	-	-	-	-	-	-	609	762	-	730	866	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			3.4			11.3			13.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	733	1557	-	-	1580	-	-	668
HCM Lane V/C Ratio	0.221	0.001	-	-	0.027	-	-	0.392
HCM Control Delay (s)	11.3	7.3	0	-	7.3	0	-	13.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	1.9

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.904		0.976	
Flt Protected		0.977			0.960	
Satd. Flow (prot)	0	1820	1684	0	1745	0
Flt Permitted		0.977			0.960	
Satd. Flow (perm)	0	1820	1684	0	1745	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	64	71	68	165	48	10
Future Volume (vph)	64	71	68	165	48	10
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	112	125	119	289	84	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	237	408	0	102	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	64	71	68	165	48	10
Future Vol, veh/h	64	71	68	165	48	10
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	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	125	119	289	84	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	408	0	-	0	613
Stage 1	-	-	-	-	264
Stage 2	-	-	-	-	349
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	1151	-	-	-	456
Stage 1	-	-	-	-	780
Stage 2	-	-	-	-	714
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1151	-	-	-	408
Mov Cap-2 Maneuver	-	-	-	-	408
Stage 1	-	-	-	-	698
Stage 2	-	-	-	-	714

Approach	EB	WB	SB
HCM Control Delay, s	4	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1151	-	-	-	444
HCM Lane V/C Ratio	0.098	-	-	-	0.229
HCM Control Delay (s)	8.5	0	-	-	15.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.9

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.977			0.946				0.965
Flt Protected	0.950			0.950				0.974				0.982
Satd. Flow (prot)	1583	1839	0	1583	1820	0	0	1716	0	0	1765	0
Flt Permitted	0.950			0.950				0.974				0.982
Satd. Flow (perm)	1583	1839	0	1583	1820	0	0	1716	0	0	1765	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	6	105	10	19	131	24	52	6	39	63	62	44
Future Volume (vph)	6	105	10	19	131	24	52	6	39	63	62	44
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	184	18	33	230	42	91	11	68	111	109	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	202	0	33	272	0	0	170	0	0	297	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	11.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	6	105	10	19	131	24	52	6	39	63	62	44
Future Vol, veh/h	6	105	10	19	131	24	52	6	39	63	62	44
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	184	18	33	230	42	91	11	68	111	109	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	272	0	0	202	0	0	625	553	193	572	541	251
Stage 1	-	-	-	-	-	-	215	215	-	317	317	-
Stage 2	-	-	-	-	-	-	410	338	-	255	224	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1291	-	-	1370	-	-	397	441	849	431	448	788
Stage 1	-	-	-	-	-	-	787	725	-	694	654	-
Stage 2	-	-	-	-	-	-	619	641	-	749	718	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1291	-	-	1370	-	-	282	426	849	379	433	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	282	426	-	379	433	-
Stage 1	-	-	-	-	-	-	780	718	-	688	638	-
Stage 2	-	-	-	-	-	-	452	626	-	673	712	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.8			20.7			25.6		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	397	1291	-	-	1370	-	-	463
HCM Lane V/C Ratio	0.429	0.008	-	-	0.024	-	-	0.64
HCM Control Delay (s)	20.7	7.8	-	-	7.7	-	-	25.6
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	2.1	0	-	-	0.1	-	-	4.4

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.947			0.927			0.957	
Flt Protected		0.992			0.996			0.999			0.981	
Satd. Flow (prot)	0	1846	0	0	1757	0	0	1725	0	0	1749	0
Flt Permitted		0.992			0.996			0.999			0.981	
Satd. Flow (perm)	0	1846	0	0	1757	0	0	1725	0	0	1749	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1911			727			1041			1937	
Travel Time (s)		43.4			16.5			23.7			44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	24	128	1	8	52	39	1	23	28	37	27	30
Future Volume (vph)	24	128	1	8	52	39	1	23	28	37	27	30
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	26	141	1	9	57	43	1	25	31	41	30	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	0	0	109	0	0	57	0	0	104	0
Intersection Summary												

HCM 6th TWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	128	1	8	52	39	1	23	28	37	27	30
Future Vol, veh/h	24	128	1	8	52	39	1	23	28	37	27	30
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	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	141	1	9	57	43	1	25	31	41	30	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	100	0	0	142	0	0	322	312	142	319	291	79
Stage 1	-	-	-	-	-	-	194	194	-	97	97	-
Stage 2	-	-	-	-	-	-	128	118	-	222	194	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1493	-	-	1441	-	-	631	603	906	634	619	981
Stage 1	-	-	-	-	-	-	808	740	-	910	815	-
Stage 2	-	-	-	-	-	-	876	798	-	780	740	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1493	-	-	1441	-	-	575	587	906	581	603	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	575	587	-	581	603	-
Stage 1	-	-	-	-	-	-	793	726	-	893	809	-
Stage 2	-	-	-	-	-	-	810	792	-	713	726	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.6			10.4			11.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	724	1493	-	-	1441	-	-	676
HCM Lane V/C Ratio	0.079	0.018	-	-	0.006	-	-	0.153
HCM Control Delay (s)	10.4	7.5	0	-	7.5	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.5

Lanes and Geometrics

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	0		0	0		0	0		0	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt	0.865												
Flt Protected	0.950												
Satd. Flow (prot)	0	1863	0	0	1770	0	0	1611	0	0	1863	0	
Flt Permitted	0.950												
Satd. Flow (perm)	0	1863	0	0	1770	0	0	1611	0	0	1863	0	
Link Speed (mph)	30				30				30				
Link Distance (ft)	1087				1337				1527				801
Travel Time (s)	24.7				30.4				34.7				18.2

Intersection Summary

Area Type: Other

Volume

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	0	0	24	0	0	0	0	14	0	0	0
Future Volume (vph)	0	0	0	24	0	0	0	0	14	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	48	0	0	0	0	28	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	48	0	0	28	0	0	0	0
Intersection Summary												

HCM 6th TWSC
1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	24	0	0	0	0	14	0	0	0
Future Vol, veh/h	0	0	0	24	0	0	0	0	14	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	48	0	0	0	0	28	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	2	0	0	98	98	2	112	98	0
Stage 1	-	-	-	-	-	-	2	2	-	96	96	-
Stage 2	-	-	-	-	-	-	96	96	-	16	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1620	-	-	884	792	1082	866	792	-
Stage 1	-	-	-	-	-	-	1021	894	-	911	815	-
Stage 2	-	-	-	-	-	-	911	815	-	1004	894	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1620	-	-	-	768	1082	824	768	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	768	-	824	768	-
Stage 1	-	-	-	-	-	-	1021	894	-	911	791	-
Stage 2	-	-	-	-	-	-	884	791	-	978	894	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1620	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.03	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0.1	-	-	-

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.946			0.985			0.984			0.988	
Flt Protected		0.998			0.976			0.991			0.998	
Satd. Flow (prot)	0	1759	0	0	1791	0	0	1816	0	0	1837	0
Flt Permitted		0.998			0.976			0.991			0.998	
Satd. Flow (perm)	0	1759	0	0	1791	0	0	1816	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	3	30	22	43	36	10	27	108	19	4	82	8
Future Volume (vph)	3	30	22	43	36	10	27	108	19	4	82	8
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	34	25	48	40	11	30	121	21	4	92	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	62	0	0	99	0	0	172	0	0	105	0
Intersection Summary												

HCM 6th TWSC
2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	30	22	43	36	10	27	108	19	4	82	8
Future Vol, veh/h	3	30	22	43	36	10	27	108	19	4	82	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	34	25	48	40	11	30	121	21	4	92	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	322	307	97	326	301	132	101	0	0	142	0	0
Stage 1	105	105	-	192	192	-	-	-	-	-	-	-
Stage 2	217	202	-	134	109	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	631	607	959	627	612	917	1491	-	-	1441	-	-
Stage 1	901	808	-	810	742	-	-	-	-	-	-	-
Stage 2	785	734	-	869	805	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	580	592	959	573	597	917	1491	-	-	1441	-	-
Mov Cap-2 Maneuver	580	592	-	573	597	-	-	-	-	-	-	-
Stage 1	881	806	-	792	726	-	-	-	-	-	-	-
Stage 2	716	718	-	809	803	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		12.1		1.3		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1491	-	-	698	609	1441	-
HCM Lane V/C Ratio	0.02	-	-	0.089	0.164	0.003	-
HCM Control Delay (s)	7.5	0	-	10.7	12.1	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.6	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982			0.925			0.979			0.999	
Flt Protected					0.990						0.984	
Satd. Flow (prot)	0	1829	0	0	1706	0	0	1824	0	0	1831	0
Flt Permitted					0.990						0.984	
Satd. Flow (perm)	0	1829	0	0	1706	0	0	1824	0	0	1831	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			1911			1029			781	
Travel Time (s)		16.0			43.4			23.4			17.8	

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	18	3	26	30	70	1	119	23	43	86	1
Future Volume (vph)	0	18	3	26	30	70	1	119	23	43	86	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	19	3	28	32	74	1	127	24	46	91	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	134	0	0	152	0	0	138	0
Intersection Summary												

HCM 6th TWSC
 3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	18	3	26	30	70	1	119	23	43	86	1
Future Vol, veh/h	0	18	3	26	30	70	1	119	23	43	86	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	19	3	28	32	74	1	127	24	46	91	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	22	0	0	192	183	21	221	147	69
Stage 1	-	-	-	-	-	-	21	21	-	125	125	-
Stage 2	-	-	-	-	-	-	171	162	-	96	22	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1485	-	-	1593	-	-	768	711	1056	735	744	994
Stage 1	-	-	-	-	-	-	998	878	-	879	792	-
Stage 2	-	-	-	-	-	-	831	764	-	911	877	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1485	-	-	1593	-	-	684	697	1056	609	730	994
Mov Cap-2 Maneuver	-	-	-	-	-	-	684	697	-	609	730	-
Stage 1	-	-	-	-	-	-	998	878	-	879	777	-
Stage 2	-	-	-	-	-	-	718	749	-	762	877	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.5			11.2			11.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	737	1485	-	-	1593	-	-	686
HCM Lane V/C Ratio	0.206	-	-	-	0.017	-	-	0.202
HCM Control Delay (s)	11.2	0	-	-	7.3	0	-	11.6
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	0.7

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.967		0.980	
Flt Protected		0.997			0.959	
Satd. Flow (prot)	0	1857	1801	0	1751	0
Flt Permitted		0.997			0.959	
Satd. Flow (perm)	0	1857	1801	0	1751	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	4	70	107	34	37	6
Future Volume (vph)	4	70	107	34	37	6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	5	88	134	43	46	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	93	177	0	54	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	4	70	107	34	37	6
Future Vol, veh/h	4	70	107	34	37	6
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	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	88	134	43	46	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	177	0	-	0	254
Stage 1	-	-	-	-	156
Stage 2	-	-	-	-	98
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	1399	-	-	-	735
Stage 1	-	-	-	-	872
Stage 2	-	-	-	-	926
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1399	-	-	-	732
Mov Cap-2 Maneuver	-	-	-	-	732
Stage 1	-	-	-	-	869
Stage 2	-	-	-	-	926

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1399	-	-	-	751
HCM Lane V/C Ratio	0.004	-	-	-	0.072
HCM Control Delay (s)	7.6	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.973			0.909				0.985
Flt Protected	0.950			0.950				0.991				0.969
Satd. Flow (prot)	1583	1850	0	1583	1812	0	0	1678	0	0	1778	0
Flt Permitted	0.950			0.950				0.991				0.969
Satd. Flow (perm)	1583	1850	0	1583	1812	0	0	1678	0	0	1778	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	111	5	47	135	30	13	10	48	25	10	4
Future Volume (vph)	4	111	5	47	135	30	13	10	48	25	10	4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	131	6	55	159	35	15	12	56	29	12	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	137	0	55	194	0	0	83	0	0	46	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	4	111	5	47	135	30	13	10	48	25	10	4
Future Vol, veh/h	4	111	5	47	135	30	13	10	48	25	10	4
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	131	6	55	159	35	15	12	56	29	12	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	194	0	0	137	0	0	439	448	134	465	434	177
Stage 1	-	-	-	-	-	-	144	144	-	287	287	-
Stage 2	-	-	-	-	-	-	295	304	-	178	147	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1379	-	-	1447	-	-	528	506	915	508	515	866
Stage 1	-	-	-	-	-	-	859	778	-	720	674	-
Stage 2	-	-	-	-	-	-	713	663	-	824	775	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1379	-	-	1447	-	-	499	485	915	453	493	866
Mov Cap-2 Maneuver	-	-	-	-	-	-	499	485	-	453	493	-
Stage 1	-	-	-	-	-	-	856	775	-	717	648	-
Stage 2	-	-	-	-	-	-	670	638	-	759	772	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.7			10.7			13.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	716	1379	-	-	1447	-	-	487
HCM Lane V/C Ratio	0.117	0.003	-	-	0.038	-	-	0.094
HCM Control Delay (s)	10.7	7.6	-	-	7.6	-	-	13.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.3

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.976			0.909			0.962	
Flt Protected		0.995			0.994			0.998			0.977	
Satd. Flow (prot)	0	1852	0	0	1807	0	0	1690	0	0	1751	0
Flt Permitted		0.995			0.994			0.998			0.977	
Satd. Flow (perm)	0	1852	0	0	1807	0	0	1690	0	0	1751	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1911			727			1041			1937	
Travel Time (s)		43.4			16.5			23.7			44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	98	1	26	139	35	2	11	27	31	16	18
Future Volume (vph)	12	98	1	26	139	35	2	11	27	31	16	18
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	107	1	28	151	38	2	12	29	34	17	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	217	0	0	43	0	0	71	0
Intersection Summary												

HCM 6th TWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	98	1	26	139	35	2	11	27	31	16	18
Future Vol, veh/h	12	98	1	26	139	35	2	11	27	31	16	18
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	107	1	28	151	38	2	12	29	34	17	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	189	0	0	108	0	0	379	379	108	380	360	170
Stage 1	-	-	-	-	-	-	134	134	-	226	226	-
Stage 2	-	-	-	-	-	-	245	245	-	154	134	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1385	-	-	1483	-	-	579	553	946	578	567	874
Stage 1	-	-	-	-	-	-	869	785	-	777	717	-
Stage 2	-	-	-	-	-	-	759	703	-	848	785	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1385	-	-	1483	-	-	540	536	946	538	549	874
Mov Cap-2 Maneuver	-	-	-	-	-	-	540	536	-	538	549	-
Stage 1	-	-	-	-	-	-	860	777	-	769	702	-
Stage 2	-	-	-	-	-	-	708	688	-	801	777	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			1			10			11.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	758	1385	-	-	1483	-	-	605
HCM Lane V/C Ratio	0.057	0.009	-	-	0.019	-	-	0.117
HCM Control Delay (s)	10	7.6	0	-	7.5	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.4

Appendix G

Future Year (2035) Without Project Conditions
Intersection Analysis Worksheets

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.941			0.973			0.955			0.994	
Flt Protected		0.993			0.976			0.998			0.995	
Satd. Flow (prot)	0	1741	0	0	1769	0	0	1775	0	0	1842	0
Flt Permitted		0.993			0.976			0.998			0.995	
Satd. Flow (perm)	0	1741	0	0	1769	0	0	1775	0	0	1842	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	34	36	41	25	16	7	113	59	15	140	7
Future Volume (vph)	12	34	36	41	25	16	7	113	59	15	140	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	36	38	43	26	17	7	119	62	16	147	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	0	0	86	0	0	188	0	0	170	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	34	36	41	25	16	7	113	59	15	140	7
Future Vol, veh/h	12	34	36	41	25	16	7	113	59	15	140	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	36	38	43	26	17	7	119	62	16	147	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	369	378	151	384	350	150	154	0	0	181	0	0
Stage 1	183	183	-	164	164	-	-	-	-	-	-	-
Stage 2	186	195	-	220	186	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	588	554	895	574	574	896	1426	-	-	1394	-	-
Stage 1	819	748	-	838	762	-	-	-	-	-	-	-
Stage 2	816	739	-	782	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	549	543	895	514	563	896	1426	-	-	1394	-	-
Mov Cap-2 Maneuver	549	543	-	514	563	-	-	-	-	-	-	-
Stage 1	814	738	-	833	757	-	-	-	-	-	-	-
Stage 2	768	735	-	703	736	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.3		12.3		0.3		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1426	-	-	658	577	1394	-
HCM Lane V/C Ratio	0.005	-	-	0.131	0.15	0.011	-
HCM Control Delay (s)	7.5	0	-	11.3	12.3	7.6	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	0.5	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.944		0.982			
Flt Protected	0.972					0.987
Satd. Flow (prot)	1709	0	1829	0	0	1839
Flt Permitted	0.972					0.987
Satd. Flow (perm)	1709	0	1829	0	0	1839
Link Speed (mph)	30		30			30
Link Distance (ft)	1911		1029			781
Travel Time (s)	43.4		23.4			17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022






Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	42	29	139	21	58	168
Future Volume (vph)	42	29	139	21	58	168
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	44	31	146	22	61	177
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	168	0	0	238
Intersection Summary						

HCM 6th AWSC
3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	29	139	21	58	168
Future Vol, veh/h	42	29	139	21	58	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	31	146	22	61	177
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.2	8.4	9.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	59%	26%
Vol Thru, %	87%	0%	74%
Vol Right, %	13%	41%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	160	71	226
LT Vol	0	42	58
Through Vol	139	0	168
RT Vol	21	29	0
Lane Flow Rate	168	75	238
Geometry Grp	1	1	1
Degree of Util (X)	0.2	0.098	0.288
Departure Headway (Hd)	4.284	4.699	4.354
Convergence, Y/N	Yes	Yes	Yes
Cap	840	764	830
Service Time	2.3	2.72	2.354
HCM Lane V/C Ratio	0.2	0.098	0.287
HCM Control Delay	8.4	8.2	9.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.3	1.2

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.900		0.976	
Flt Protected		0.969			0.960	
Satd. Flow (prot)	0	1805	1676	0	1745	0
Flt Permitted		0.969			0.960	
Satd. Flow (perm)	0	1805	1676	0	1745	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	78	45	70	201	58	12
Future Volume (vph)	78	45	70	201	58	12
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	82	47	74	212	61	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	129	286	0	74	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	78	45	70	201	58	12
Future Vol, veh/h	78	45	70	201	58	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	47	74	212	61	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	286	0	-	0	391 180
Stage 1	-	-	-	-	180 -
Stage 2	-	-	-	-	211 -
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	1276	-	-	-	613 863
Stage 1	-	-	-	-	851 -
Stage 2	-	-	-	-	824 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1276	-	-	-	573 863
Mov Cap-2 Maneuver	-	-	-	-	573 -
Stage 1	-	-	-	-	795 -
Stage 2	-	-	-	-	824 -

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1276	-	-	-	608
HCM Lane V/C Ratio	0.064	-	-	-	0.121
HCM Control Delay (s)	8	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.975			0.945				0.965
Flt Protected	0.950			0.950				0.974				0.982
Satd. Flow (prot)	1676	1827	0	1676	1816	0	0	1715	0	0	1765	0
Flt Permitted	0.950			0.950				0.974				0.982
Satd. Flow (perm)	1676	1827	0	1676	1816	0	0	1715	0	0	1765	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	8	87	12	24	146	29	63	8	48	77	75	54
Future Volume (vph)	8	87	12	24	146	29	63	8	48	77	75	54
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	8	92	13	25	154	31	66	8	51	81	79	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	105	0	25	185	0	0	125	0	0	217	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	8	87	12	24	146	29	63	8	48	77	75	54
Future Vol, veh/h	8	87	12	24	146	29	63	8	48	77	75	54
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	92	13	25	154	31	66	8	51	81	79	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	185	0	0	105	0	0	403	350	99	364	341	170
Stage 1	-	-	-	-	-	-	115	115	-	220	220	-
Stage 2	-	-	-	-	-	-	288	235	-	144	121	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1390	-	-	1486	-	-	558	574	957	592	581	874
Stage 1	-	-	-	-	-	-	890	800	-	782	721	-
Stage 2	-	-	-	-	-	-	720	710	-	859	796	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1390	-	-	1486	-	-	458	561	957	545	568	874
Mov Cap-2 Maneuver	-	-	-	-	-	-	458	561	-	545	568	-
Stage 1	-	-	-	-	-	-	885	795	-	777	709	-
Stage 2	-	-	-	-	-	-	588	698	-	800	791	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.9			12.8			14		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	589	1390	-	-	1486	-	-	615
HCM Lane V/C Ratio	0.213	0.006	-	-	0.017	-	-	0.353
HCM Control Delay (s)	12.8	7.6	-	-	7.5	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	1.6

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.996				0.929	
Flt Protected	0.954			0.998		
Satd. Flow (prot)	1770	0	0	1859	1730	0
Flt Permitted	0.954			0.998		
Satd. Flow (perm)	1770	0	0	1859	1730	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1911			1041	1937	
Travel Time (s)	43.4			23.7	44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	29	1	1	28	33	37
Future Volume (vph)	29	1	1	28	33	37
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	31	1	1	29	35	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	0	30	74	0
Intersection Summary						

HCM 6th AWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	29	1	1	28	33	37
Future Vol, veh/h	29	1	1	28	33	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	1	1	29	35	39
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.2	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	3%	97%	0%
Vol Thru, %	97%	0%	47%
Vol Right, %	0%	3%	53%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	29	30	70
LT Vol	1	29	0
Through Vol	28	0	33
RT Vol	0	1	37
Lane Flow Rate	31	32	74
Geometry Grp	1	1	1
Degree of Util (X)	0.034	0.038	0.076
Departure Headway (Hd)	4.051	4.286	3.695
Convergence, Y/N	Yes	Yes	Yes
Cap	883	834	969
Service Time	2.08	2.321	1.72
HCM Lane V/C Ratio	0.035	0.038	0.076
HCM Control Delay	7.2	7.5	7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0.2

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.935			0.973			0.993			0.990	
Flt Protected		0.996			0.977			0.991			0.998	
Satd. Flow (prot)	0	1735	0	0	1771	0	0	1833	0	0	1840	0
Flt Permitted		0.996			0.977			0.991			0.998	
Satd. Flow (perm)	0	1735	0	0	1771	0	0	1833	0	0	1840	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	24	26	29	21	12	33	132	9	5	100	9
Future Volume (vph)	4	24	26	29	21	12	33	132	9	5	100	9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	4	25	27	31	22	13	35	139	9	5	105	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	66	0	0	183	0	0	119	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	24	26	29	21	12	33	132	9	5	100	9
Future Vol, veh/h	4	24	26	29	21	12	33	132	9	5	100	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	25	27	31	22	13	35	139	9	5	105	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	351	338	110	360	338	144	114	0	0	148	0	0
Stage 1	120	120	-	214	214	-	-	-	-	-	-	-
Stage 2	231	218	-	146	124	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	604	583	943	596	583	903	1475	-	-	1434	-	-
Stage 1	884	796	-	788	725	-	-	-	-	-	-	-
Stage 2	772	723	-	857	793	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	565	566	943	547	566	903	1475	-	-	1434	-	-
Mov Cap-2 Maneuver	565	566	-	547	566	-	-	-	-	-	-	-
Stage 1	861	793	-	768	706	-	-	-	-	-	-	-
Stage 2	718	704	-	802	790	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.6		11.7		1.4		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1475	-	-	701	600	1434	-
HCM Lane V/C Ratio	0.024	-	-	0.081	0.109	0.004	-
HCM Control Delay (s)	7.5	0	-	10.6	11.7	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.918		0.978			
Flt Protected	0.981					0.988
Satd. Flow (prot)	1678	0	1822	0	0	1840
Flt Permitted	0.981					0.988
Satd. Flow (perm)	1678	0	1822	0	0	1840
Link Speed (mph)	30		30			30
Link Distance (ft)	1911		1029			781
Travel Time (s)	43.4		23.4			17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022






Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	32	50	145	28	32	104
Future Volume (vph)	32	50	145	28	32	104
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	34	53	153	29	34	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	87	0	182	0	0	143
Intersection Summary						

HCM 6th AWSC
3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	50	145	28	32	104
Future Vol, veh/h	32	50	145	28	32	104
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	53	153	29	34	109
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.9	8.3	8.3
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	39%	24%
Vol Thru, %	84%	0%	76%
Vol Right, %	16%	61%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	173	82	136
LT Vol	0	32	32
Through Vol	145	0	104
RT Vol	28	50	0
Lane Flow Rate	182	86	143
Geometry Grp	1	1	1
Degree of Util (X)	0.207	0.104	0.17
Departure Headway (Hd)	4.098	4.357	4.273
Convergence, Y/N	Yes	Yes	Yes
Cap	861	828	826
Service Time	2.191	2.357	2.368
HCM Lane V/C Ratio	0.211	0.104	0.173
HCM Control Delay	8.3	7.9	8.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0.3	0.6

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.956		0.980	
Flt Protected		0.996			0.959	
Satd. Flow (prot)	0	1855	1781	0	1751	0
Flt Permitted		0.996			0.959	
Satd. Flow (perm)	0	1855	1781	0	1751	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	5	58	84	41	45	8
Future Volume (vph)	5	58	84	41	45	8
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	5	61	88	43	47	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	66	131	0	55	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	5	58	84	41	45	8
Future Vol, veh/h	5	58	84	41	45	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	61	88	43	47	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	131	0	0	181	110
Stage 1	-	-	-	110	-
Stage 2	-	-	-	71	-
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	1454	-	-	808	943
Stage 1	-	-	-	915	-
Stage 2	-	-	-	952	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1454	-	-	805	943
Mov Cap-2 Maneuver	-	-	-	805	-
Stage 1	-	-	-	911	-
Stage 2	-	-	-	952	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1454	-	-	-	823
HCM Lane V/C Ratio	0.004	-	-	-	0.068
HCM Control Delay (s)	7.5	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991			0.964			0.910				0.986
Flt Protected	0.950			0.950				0.991				0.969
Satd. Flow (prot)	1676	1846	0	1676	1796	0	0	1680	0	0	1780	0
Flt Permitted	0.950			0.950				0.991				0.969
Satd. Flow (perm)	1676	1846	0	1676	1796	0	0	1680	0	0	1780	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	5	108	7	57	119	37	16	12	58	30	12	5
Future Volume (vph)	5	108	7	57	119	37	16	12	58	30	12	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	114	7	60	125	39	17	13	61	32	13	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	121	0	60	164	0	0	91	0	0	50	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵			↕			↕	
Traffic Vol, veh/h	5	108	7	57	119	37	16	12	58	30	12	5
Future Vol, veh/h	5	108	7	57	119	37	16	12	58	30	12	5
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	114	7	60	125	39	17	13	61	32	13	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	121	0	0	402	412	118	430	396	145
Stage 1	-	-	-	-	-	-	128	128	-	265	265	-
Stage 2	-	-	-	-	-	-	274	284	-	165	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1414	-	-	1467	-	-	559	530	934	535	541	902
Stage 1	-	-	-	-	-	-	876	790	-	740	689	-
Stage 2	-	-	-	-	-	-	732	676	-	837	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1414	-	-	1467	-	-	527	506	934	474	517	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	527	506	-	474	517	-
Stage 1	-	-	-	-	-	-	872	787	-	737	661	-
Stage 2	-	-	-	-	-	-	685	648	-	767	785	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			2			10.5			12.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	740	1414	-	-	1467	-	-	511
HCM Lane V/C Ratio	0.122	0.004	-	-	0.041	-	-	0.097
HCM Control Delay (s)	10.5	7.6	-	-	7.6	-	-	12.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.3

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.992				0.929	
Flt Protected	0.955			0.991		
Satd. Flow (prot)	1765	0	0	1846	1730	0
Flt Permitted	0.955			0.991		
Satd. Flow (perm)	1765	0	0	1846	1730	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1911			1041	1937	
Travel Time (s)	43.4			23.7	44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	15	1	3	13	20	22
Future Volume (vph)	15	1	3	13	20	22
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	16	1	3	14	21	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	17	44	0
Intersection Summary						

HCM 6th AWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	15	1	3	13	20	22
Future Vol, veh/h	15	1	3	13	20	22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	1	3	14	21	23
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	7.1	6.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	19%	94%	0%
Vol Thru, %	81%	0%	48%
Vol Right, %	0%	6%	52%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	16	16	42
LT Vol	3	15	0
Through Vol	13	0	20
RT Vol	0	1	22
Lane Flow Rate	17	17	44
Geometry Grp	1	1	1
Degree of Util (X)	0.019	0.02	0.045
Departure Headway (Hd)	4.034	4.189	3.662
Convergence, Y/N	Yes	Yes	Yes
Cap	889	856	980
Service Time	2.049	2.209	1.675
HCM Lane V/C Ratio	0.019	0.02	0.045
HCM Control Delay	7.1	7.3	6.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0.1

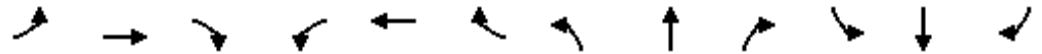
Appendix H

Future Year (2035) With Project Conditions
Intersection Analysis Worksheets

Lanes and Geometrics

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932						0.865				
Flt Protected					0.950							
Satd. Flow (prot)	0	1736	0	0	1770	0	0	1611	0	0	1863	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1736	0	0	1770	0	0	1611	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1087			1337			1527			801	
Travel Time (s)		24.7			30.4			34.7			18.2	

Intersection Summary

Area Type: Other

Volume

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	1	1	10	0	0	0	0	20	0	0	0
Future Volume (vph)	0	1	1	10	0	0	0	0	20	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1	1	11	0	0	0	0	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	11	0	0	21	0	0	0	0
Intersection Summary												

HCM 6th TWSC
1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	1	10	0	0	0	0	20	0	0	0
Future Vol, veh/h	0	1	1	10	0	0	0	0	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	1	11	0	0	0	0	21	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	2	0	0	24	24	2	34	24	0
Stage 1	-	-	-	-	-	-	2	2	-	22	22	-
Stage 2	-	-	-	-	-	-	22	22	-	12	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1620	-	-	987	869	1082	973	869	-
Stage 1	-	-	-	-	-	-	1021	894	-	996	877	-
Stage 2	-	-	-	-	-	-	996	877	-	1009	894	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1620	-	-	-	863	1082	949	863	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	863	-	949	863	-
Stage 1	-	-	-	-	-	-	1021	894	-	996	871	-
Stage 2	-	-	-	-	-	-	989	871	-	989	894	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.2		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1620	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.006	-	-	-
HCM Control Delay (s)	-	0	-	-	7.2	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.951			0.977			0.948			0.994	
Flt Protected		0.994			0.976			0.998			0.995	
Satd. Flow (prot)	0	1761	0	0	1776	0	0	1762	0	0	1842	0
Flt Permitted		0.994			0.976			0.998			0.995	
Satd. Flow (perm)	0	1761	0	0	1776	0	0	1762	0	0	1842	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	51	36	47	31	16	7	113	76	15	140	7
Future Volume (vph)	12	51	36	47	31	16	7	113	76	15	140	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	54	38	49	33	17	7	119	80	16	147	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	99	0	0	206	0	0	170	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	51	36	47	31	16	7	113	76	15	140	7
Future Vol, veh/h	12	51	36	47	31	16	7	113	76	15	140	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	54	38	49	33	17	7	119	80	16	147	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	381	396	151	402	359	159	154	0	0	199	0	0
Stage 1	183	183	-	173	173	-	-	-	-	-	-	-
Stage 2	198	213	-	229	186	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	577	541	895	559	568	886	1426	-	-	1373	-	-
Stage 1	819	748	-	829	756	-	-	-	-	-	-	-
Stage 2	804	726	-	774	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	533	531	895	487	557	886	1426	-	-	1373	-	-
Mov Cap-2 Maneuver	533	531	-	487	557	-	-	-	-	-	-	-
Stage 1	814	738	-	824	751	-	-	-	-	-	-	-
Stage 2	750	722	-	678	736	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.9		12.9		0.3		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1426	-	-	623	552	1373	-
HCM Lane V/C Ratio	0.005	-	-	0.167	0.179	0.011	-
HCM Control Delay (s)	7.5	0	-	11.9	12.9	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.6	0.6	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.942			0.982				0.999
Flt Protected		0.998			0.976							0.984
Satd. Flow (prot)	0	1859	0	0	1713	0	0	1829	0	0	1831	0
Flt Permitted		0.998			0.976							0.984
Satd. Flow (perm)	0	1859	0	0	1713	0	0	1829	0	0	1831	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		706			1911			1029				781
Travel Time (s)		16.0			43.4			23.4				17.8

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	1	26	0	42	8	37	0	139	21	84	168	1
Future Volume (vph)	1	26	0	42	8	37	0	139	21	84	168	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	27	0	44	8	39	0	146	22	88	177	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	91	0	0	168	0	0	266	0
Intersection Summary												

HCM 6th TWSC
 3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	10.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	26	0	42	8	37	0	139	21	84	168	1
Future Vol, veh/h	1	26	0	42	8	37	0	139	21	84	168	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	27	0	44	8	39	0	146	22	88	177	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	27	0	0	234	164	27	229	145	28
Stage 1	-	-	-	-	-	-	29	29	-	116	116	-
Stage 2	-	-	-	-	-	-	205	135	-	113	29	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1587	-	-	721	729	1048	726	746	1047
Stage 1	-	-	-	-	-	-	988	871	-	889	800	-
Stage 2	-	-	-	-	-	-	797	785	-	892	871	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1560	-	-	1587	-	-	572	707	1048	584	724	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	572	707	-	584	724	-
Stage 1	-	-	-	-	-	-	987	870	-	888	777	-
Stage 2	-	-	-	-	-	-	597	762	-	726	870	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			3.5			11.3			13.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	739	1560	-	-	1587	-	-	671
HCM Lane V/C Ratio	0.228	0.001	-	-	0.028	-	-	0.397
HCM Control Delay (s)	11.3	7.3	0	-	7.3	0	-	13.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0.1	-	-	1.9

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.904		0.976	
Flt Protected		0.976			0.960	
Satd. Flow (prot)	0	1818	1684	0	1745	0
Flt Permitted		0.976			0.960	
Satd. Flow (perm)	0	1818	1684	0	1745	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	78	79	81	201	58	12
Future Volume (vph)	78	79	81	201	58	12
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	82	83	85	212	61	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	165	297	0	74	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	78	79	81	201	58	12
Future Vol, veh/h	78	79	81	201	58	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	83	85	212	61	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	297	0	-	0	438
Stage 1	-	-	-	-	191
Stage 2	-	-	-	-	247
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	1264	-	-	-	576
Stage 1	-	-	-	-	841
Stage 2	-	-	-	-	794
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1264	-	-	-	537
Mov Cap-2 Maneuver	-	-	-	-	537
Stage 1	-	-	-	-	784
Stage 2	-	-	-	-	794

Approach	EB	WB	SB
HCM Control Delay, s	4	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1264	-	-	-	573
HCM Lane V/C Ratio	0.065	-	-	-	0.129
HCM Control Delay (s)	8	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.976			0.945				0.965
Flt Protected	0.950			0.950				0.974				0.982
Satd. Flow (prot)	1676	1837	0	1676	1818	0	0	1715	0	0	1765	0
Flt Permitted	0.950			0.950				0.974				0.982
Satd. Flow (perm)	1676	1837	0	1676	1818	0	0	1715	0	0	1765	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	8	121	12	24	157	29	63	8	48	77	75	54
Future Volume (vph)	8	121	12	24	157	29	63	8	48	77	75	54
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	8	127	13	25	165	31	66	8	51	81	79	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	140	0	25	196	0	0	125	0	0	217	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	8	121	12	24	157	29	63	8	48	77	75	54
Future Vol, veh/h	8	121	12	24	157	29	63	8	48	77	75	54
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	127	13	25	165	31	66	8	51	81	79	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	196	0	0	140	0	0	449	396	134	410	387	181
Stage 1	-	-	-	-	-	-	150	150	-	231	231	-
Stage 2	-	-	-	-	-	-	299	246	-	179	156	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1377	-	-	1443	-	-	520	541	915	552	547	862
Stage 1	-	-	-	-	-	-	853	773	-	772	713	-
Stage 2	-	-	-	-	-	-	710	703	-	823	769	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1377	-	-	1443	-	-	423	529	915	506	534	862
Mov Cap-2 Maneuver	-	-	-	-	-	-	423	529	-	506	534	-
Stage 1	-	-	-	-	-	-	848	768	-	767	701	-
Stage 2	-	-	-	-	-	-	578	691	-	765	764	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.9			13.5			14.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	550	1377	-	-	1443	-	-	580
HCM Lane V/C Ratio	0.228	0.006	-	-	0.018	-	-	0.374
HCM Control Delay (s)	13.5	7.6	-	-	7.5	-	-	14.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0.1	-	-	1.7

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.944			0.926			0.956	
Flt Protected		0.992			0.996			0.999			0.981	
Satd. Flow (prot)	0	1846	0	0	1751	0	0	1723	0	0	1747	0
Flt Permitted		0.992			0.996			0.999			0.981	
Satd. Flow (perm)	0	1846	0	0	1751	0	0	1723	0	0	1747	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1911			727			1041			1937	
Travel Time (s)		43.4			16.5			23.7			44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	29	145	1	9	59	48	1	28	34	45	33	37
Future Volume (vph)	29	145	1	9	59	48	1	28	34	45	33	37
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	153	1	9	62	51	1	29	36	47	35	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	185	0	0	122	0	0	66	0	0	121	0
Intersection Summary												

HCM 6th TWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	145	1	9	59	48	1	28	34	45	33	37
Future Vol, veh/h	29	145	1	9	59	48	1	28	34	45	33	37
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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	153	1	9	62	51	1	29	36	47	35	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	154	0	0	359	347	154	354	322	88
Stage 1	-	-	-	-	-	-	216	216	-	106	106	-
Stage 2	-	-	-	-	-	-	143	131	-	248	216	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1476	-	-	1426	-	-	596	576	892	601	595	970
Stage 1	-	-	-	-	-	-	786	724	-	900	807	-
Stage 2	-	-	-	-	-	-	860	788	-	756	724	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1476	-	-	1426	-	-	533	559	892	541	577	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	533	559	-	541	577	-
Stage 1	-	-	-	-	-	-	768	707	-	879	801	-
Stage 2	-	-	-	-	-	-	784	782	-	679	707	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.6			10.7			11.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	699	1476	-	-	1426	-	-	644
HCM Lane V/C Ratio	0.095	0.021	-	-	0.007	-	-	0.188
HCM Control Delay (s)	10.7	7.5	0	-	7.5	0	-	11.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.7

Lanes and Geometrics

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	0		0	0		0	0		0	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt	0.865												
Flt Protected	0.950												
Satd. Flow (prot)	0	1863	0	0	1770	0	0	1611	0	0	1863	0	
Flt Permitted	0.950												
Satd. Flow (perm)	0	1863	0	0	1770	0	0	1611	0	0	1863	0	
Link Speed (mph)	30				30				30				
Link Distance (ft)	1087				1337				1527				801
Travel Time (s)	24.7				30.4				34.7				18.2

Intersection Summary

Area Type: Other

Volume

1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	0	0	26	0	0	0	0	15	0	0	0
Future Volume (vph)	0	0	0	26	0	0	0	0	15	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	27	0	0	0	0	16	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	27	0	0	16	0	0	0	0
Intersection Summary												

HCM 6th TWSC
 1: FREMONTIA ROAD & LUNA ROAD/LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	26	0	0	0	0	15	0	0	0
Future Vol, veh/h	0	0	0	26	0	0	0	0	15	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	27	0	0	0	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	1	0	0	55	55	1	63	55	0
Stage 1	-	-	-	-	-	-	1	1	-	54	54	-
Stage 2	-	-	-	-	-	-	54	54	-	9	1	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1622	-	-	943	836	1084	932	836	-
Stage 1	-	-	-	-	-	-	1022	895	-	958	850	-
Stage 2	-	-	-	-	-	-	958	850	-	1012	895	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1622	-	-	-	822	1084	907	822	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	822	-	907	822	-
Stage 1	-	-	-	-	-	-	1022	895	-	958	836	-
Stage 2	-	-	-	-	-	-	942	836	-	997	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.017	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0.1	-	-	-

Lanes and Geometrics

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.946			0.983			0.985			0.990	
Flt Protected		0.997			0.977			0.991			0.998	
Satd. Flow (prot)	0	1757	0	0	1789	0	0	1818	0	0	1840	0
Flt Permitted		0.997			0.977			0.991			0.998	
Satd. Flow (perm)	0	1757	0	0	1789	0	0	1818	0	0	1840	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1337			1506			1880			820	
Travel Time (s)		30.4			34.2			42.7			18.6	

Intersection Summary

Area Type: Other

Volume

2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	35	26	48	40	12	33	132	20	5	100	9
Future Volume (vph)	4	35	26	48	40	12	33	132	20	5	100	9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	4	37	27	51	42	13	35	139	21	5	105	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	106	0	0	195	0	0	119	0
Intersection Summary												

HCM 6th TWSC
 2: MESA VIEW DRIVE & LUNA ROAD /LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	35	26	48	40	12	33	132	20	5	100	9
Future Vol, veh/h	4	35	26	48	40	12	33	132	20	5	100	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	37	27	51	42	13	35	139	21	5	105	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	367	350	110	372	344	150	114	0	0	160	0	0
Stage 1	120	120	-	220	220	-	-	-	-	-	-	-
Stage 2	247	230	-	152	124	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	589	574	943	585	579	896	1475	-	-	1419	-	-
Stage 1	884	796	-	782	721	-	-	-	-	-	-	-
Stage 2	757	714	-	850	793	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	535	557	943	527	562	896	1475	-	-	1419	-	-
Mov Cap-2 Maneuver	535	557	-	527	562	-	-	-	-	-	-	-
Stage 1	861	793	-	762	702	-	-	-	-	-	-	-
Stage 2	683	695	-	784	790	-	-	-	-	-	-	-

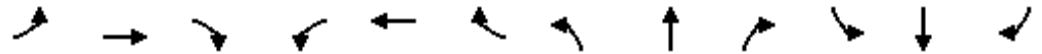
Approach	EB		WB		NB		SB	
HCM Control Delay, s	11		12.8		1.3		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1475	-	-	664	569	1419	-
HCM Lane V/C Ratio	0.024	-	-	0.103	0.185	0.004	-
HCM Control Delay (s)	7.5	0	-	11	12.8	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.7	0	-

Lanes and Geometrics

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.925			0.979			0.999	
Flt Protected					0.989						0.984	
Satd. Flow (prot)	0	1820	0	0	1704	0	0	1824	0	0	1831	0
Flt Permitted					0.989						0.984	
Satd. Flow (perm)	0	1820	0	0	1704	0	0	1824	0	0	1831	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			1911			1029			781	
Travel Time (s)		16.0			43.4			23.4			17.8	

Intersection Summary

Area Type: Other

Volume

3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	18	4	32	30	79	1	145	28	49	104	1
Future Volume (vph)	0	18	4	32	30	79	1	145	28	49	104	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	19	4	34	32	83	1	153	29	52	109	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	149	0	0	183	0	0	162	0
Intersection Summary												

HCM 6th TWSC
3: MESA VIEW DRIVE & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	8.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	18	4	32	30	79	1	145	28	49	104	1
Future Vol, veh/h	0	18	4	32	30	79	1	145	28	49	104	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	19	4	34	32	83	1	153	29	52	109	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	115	0	0	23	0	0	218	204	21	254	165	74
Stage 1	-	-	-	-	-	-	21	21	-	142	142	-
Stage 2	-	-	-	-	-	-	197	183	-	112	23	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1474	-	-	1592	-	-	738	692	1056	699	728	988
Stage 1	-	-	-	-	-	-	998	878	-	861	779	-
Stage 2	-	-	-	-	-	-	805	748	-	893	876	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1474	-	-	1592	-	-	639	676	1056	552	711	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	639	676	-	552	711	-
Stage 1	-	-	-	-	-	-	998	878	-	861	761	-
Stage 2	-	-	-	-	-	-	673	731	-	717	876	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.7			11.7			12.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	717	1474	-	-	1592	-	-	652
HCM Lane V/C Ratio	0.255	-	-	-	0.021	-	-	0.249
HCM Control Delay (s)	11.7	0	-	-	7.3	0	-	12.3
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	1

Lanes and Geometrics

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.966		0.980	
Flt Protected		0.997			0.959	
Satd. Flow (prot)	0	1857	1799	0	1751	0
Flt Permitted		0.997			0.959	
Satd. Flow (perm)	0	1857	1799	0	1751	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1506	583		743	
Travel Time (s)		34.2	13.3		16.9	

Intersection Summary

Area Type: Other

Volume

4: LUNA ROAD & VISTA VERDE STREET

01/25/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	5	80	122	41	45	8
Future Volume (vph)	5	80	122	41	45	8
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	5	84	128	43	47	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	89	171	0	55	0
Intersection Summary						

HCM 6th TWSC
4: LUNA ROAD & VISTA VERDE STREET

01/25/2022

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	5	80	122	41	45	8
Future Vol, veh/h	5	80	122	41	45	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	84	128	43	47	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	171	0	-	0	244 150
Stage 1	-	-	-	-	150 -
Stage 2	-	-	-	-	94 -
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	1406	-	-	-	744 896
Stage 1	-	-	-	-	878 -
Stage 2	-	-	-	-	930 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1406	-	-	-	741 896
Mov Cap-2 Maneuver	-	-	-	-	741 -
Stage 1	-	-	-	-	874 -
Stage 2	-	-	-	-	930 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1406	-	-	-	761
HCM Lane V/C Ratio	0.004	-	-	-	0.073
HCM Control Delay (s)	7.6	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lanes and Geometrics
 5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	60		0	80		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.971			0.910				0.986
Flt Protected	0.950			0.950				0.991				0.969
Satd. Flow (prot)	1676	1850	0	1676	1809	0	0	1680	0	0	1780	0
Flt Permitted	0.950			0.950				0.991				0.969
Satd. Flow (perm)	1676	1850	0	1676	1809	0	0	1680	0	0	1780	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		583			660			803				764
Travel Time (s)		13.3			15.0			18.3				17.4

Intersection Summary

Area Type: Other

Volume

5: BELLA PINE STREET & LUNA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	5	130	7	57	157	37	16	12	58	30	12	5
Future Volume (vph)	5	130	7	57	157	37	16	12	58	30	12	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	137	7	60	165	39	17	13	61	32	13	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	144	0	60	204	0	0	91	0	0	50	0
Intersection Summary												

HCM 6th TWSC
5: BELLA PINE STREET & LUNA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	5	130	7	57	157	37	16	12	58	30	12	5
Future Vol, veh/h	5	130	7	57	157	37	16	12	58	30	12	5
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	60	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	137	7	60	165	39	17	13	61	32	13	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	144	0	0	465	475	141	493	459	185
Stage 1	-	-	-	-	-	-	151	151	-	305	305	-
Stage 2	-	-	-	-	-	-	314	324	-	188	154	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1368	-	-	1438	-	-	508	488	907	486	499	857
Stage 1	-	-	-	-	-	-	851	772	-	705	662	-
Stage 2	-	-	-	-	-	-	697	650	-	814	770	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1368	-	-	1438	-	-	478	466	907	429	476	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	478	466	-	429	476	-
Stage 1	-	-	-	-	-	-	848	769	-	702	634	-
Stage 2	-	-	-	-	-	-	651	623	-	744	767	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.7			10.9			13.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	698	1368	-	-	1438	-	-	465
HCM Lane V/C Ratio	0.13	0.004	-	-	0.042	-	-	0.106
HCM Control Delay (s)	10.9	7.6	-	-	7.6	-	-	13.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.4

Lanes and Geometrics
 6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.976			0.909			0.963	
Flt Protected		0.994			0.993			0.997			0.977	
Satd. Flow (prot)	0	1850	0	0	1805	0	0	1688	0	0	1753	0
Flt Permitted		0.994			0.993			0.997			0.977	
Satd. Flow (perm)	0	1850	0	0	1805	0	0	1688	0	0	1753	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1911			727			1041			1937	
Travel Time (s)		43.4			16.5			23.7			44.0	

Intersection Summary

Area Type: Other

Volume

6: PENA ROAD & LA MESA ROAD

01/25/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	15	112	1	32	157	42	3	13	33	38	20	22
Future Volume (vph)	15	112	1	32	157	42	3	13	33	38	20	22
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	118	1	34	165	44	3	14	35	40	21	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	135	0	0	243	0	0	52	0	0	84	0
Intersection Summary												

HCM 6th TWSC
6: PENA ROAD & LA MESA ROAD

01/25/2022

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	112	1	32	157	42	3	13	33	38	20	22
Future Vol, veh/h	15	112	1	32	157	42	3	13	33	38	20	22
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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	118	1	34	165	44	3	14	35	40	21	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	209	0	0	119	0	0	428	428	119	430	406	187
Stage 1	-	-	-	-	-	-	151	151	-	255	255	-
Stage 2	-	-	-	-	-	-	277	277	-	175	151	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1362	-	-	1469	-	-	537	519	933	535	534	855
Stage 1	-	-	-	-	-	-	851	772	-	749	696	-
Stage 2	-	-	-	-	-	-	729	681	-	827	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1469	-	-	491	499	933	490	513	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	491	499	-	490	513	-
Stage 1	-	-	-	-	-	-	840	762	-	739	678	-
Stage 2	-	-	-	-	-	-	669	663	-	772	762	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	1	10.3	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	726	1362	-	-	1469	-	-	562
HCM Lane V/C Ratio	0.071	0.012	-	-	0.023	-	-	0.15
HCM Control Delay (s)	10.3	7.7	0	-	7.5	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.5

Appendix I

MUTCD Traffic Signal Warrant Analysis Worksheets

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - AM Peak Hour**

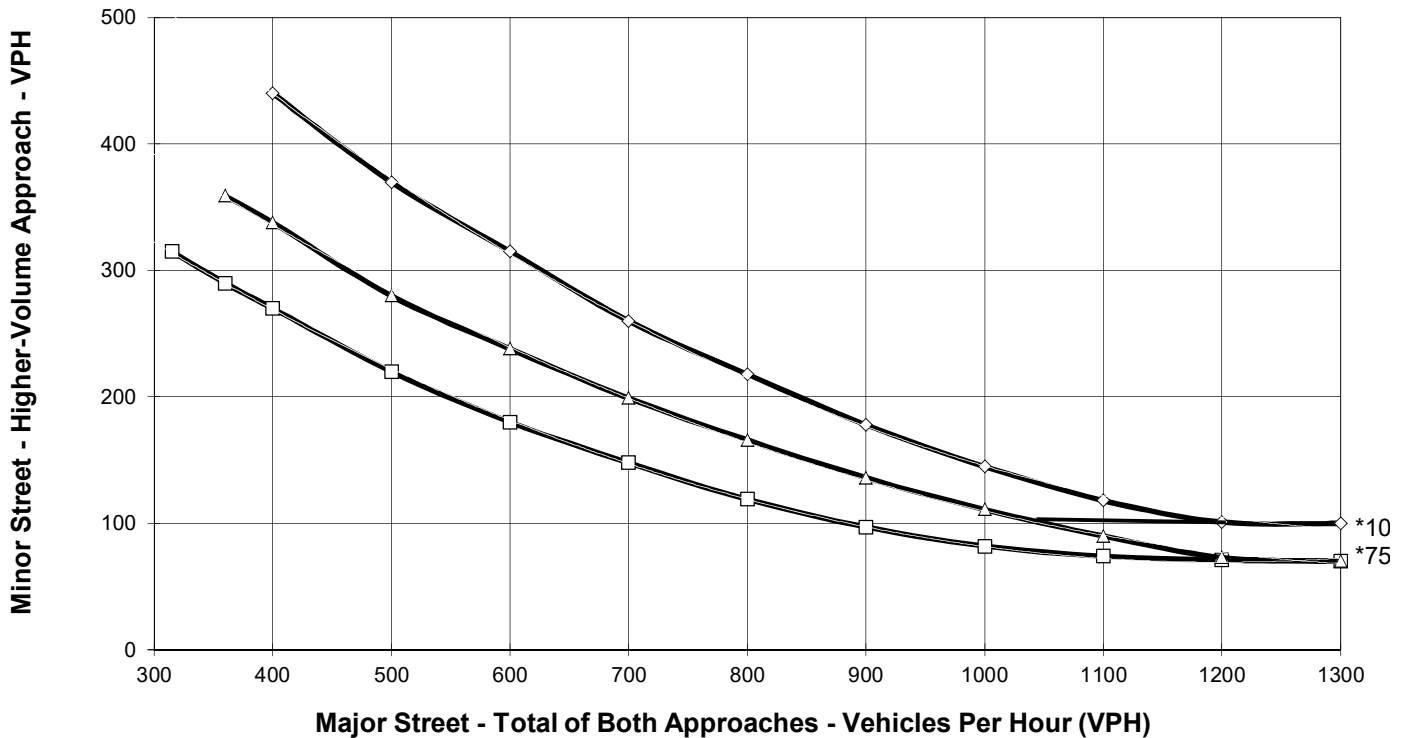
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **293**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **54**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - PM Peak Hour**

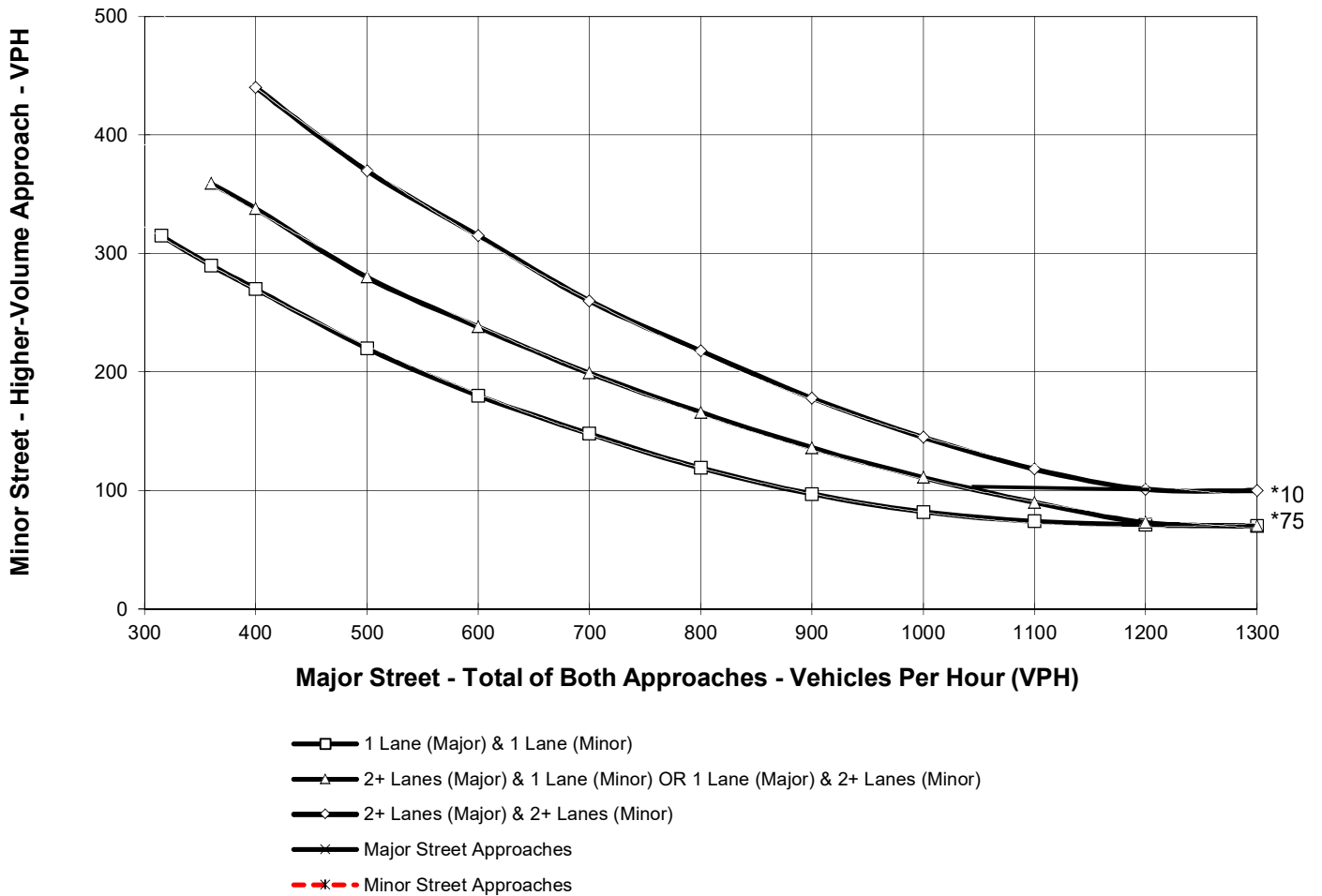
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **236**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **63**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - AM Peak Hour**

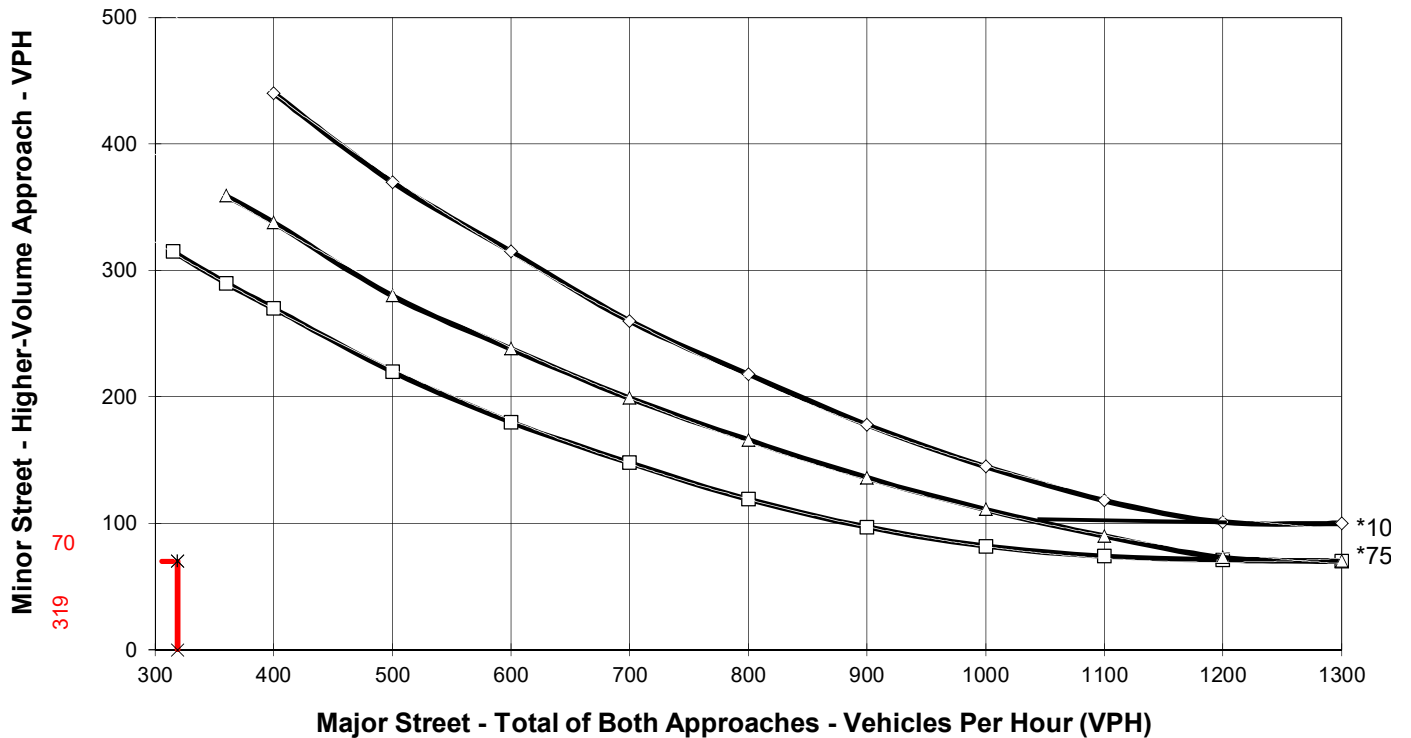
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **319**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **70**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - PM Peak Hour**

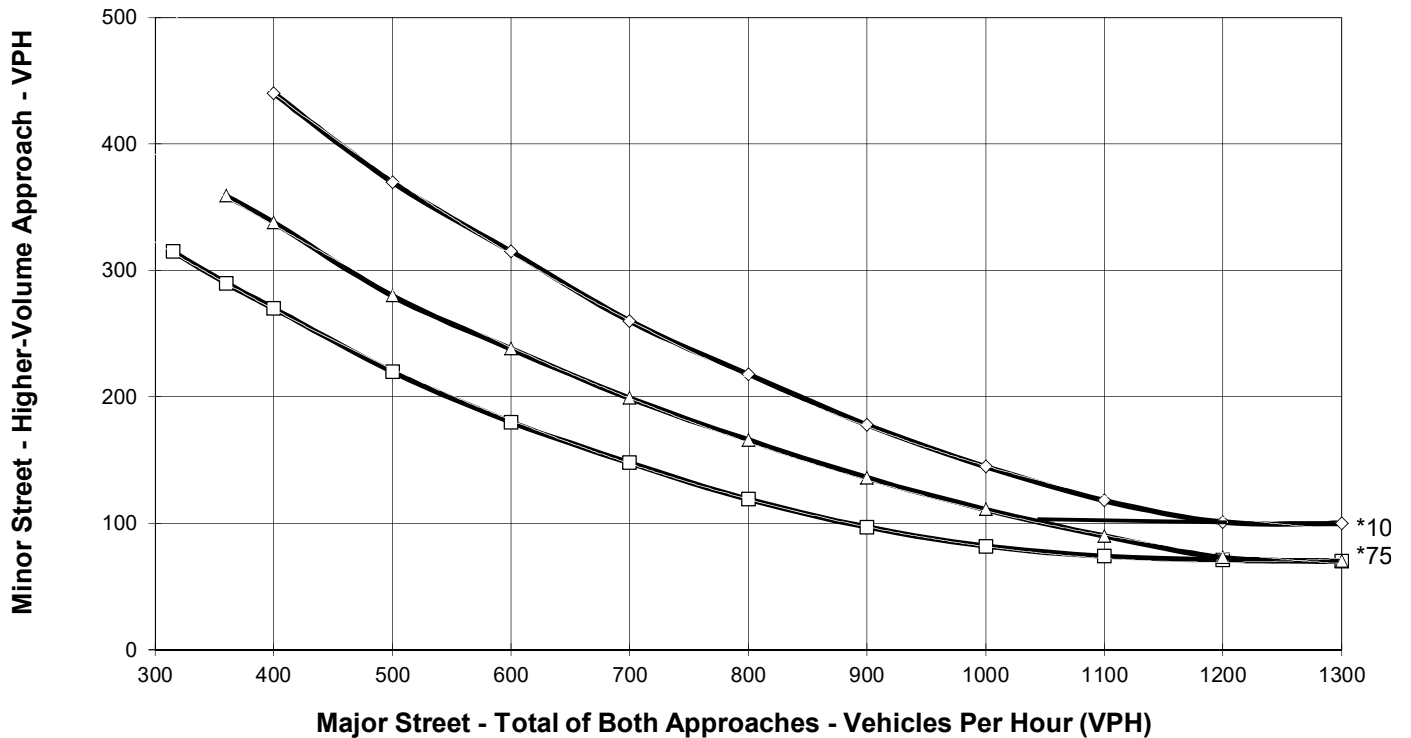
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **253**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **121**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Without Project Conditions - AM Peak**

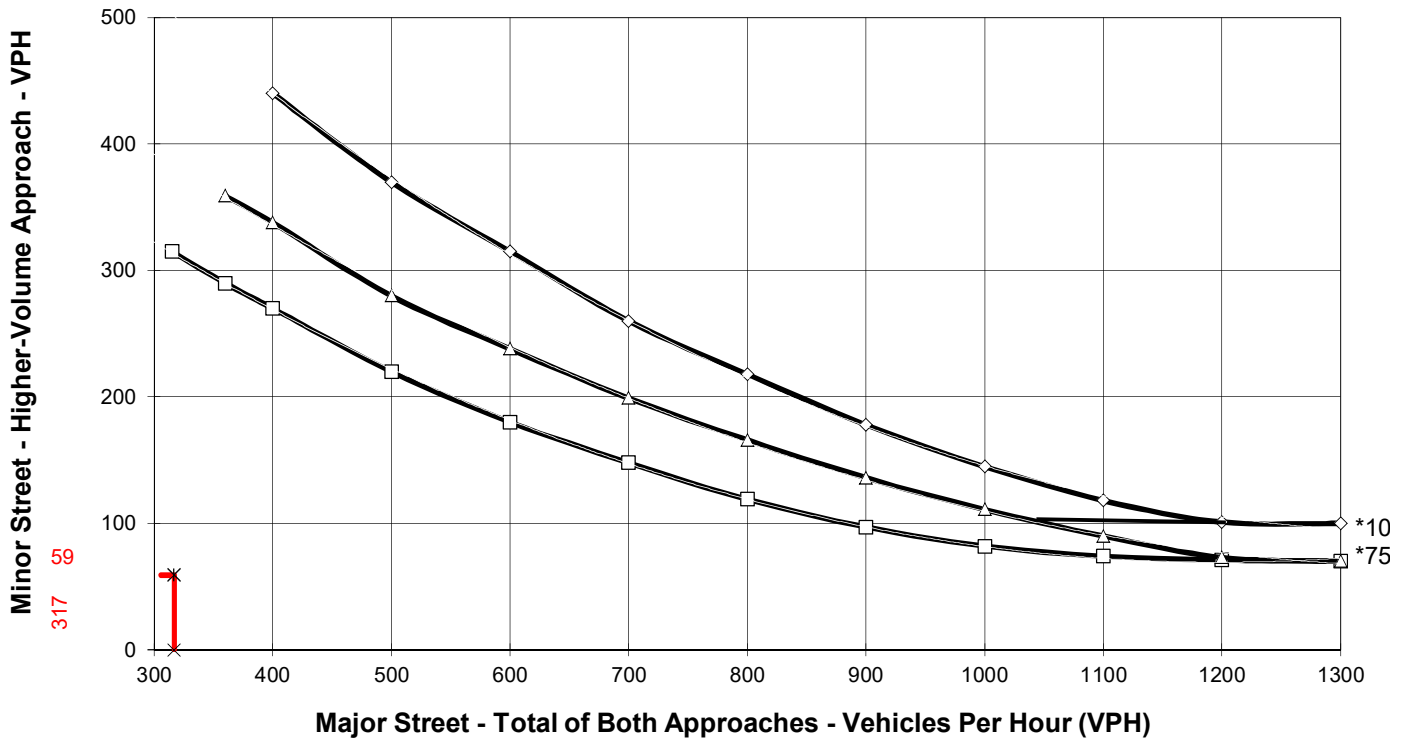
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **317**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **59**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Without Project Conditions - PM Peak**

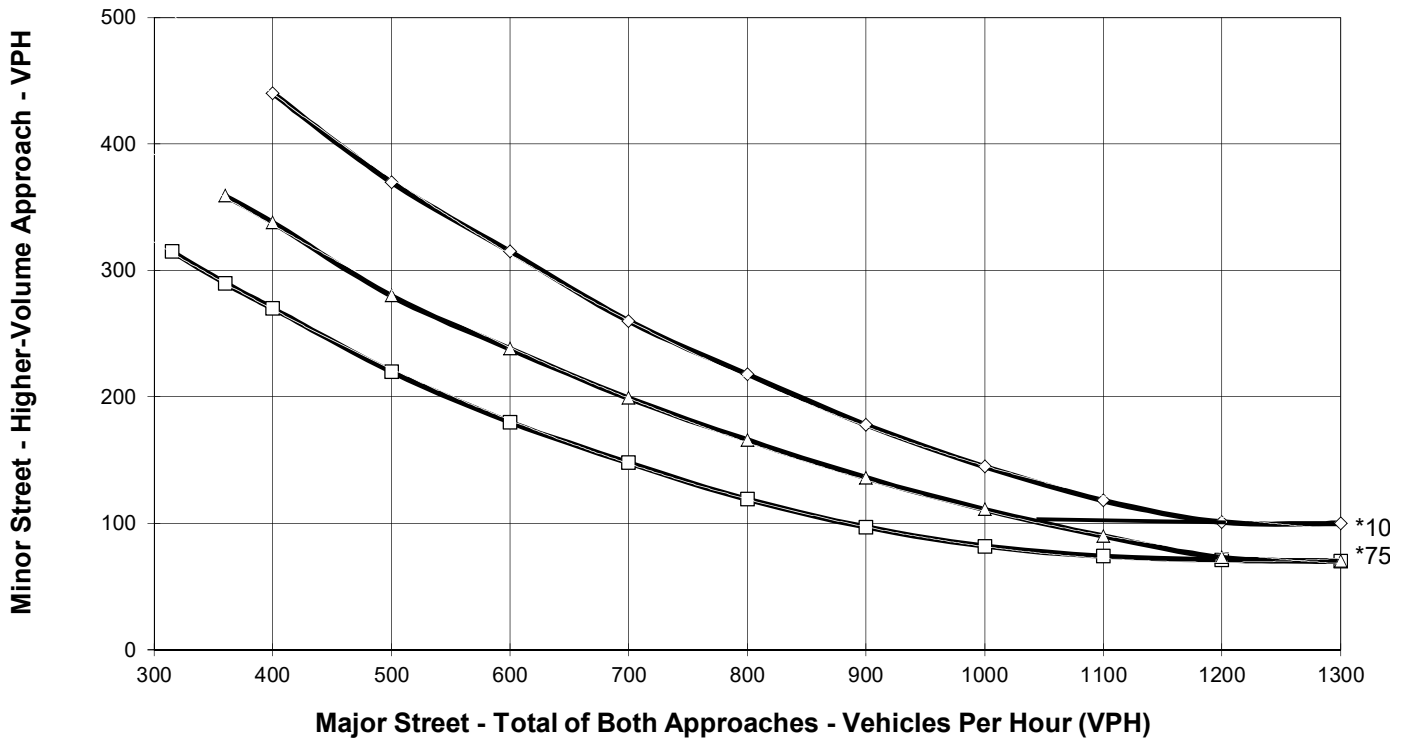
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **256**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **68**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - AM Peak Hour**

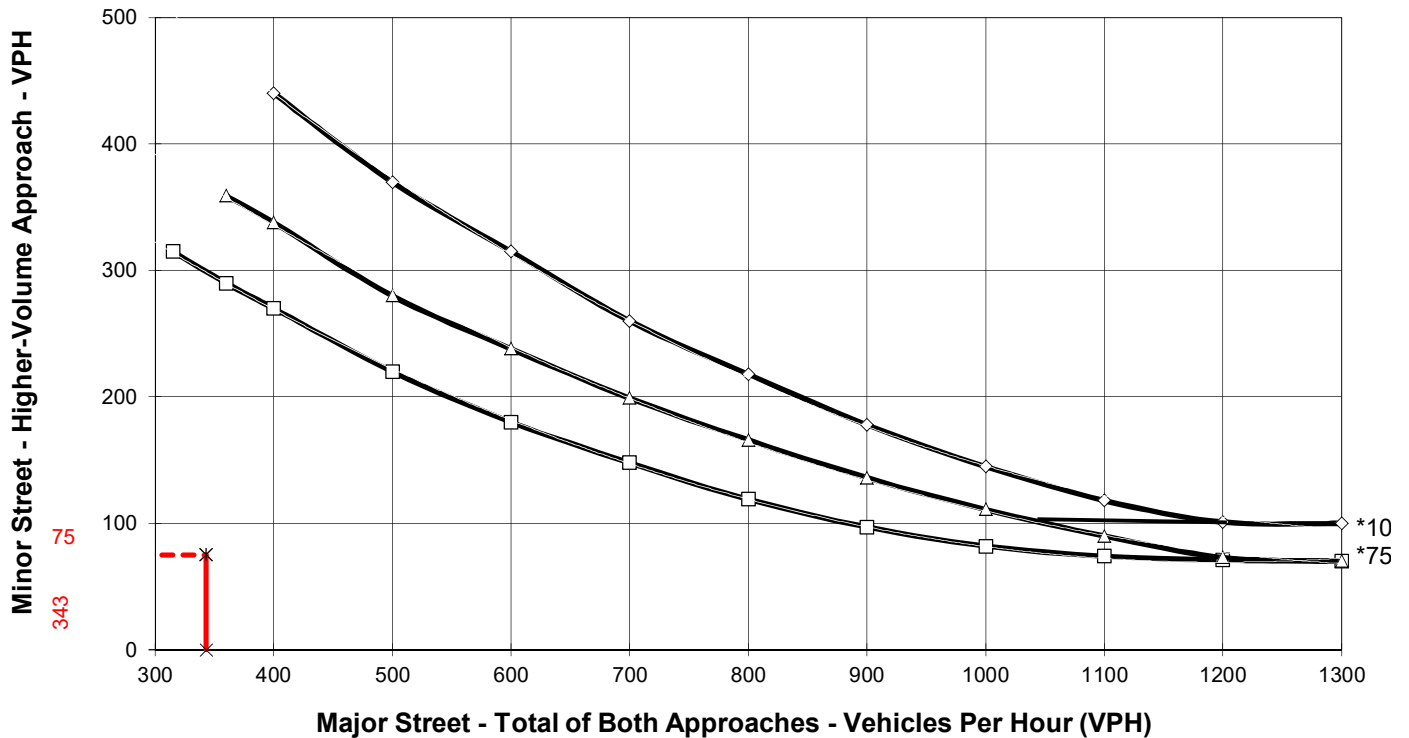
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **343**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **75**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - PM Peak Hour**

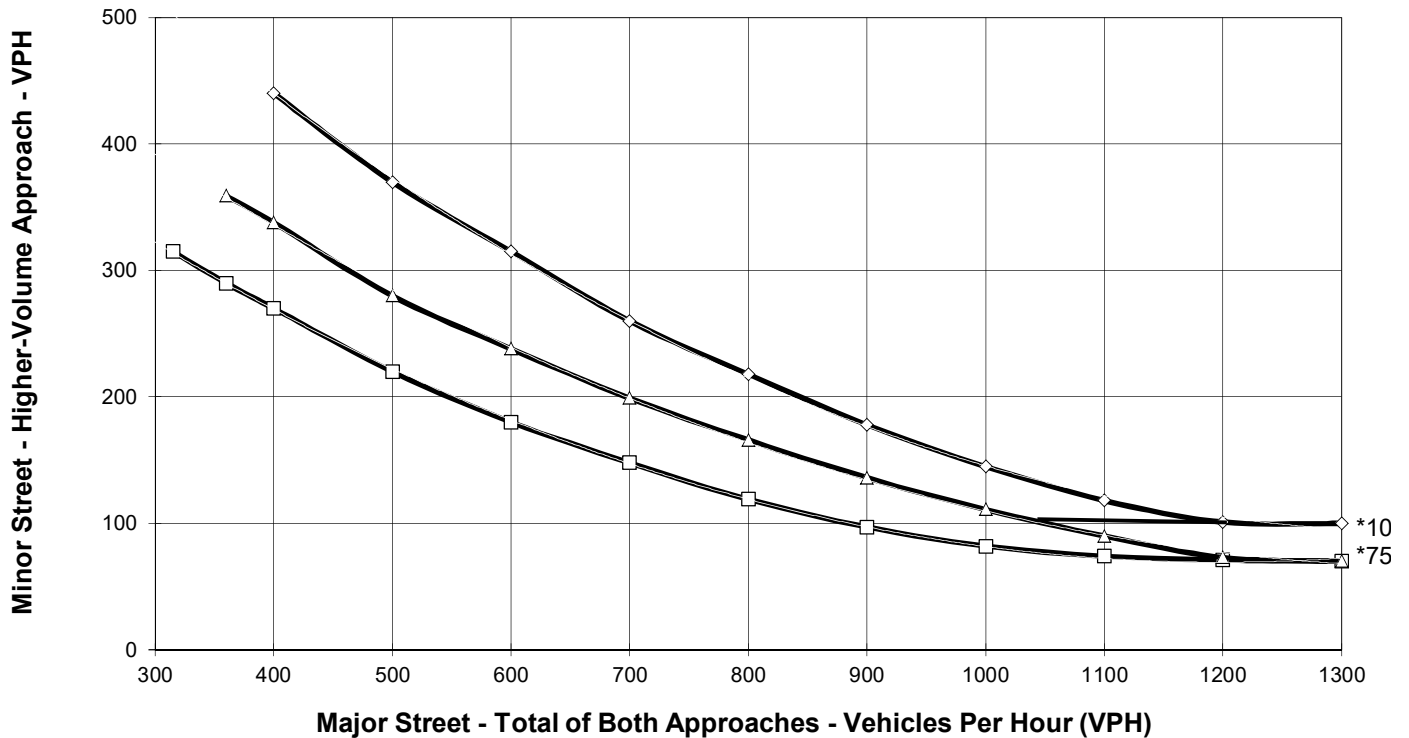
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **273**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **126**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- *- Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Future Year Without Project Conditions - AM Peak Hour**

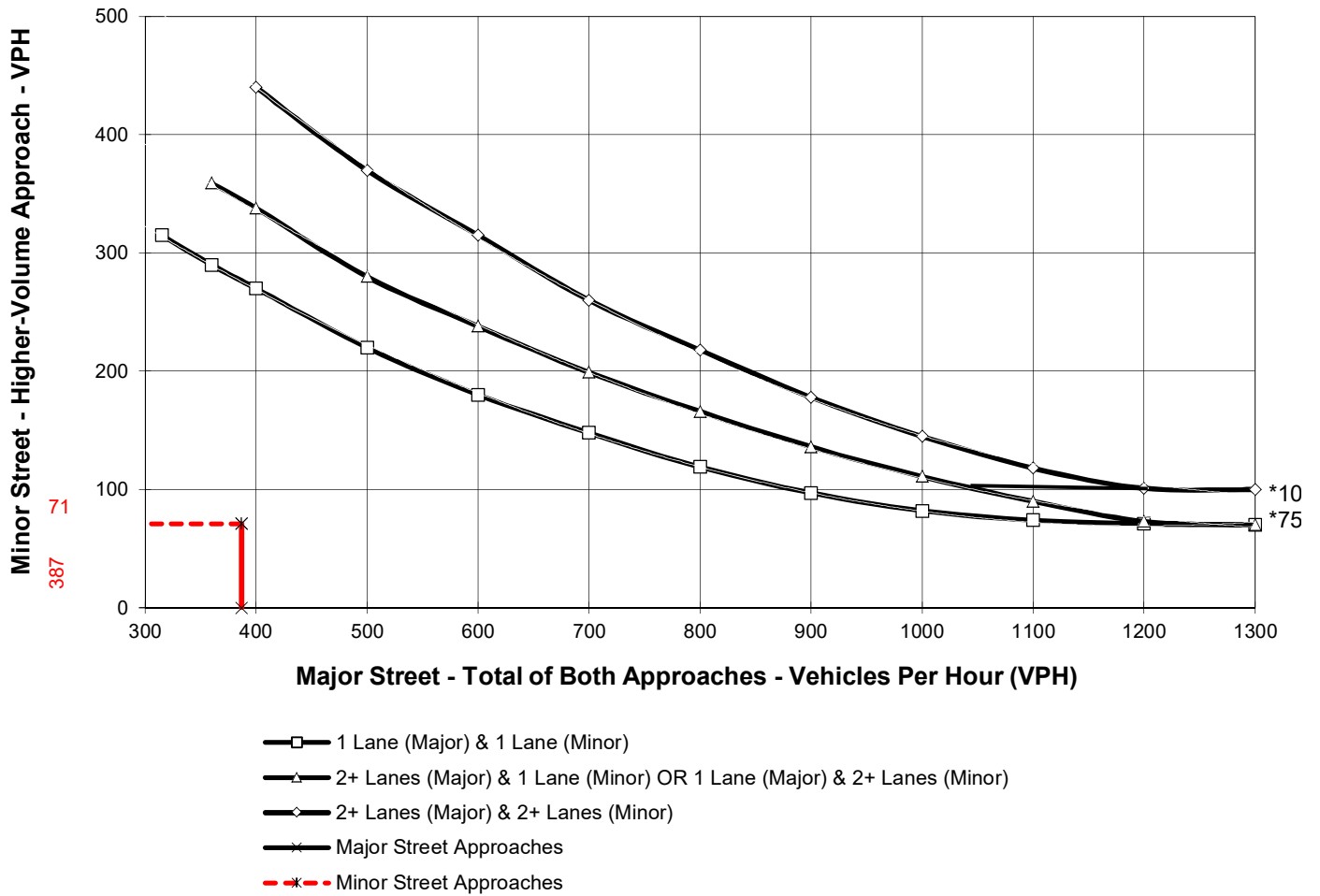
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **387**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **71**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Future Year Without Project Conditions - PM Peak Hour**

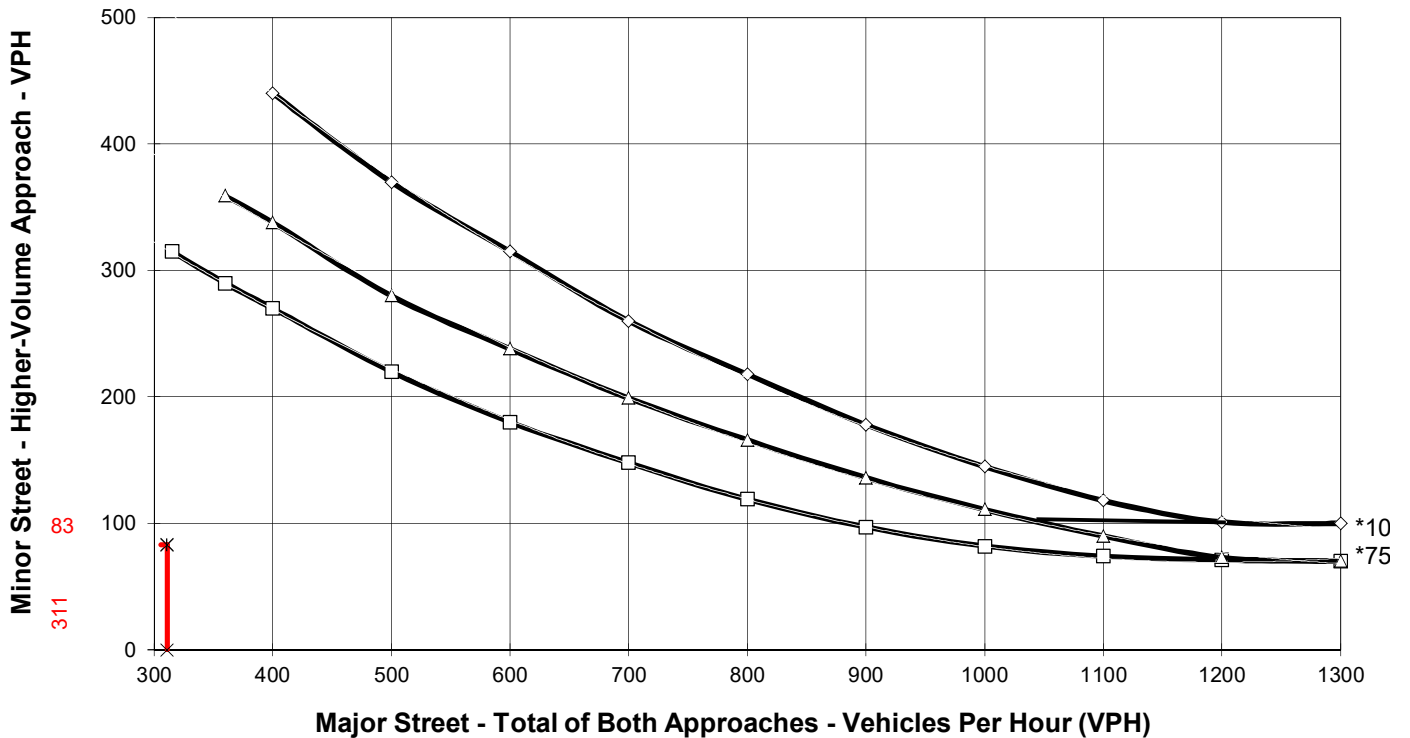
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **311**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **83**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Future Year With Project Conditions - AM Peak Hour**

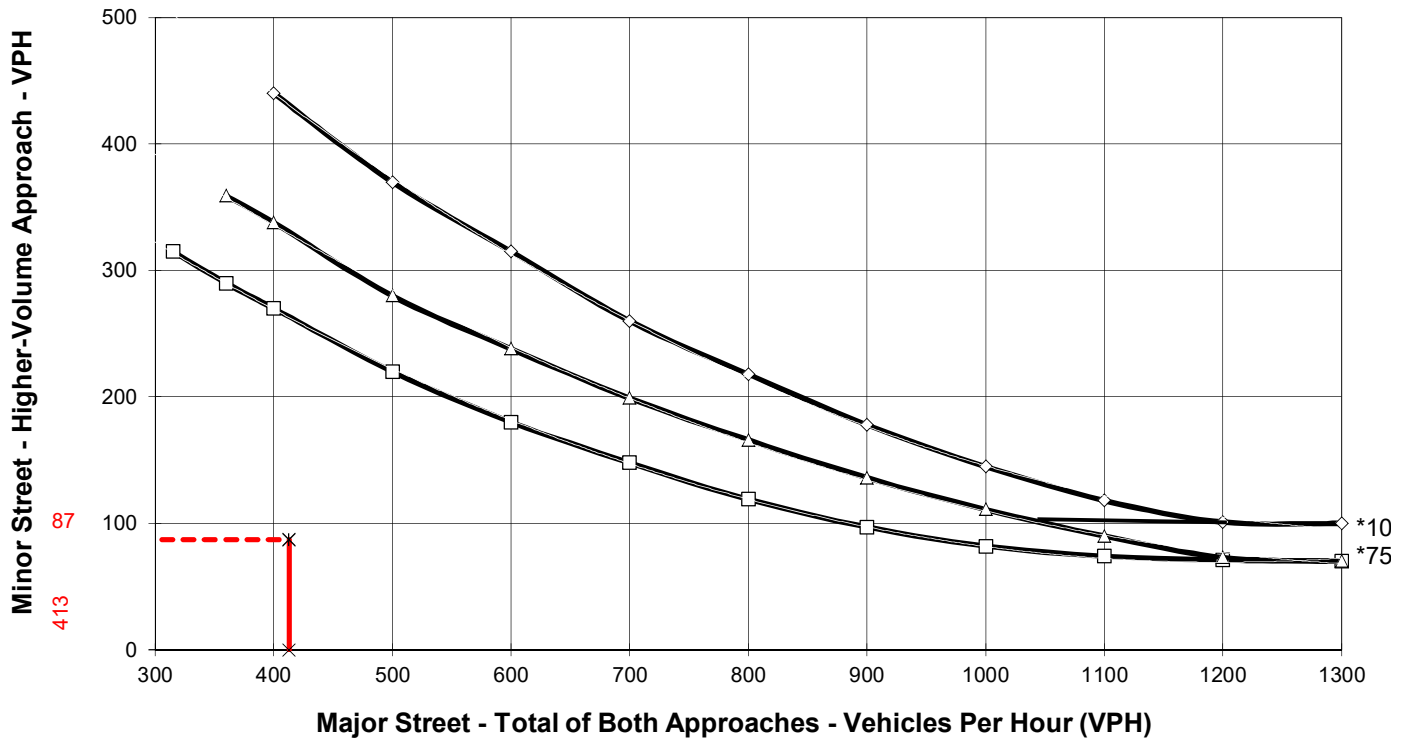
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **413**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **87**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Future Year With Conditions - PM Peak Hour**

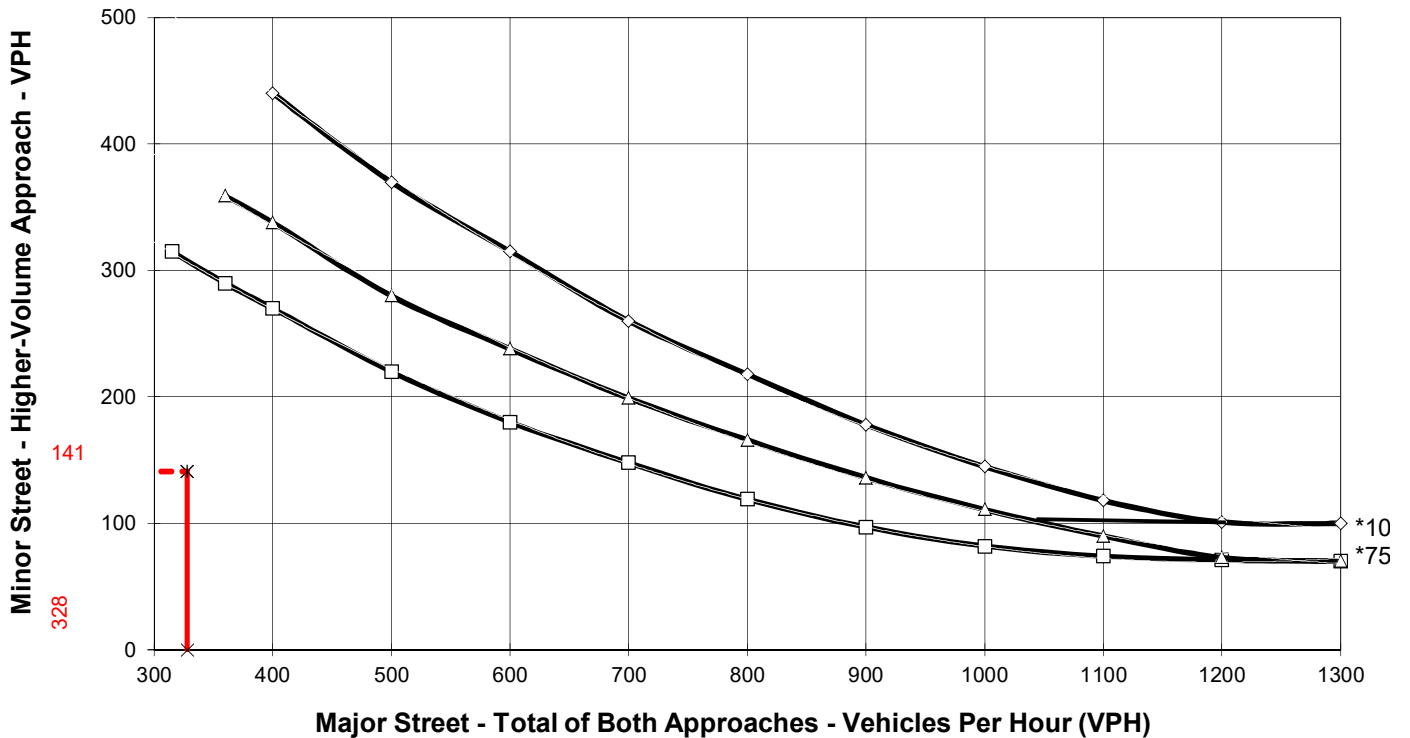
Major Street Name = **Mesa View Drive**

Total of Both Approaches (VPH) = **328**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **La Mesa Road**

High Volume Approach (VPH) = **141**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- *— Major Street Approaches
- - * - - Minor Street Approaches

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

Appendix J

RK TTM 20488 (Vista Verde) Vehicle Miles
Traveled Analysis Report

January 13, 2022

Mr. Alex Glick
VICTORVILLE DEVELOPMENT, LLC
5780 Fleet Street Suite 225
Carlsbad, CA 92008

**Subject: TTM 20488 (Vista Verde) Vehicle Miles Traveled Analysis, City of
Victorville**

Dear Mr. Glick:

A. Introduction

RK Engineering Group, Inc. (RK) is pleased to provide this Vehicle Miles Traveled (VMT) Analysis for the proposed Tentative Tract Map (TTM) 20488 (Vista Verde) project. The project site is located near the northwest corner of Mesa View Drive and La Mesa Road, in the City of Victorville, California.

The project would allow for the construction of 152 single family residential homes on an approximately 37.86 net acre site. A copy of the tentative tract map is provided in Attachment A.

The purpose of this analysis is to satisfy the latest requirements of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) for the evaluation of transportation impacts related to VMT.

This VMT analysis follows the City of Victorville's adopted VMT evaluation methodology and thresholds of significance requirements, as described in the *City of Victorville Vehicle Miles Traveled (VMT) Analysis Guidelines, Resolution No. 20-031, Adopted June 16, 2020*. (hereinafter referred to as VMT Guidelines).

B. VMT Analysis Methodology

The model used for the VMT analysis, as specified within the Victorville VMT Guidelines, is the San Bernardino Transportation Analysis Model (SBTAM). The San Bernardino County Transportation Authority (SBCTA) VMT Screening tool has been used to obtain the base model data used in this analysis. For projects with a single land use, the production/attraction (PA) method is used.

This analysis utilizes VMT statistical data at the TAZ level for project evaluation. The use of TAZ level statistics is appropriate because the project consists of similar land uses as those currently existing and forecasted within the SBTAM TAZ. The project would also utilize the same roadway network and exhibit similar travel patterns as the other residential uses within the same TAZ.

Table 1 summarizes the geographic study area for the project within SBTAM.

**Table 1
SBTAM Geographic Study Area**

County	City	Project TAZ ¹
San Bernardino	Victorville	53898101

¹ TAZ = Traffic Analysis Zone

C. VMT Thresholds of Significance

As described in the Victorville VMT Guidelines, a project’s VMT generation per service population shall be less than the City’s VMT General Plan buildout service population. Table 2 shows the VMT threshold of significance based on the SBTAM Buildout (Year 2040) VMT per service population.

**Table 2
City of Victorville VMT Threshold of Significance**

Scenario	VMT/Service Population ¹
Buildout Year 2040	25.0

¹ SBTAM/SBCTA VMT Screening Tool.

D. Base Year 2016 VMT Analysis

Table 3 shows the project’s 2016 base year VMT per service population and compares it to the City of Victorville Threshold of Significance. The project’s 2016 base year VMT per service population is shown to be below the City of Victorville threshold of significance.

**Table 3
2016 Base Year VMT Analysis¹**

Scenario	VMT/SP ¹
Project Base Year (2016) VMT ¹	23.5
Victorville Threshold of Significance	25.0
Exceeds Threshold? (Yes/No)	No

¹ VMT estimates based on the SBTAM/SBCTA VMT Screening Tool for TAZ 53898101. See Attachment B for the SBTAM VMT Screening Maps.

² SP = Service Population

E. Buildout Year 2040 VMT Analysis

Table 4 shows the project’s 2040 buildout year VMT per service population and compares it to the City of Victorville Threshold of Significance. The project’s 2040 buildout year VMT per service population is shown to be below the City of Victorville threshold of significance.

**Table 4
2040 Buildout Year VMT Analysis¹**

Scenario	VMT/SP ¹
Project Buildout Year (2040) VMT ¹	24.6
Victorville Threshold of Significance	25.0
Exceeds Threshold? (Yes/No)	No

¹ VMT estimates based on the SBTAM/SBCTA VMT Screening Tool for TAZ 53898101. See Attachment B for the SBTAM VMT Screening Maps.

² SP = Service Population

F. Findings and Conclusions

Utilizing the published SBTAM/SBCTA VMT projections, the project is not expected to exceed the City of Victorville VMT thresholds of significance in either the base year (2016) scenario or the buildout year (2040) scenario.

The project is consistent with the current zoning for the site, and the growth in residential population and housing is consistent with the Regional Housing Needs Assessment (RHNA) and the Regional Transportation Plan/Sustainable Community Strategies (RTP/SCS) for the City of Victorville.

Therefore, since the project's VMT per service population is less than the City of Victorville threshold of significance, **the VMT impact is considered less than significant.**

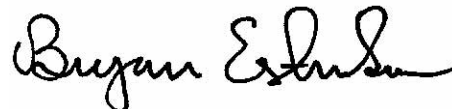
If you have any questions regarding this letter, please call us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.



Alex Tabrizi, PE, TE
Principal



Bryan Estrada, AICP
Principal



Attachments

Attachment A

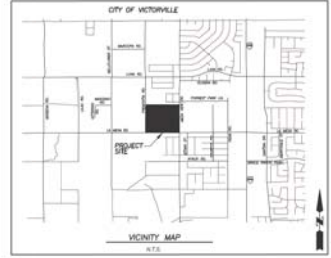
Project Tentative Tract Map

IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

VESTING TENTATIVE MAP - TRACT NO. 20488

BEING A SUBDIVISION OF PARCEL 4 OF PARCEL MAP NO. 1612 AS FILED IN BOOK 13 OF PARCEL MAPS WITHIN THE SW 1/4 OF SECTION 28, TOWNSHIP 5 NORTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

UNITED ENGINEERING GROUP CA, INC. DECEMBER 2021



LOT AREAS		LOT AREAS		LOT AREAS	
LOT #	AREA-SQ FT	LOT #	AREA-SQ FT	LOT #	AREA-SQ FT
1	5,000 0.12	22	5,953 0.13	103	4,480 0.10
2	5,000 0.12	23	5,400 0.12	104	4,480 0.10
3	5,000 0.12	24	5,950 0.13	105	4,480 0.10
4	5,343 0.12	25	6,091 0.14	106	4,480 0.10
5	5,379 0.12	26	6,887 0.15	107	4,973 0.11
6	5,958 0.14	27	7,828 0.18	108	4,836 0.11
7	5,500 0.13	28	8,367 0.19	109	4,894 0.11
8	5,500 0.13	29	8,009 0.21	110	4,898 0.11
9	5,500 0.13	30	6,437 0.15	111	4,887 0.11
10	5,500 0.13	31	7,404 0.17	112	4,888 0.11
11	5,500 0.13	32	8,848 0.18	113	4,879 0.11
12	5,500 0.13	33	5,503 0.13	114	4,158 0.10
13	5,500 0.13	34	5,530 0.12	115	4,164 0.10
14	5,500 0.13	35	5,447 0.13	116	4,174 0.10
15	5,791 0.13	36	8,772 0.14	117	4,193 0.10
16	5,833 0.14	37	9,384 0.14	118	4,163 0.10
17	7,205 0.17	38	8,252 0.18	119	4,182 0.10
18	8,804 0.18	39	8,222 0.14	120	4,182 0.10
19	5,778 0.13	40	6,238 0.14	121	4,182 0.10
20	5,712 0.13	41	7,094 0.16	122	4,182 0.10
21	5,638 0.13	42	10,844 0.24	123	4,173 0.10
22	5,569 0.13	43	10,247 0.24	124	4,165 0.10
23	5,519 0.13	44	11,780 0.26	125	4,160 0.10
24	5,488 0.13	45	9,384 0.16	126	4,160 0.10
25	5,462 0.13	46	8,252 0.14	127	4,096 0.09
26	5,813 0.13	47	11,562 0.12	128	4,347 0.10
27	5,528 0.13	48	11,761 0.27	129	4,886 0.11
28	5,421 0.12	49	10,512 0.24	130	4,417 0.10
29	5,420 0.13	50	8,440 0.19	131	4,253 0.09
30	5,474 0.13	51	8,480 0.19	132	4,754 0.11
31	5,481 0.13	52	4,498 0.10	133	4,990 0.11
32	5,889 0.13	53	4,506 0.10	134	5,535 0.13
33	5,402 0.13	54	4,206 0.10	135	6,758 0.16
34	5,888 0.13	55	4,528 0.10	136	5,470 0.13
35	6,147 0.14	56	4,478 0.10	137	5,554 0.13
36	5,858 0.13	57	4,225 0.10	138	4,834 0.11
37	5,472 0.13	58	7,194 0.17	139	4,982 0.11
38	5,524 0.13	59	10,558 0.24	140	7,190 0.17
39	5,572 0.13	60	8,798 0.19	141	8,249 0.19
40	5,520 0.13	61	5,207 0.12	142	4,576 0.10
41	4,725 0.10	62	4,786 0.11	143	4,188 0.10
42	4,533 0.10	63	4,753 0.11	144	4,223 0.10
43	7,706 0.18	64	4,887 0.11	145	4,223 0.10
44	6,380 0.15	65	4,864 0.11	146	4,225 0.10
45	5,927 0.14	66	4,822 0.11	147	4,483 0.10
46	5,775 0.13	67	4,586 0.11	148	8,313 0.19
47	5,453 0.13	68	4,587 0.10	149	8,880 0.22
48	5,480 0.12	69	4,534 0.10	150	4,890 0.11
49	5,480 0.12	100	4,518 0.10	151	4,635 0.08
50	5,482 0.12	101	4,508 0.10	152	4,362 0.10
51	5,903 0.13	102	4,492 0.10		

PROPOSED DUAL USE PAVED BASE AREA
 LOT # AREA-SQ FT AREA-AC
 A 28,920 0.66

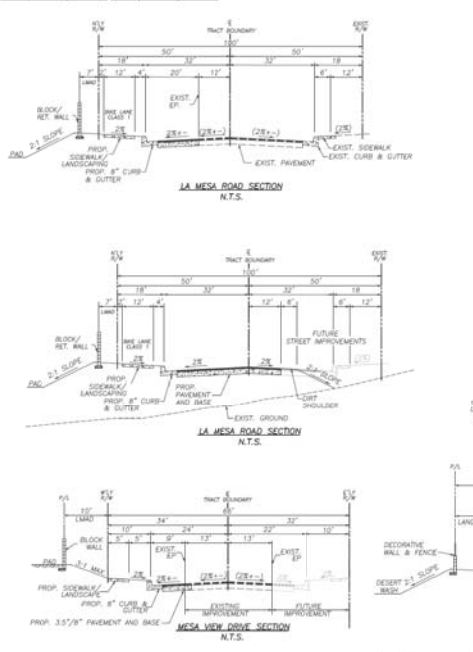
PROPOSED (TO BE REDESIGNED TO THE CITY OF VICTORVILLE)
 LOT # AREA-SQ FT AREA-AC
 B 13,623 0.31
 C 25,499 0.58

EXIST. DESERT WASH TYPICAL DRAINAGE CHANNEL AREA
 PROPOSED TO BE REDESIGNED TO THE CITY OF VICTORVILLE
 LOT # AREA-SQ FT AREA-AC
 D 140,537 3.23

PROPOSED (TO BE REDESIGNED TO THE CITY OF VICTORVILLE)
 LOT # AREA-SQ FT AREA-AC
 E 13,279 0.30
 F 7,478 0.17
 G 3,884 0.08
 H 4,284 0.10
 I 5,119 0.12
 J 33,848 0.77
 K 1,080 0.02
 L 2,866 0.07

PROPOSED (TO BE REDESIGNED TO THE CITY OF VICTORVILLE)
 LOT # AREA-SQ FT AREA-AC
 M 13,279 0.30
 N 7,478 0.17
 O 3,884 0.08
 P 4,284 0.10
 Q 5,119 0.12
 R 33,848 0.77
 S 1,080 0.02
 T 2,866 0.07

PROPOSED (TO BE REDESIGNED TO THE CITY OF VICTORVILLE)
 LOT # AREA-SQ FT AREA-AC
 U 13,279 0.30
 V 7,478 0.17
 W 3,884 0.08
 X 4,284 0.10
 Y 5,119 0.12
 Z 33,848 0.77
 AA 1,080 0.02
 AB 2,866 0.07



- GENERAL NOTES:**
1. ADJACENT PARCEL NOS. 2098-301-02 & 03
 2. THE PROPERTY OWNER HEREBY ENDORSES THE EXISTING CONTIGUOUS DIMENSIONS
 3. TOTAL GROSS AREA = 1,158,809 SQ. FT. (26.28 ACRES)
 4. TOTAL NET AREA = 1,243,036 SQ. FT. (28.54 ACRES)
 5. TOTAL NO. OF NUMBERED LOTS = 152
 6. TOTAL NO. OF LETTERED LOTS = 12
 7. LOTS 1 THROUGH 39 ARE 4,000 S.F. MIN. RESIDENTIAL LOTS
 8. LOTS 40 THROUGH 142 ARE 5,000 S.F. MIN. RESIDENTIAL LOTS
 9. NET DENSITY 3.33 DU/AC
 10. GROSS DENSITY 3.78 DU/AC
 11. AVERAGE LOT SIZE = 5,657 S.F.
 12. CONTOUR INTERVAL = 1 FOOT (BARRED)
 13. ALL SLOPES ARE 2:1 ON FLAT
 14. LOT DIMENSIONS SHOWN HEREIN ARE APPROXIMATE
 15. THIS MAP IS COMPILED FROM RECORD INFORMATION ONLY AND IS NOT TO BE USED AS A BOUNDARY SURVEY
 16. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE
 17. ALL FRONT YARD BUILDING SETBACK LINES (BSL) ARE SHOWN AT THE MAINLINE FRONT YARD BSL = 10' FEET WITH VERRS SPECIFIC PLAN.
 18. STREETS "A" THRU "X" ARE STREETS FOR PUBLIC DEDICATION

- LAND USE INFORMATION:**
- EXISTING ZONING = M-AM (WITH VERRE SPECIFIC PLAN)
 PROPOSED ZONING = M-UM (WITH VERRE SPECIFIC PLAN)
 ADJACENT EXISTING LAND USE =
 NORTH - M-AR (WITH VERRE SPECIFIC PLAN)
 EAST - LF (WITH VERRE SPECIFIC PLAN)
 WEST - S-LR (WITH VERRE SPECIFIC PLAN)
 SOUTH - R-1 (SINGLE FAMILY RESIDENTIAL)

- UTILITY PURVEYORS**
- | | |
|-----------|---|
| WATER | VICTORVILLE WATER DISTRICT
1433 CIVIC DRIVE
VICTORVILLE, CA 92393
(760) 955-5001 |
| SEWER | VICTORVILLE WATER DISTRICT
1433 CIVIC DRIVE
VICTORVILLE, CA 92393
(760) 955-5001 |
| TRASH | BURETT WASTE
17080 STODDARD WELLS RD.
VICTORVILLE, CA 92394
(760) 242-8887 |
| ELECTRIC | SOUTHERN CALIFORNIA Edison
22833 HESPERIA RD.
VICTORVILLE, CA 92392
(760) 951-3253 |
| GAS | SOUTHWEST GAS CORP.
14875 BANERUSA RD.
VICTORVILLE, CA 92392
(760) 951-4000 |
| TELEPHONE | VERIZON
16074 WILGIVE DR. BLDG. 4
VICTORVILLE, CA 92392
(760) 243-0894 |
| CABLE | CHARTER COMMUNICATIONS
12480 BUSINESS CENTER DR.
SUITE 1
VICTORVILLE, CA 92392
(760) 843-3204 |

- LEGEND**
- BSL - BUILDING SETBACK LINE
 # - LOT NUMBER
 --- - TRACT BOUNDARY
- BENCH MARK**
- CITY OF VICTORVILLE BENCHMARK NO. 0-112
 LA MESA & WINDWAY DR. 148' 1/2' EAST OF
 MAY 30 & 8' 31" SE OF FIRE HYDRANT.
 ELEV. = 3268.63
- OWNER/APPLICANT:**
 UNITED ENGINEERING GROUP-CA, INC.
 8880 HAVEN AVENUE
 SUITE 100
 RANCHO CALAMAGUA, CA 91730
 PHONE: 952-646-6245
 www.ueg.com
- PREPARED BY:**
 UNITED ENGINEERING GROUP-CA, INC.
 8880 HAVEN AVENUE
 SUITE 100
 RANCHO CALAMAGUA, CA 91730
 PHONE: 952-646-6245
 www.ueg.com

LEGAL DESCRIPTION:

PER CHANGE COUNTY CLERK COMPANY PRELIMINARY REPORT DATED MAY 17, 2017 ORDER NO. 140-188888-04

THE LAND REFERRED TO HEREIN IS SITUATED IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE EAST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID PARCEL 4 TO THE MID POINT OF THE WEST LINE OF SAID EAST 1/2 BEING A LINE FROM THE MID POINT OF THE NORTH LINE OF SAID PARCEL 4 TO THE MID POINT OF THE SOUTH LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS AND JANUARY 18, 1988 AS INSTRUMENT NO. 88-019874, OFFICIAL RECORDS.

PARCEL 18:

THE NORTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 19:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 20:

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PARCEL 21:

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PARCEL 22:

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PARCEL 23:

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PARCEL 24:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 25:

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PARCEL 26:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 27:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 28:

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PARCEL 29:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 30:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 31:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 32:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 33:

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PARCEL 35:

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PARCEL 36:

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PARCEL 37:

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PARCEL 38:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 39:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 40:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 41:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 42:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 43:

THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PARCEL 48, RECORDS OF SAID COUNTY, THE NORTH LINE OF SAID SOUTH 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE EAST LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1988, INSTRUMENT NO. 88-1185613, OFFICIAL RECORDS.

PARCEL 44:

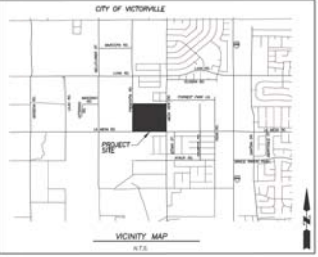
THE SOUTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF

IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

VESTING TENTATIVE MAP - TRACT NO. 20488

BEING A SUBDIVISION OF PARCEL 4 OF PARCEL MAP NO. 1612 AS FILED IN BOOK 13 OF PARCEL MAPS WITHIN THE SW 1/4 OF SECTION 26, TOWNSHIP 5 NORTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

UNITED ENGINEERING GROUP, INC. DECEMBER 2021



LOT #	AREA-AC	AREA-AC	LOT #	AREA-AC	AREA-AC	LOT #	AREA-AC	AREA-AC
1	5,000	0.12	32	5,953	0.13	103	4,480	0.10
2	5,000	0.12	33	5,400	0.12	104	4,480	0.10
3	5,950	0.12	34	5,950	0.13	105	4,480	0.10
4	5,343	0.12	35	6,091	0.14	106	4,480	0.10
5	5,379	0.12	36	6,887	0.15	107	4,973	0.11
6	5,958	0.14	37	7,828	0.18	108	4,838	0.11
7	5,500	0.13	38	8,937	0.19	109	4,894	0.11
8	5,500	0.13	39	9,000	0.21	110	4,898	0.11
9	5,500	0.13	40	8,437	0.15	111	4,897	0.11
10	5,500	0.13	41	7,404	0.17	112	4,888	0.11
11	5,500	0.13	42	8,848	0.18	113	4,879	0.11
12	5,500	0.13	43	5,503	0.13	114	4,159	0.10
13	5,500	0.13	44	5,350	0.12	115	4,164	0.10
14	5,500	0.13	45	5,447	0.13	116	4,174	0.10
15	5,791	0.13	46	8,572	0.14	117	4,190	0.10
16	5,833	0.14	47	8,384	0.14	118	4,183	0.10
17	7,295	0.17	48	8,252	0.15	119	4,182	0.10
18	8,804	0.18	49	8,232	0.14	120	4,182	0.10
19	5,378	0.13	70	8,238	0.14	121	4,182	0.10
20	5,372	0.13	71	7,094	0.16	122	4,182	0.10
21	5,838	0.13	72	10,844	0.24	123	4,173	0.10
22	5,569	0.13	73	10,247	0.24	124	4,165	0.10
23	5,519	0.13	74	11,790	0.41	125	4,160	0.10
24	5,488	0.13	75	8,344	0.18	126	4,160	0.10
25	5,462	0.13	76	8,252	0.14	127	4,096	0.09
26	5,813	0.13	77	5,552	0.12	128	4,347	0.10
27	5,528	0.13	78	11,761	0.27	129	4,886	0.11
28	5,421	0.12	79	10,312	0.24	130	4,417	0.10
29	5,420	0.13	80	4,440	0.10	131	4,253	0.09
30	5,474	0.13	81	4,480	0.10	132	4,754	0.11
31	5,481	0.13	82	4,488	0.10	133	4,390	0.11
32	5,489	0.13	83	4,506	0.10	134	5,335	0.13
33	5,452	0.13	84	4,296	0.10	135	6,756	0.16
34	5,888	0.13	85	4,528	0.10	136	5,470	0.12
35	6,347	0.14	86	4,178	0.10	137	5,534	0.13
36	5,858	0.13	87	4,225	0.10	138	4,834	0.11
37	5,472	0.13	88	7,184	0.17	139	4,862	0.11
38	5,524	0.13	89	10,558	0.24	140	7,190	0.17
39	5,572	0.13	90	8,196	0.18	141	8,249	0.19
40	5,820	0.13	91	6,307	0.12	142	4,515	0.10
41	6,025	0.14	92	6,786	0.11	143	4,188	0.10
42	6,333	0.15	93	4,755	0.11	144	4,233	0.10
43	7,706	0.18	94	4,887	0.11	145	4,233	0.10
44	6,380	0.15	95	4,884	0.11	146	4,235	0.10
45	5,927	0.14	96	4,822	0.11	147	4,483	0.10
46	5,775	0.13	97	4,586	0.11	148	8,313	0.19
47	5,453	0.13	98	4,557	0.10	149	8,880	0.22
48	5,480	0.12	99	4,534	0.10	150	4,890	0.11
49	5,400	0.12	100	4,518	0.10	151	4,855	0.09
50	5,452	0.12	101	4,508	0.10	152	4,282	0.10
51	5,803	0.13	102	4,492	0.10			

PROPOSED SUB-AREA AND BASIN AREA

LOT #	AREA-AC	AREA-AC
A	28,893	0.68

PROPOSED SUB-AREA AND BASIN AREA

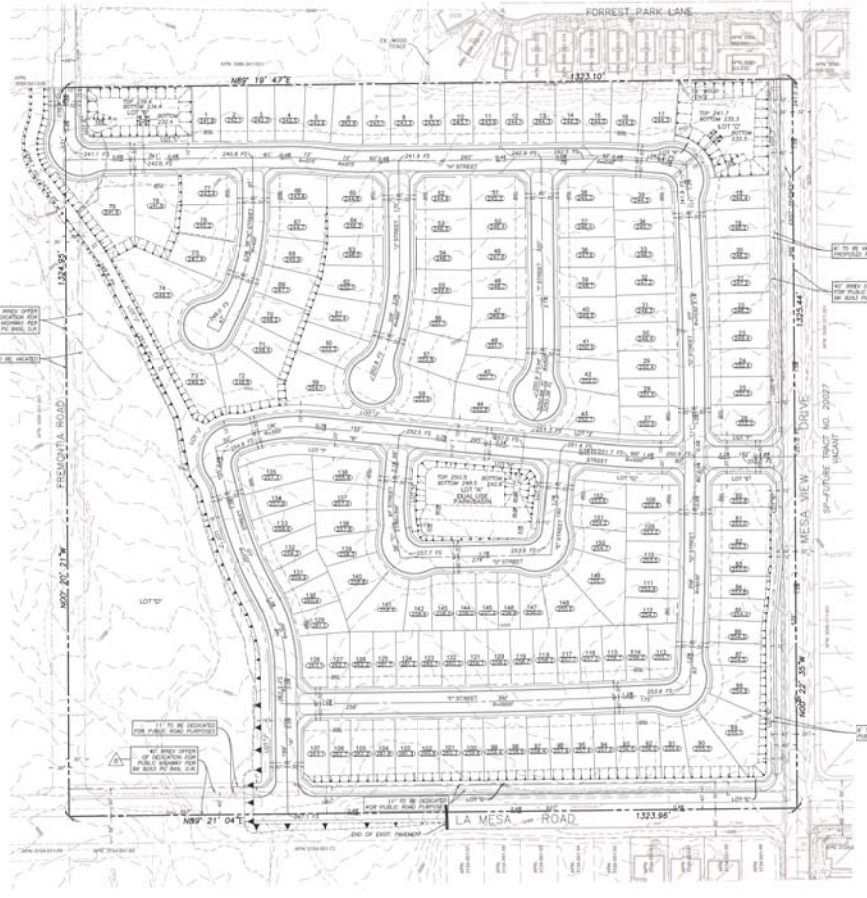
LOT #	AREA-AC	AREA-AC
B	13,823	0.46
C	25,499	0.59

EXIST. DESERT WASH TO BE REDUCED TO THE CITY OF VICTORVILLE

LOT #	AREA-AC	AREA-AC
D	140,537	5.31

PROPOSED LOT AND AREA

LOT #	AREA-AC	AREA-AC
E	11,379	0.30
F	7,478	0.27
G	3,884	0.08
H	4,344	0.10
I	5,119	0.12
J	33,846	0.77
K	1,080	0.02
L	2,888	0.07



GENERAL NOTES:

1. ADJACENT PARCEL NOS. 2098-301-02 B & C3.
2. THE PROPERTY SHOWS HEREIN EXCLUDING THE EXISTING CONTIGUOUS OVERSIGHT.
3. TOTAL GROSS AREA = 7,195,809 SQ. FT. - 162.54 ACRES
4. TOTAL NET AREA = 1,848,837 SQ. FT. - 42.09 ACRES
5. TOTAL NO. OF NUMBERED LOTS = 152
6. TOTAL NO. OF LETTERED LOTS = 12
7. LOTS 1 THROUGH 79 ARE 4,000 S.F. MIN. (RESIDENTIAL LOTS)
8. LOTS 80 THROUGH 152 ARE 5,000 S.F. MIN. (RESIDENTIAL LOTS)
9. NET DENSITY: 4.01 D/A/C
10. GROSS DENSITY: 2.72 DUAL/A/C
11. AVERAGE LOT SIZE = 5,531 S.F.
12. CONTOUR INTERVAL = 1 FOOT (BARE)
13. ALL SLOPES ARE 2% OR FLATTER
14. LOT DIMENSIONS SHOWN HEREIN ARE APPROXIMATE
15. THIS MAP IS COMPILED FROM RECORD INFORMATION ONLY AND IS NOT TO BE USED AS A BOUNDARY SURVEY
16. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE
17. ALL FRONT YARD BUILDING SETBACK LINES (BSL) ARE SHOWN AT THE MANHOLE FRONT YARD BSL = 10' FOR VISTA VERDE SPECIFIC PLAN
18. ALL 3000 FEET TO ALL ELEVATIONS SHOWN HEREIN TO OBTAIN TRUE DATUM
19. TOPOGRAPHY SOURCE: ATLAS GEOSPATIAL CONTOUR INTERVAL 1 FT.

LAND USE INFORMATION:

EXISTING ZONING = M-5/A/R (WITH VERDE SPECIFIC PLAN)
 PROPOSED ZONING = M-5/A/R (WITH VERDE SPECIFIC PLAN)
 ADJACENT EXISTING LAND USE =
 NORTH = M/R (WITH VERDE SPECIFIC PLAN)
 EAST = L/P (WITH VERDE SPECIFIC PLAN)
 WEST = M/R (WITH VERDE SPECIFIC PLAN)
 SOUTH = R-1 (SINGLE FAMILY RESIDENTIAL)

UTILITY PURVEYORS

- WATER: VICTORVILLE WATER DISTRICT
1434 CIVIC DRIVE
VICTORVILLE, CA 92393
(760) 955-5001
- SEWER: VICTORVILLE WATER DISTRICT
1434 CIVIC DRIVE
VICTORVILLE, CA 92393
(760) 955-5001
- TRASH: BURETTE WASTE
17080 STODOLSKY WELLS RD.
VICTORVILLE, CA 92394
(760) 242-8807
- ELECTRIC: SOUTHERN CALIFORNIA EDISON
12253 HESPERIA RD.
VICTORVILLE, CA 92392
(760) 951-3253
- GAS: SOUTHWEST GAS CORP.
14671 BARRIOSA RD.
VICTORVILLE, CA 92392
(760) 951-8000
- TELEPHONE: NEXTON
16074 WILKIE DR. BLDG. 4
VICTORVILLE, CA 92392
(760) 242-0804
- CABLE: CHARTER COMMUNICATIONS
12480 BUSINESS CENTER DR.
SUITE 1
VICTORVILLE, CA 92392
(760) 843-3254

LEGEND

- BSL: BUILDING SETBACK LINE
- 40: LOT NUMBER
- : TRACT BOUNDARY

BENCH MARK

CITY OF VICTORVILLE BENCHMARK NO. 0-212
 LA MESA & HAYDEN DR., 148' E/O EAST OF
 MAY 38 & 81' SE OF FIRE HYDRANT.
 ELEV. = 1066.82

OWNER/APPLICANT:

VICTORVILLE DEVELOPMENT, LLC
 5140 FILLET STREET, SUITE 225
 CARLSBAD, CA 92008

PREPARED BY:

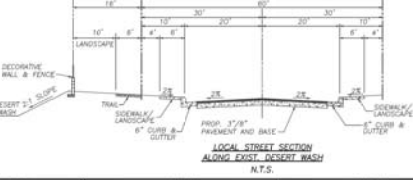
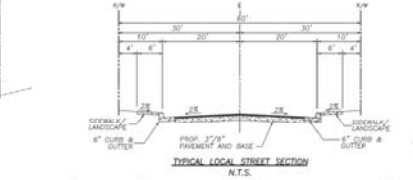
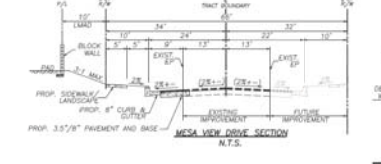
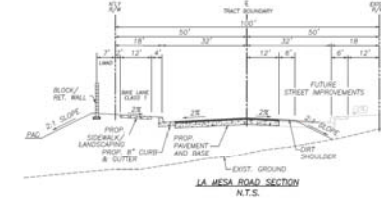
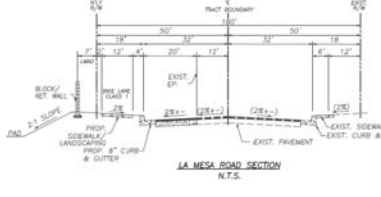
UNITED ENGINEERING GROUP-CA, INC.
 8885 HAYEN AVENUE
 SUITE 158
 RANCHO CALAMAGUA, CA 91730
 PHONE: (951) 658-8244
 www.ueg.com

EASEMENTS

1. EASEMENTS SHOWN HEREIN WERE DERIVED FROM THE PRELIMINARY REPORT FOR TITLE INSURANCE, AS PREPARED BY CHARGE COAST TITLE COMPANY, ORDER NO. 198-18888-04, DATED AS OF MAY 14, 2011. NO RESPONSIBILITY FOR CONTENT, COMPLETENESS OR ACCURACY OF SAID PRELIMINARY REPORT IS ASSUMED BY THIS MAP. THE SURVEYOR, OR UNITED ENGINEERING GROUP-CA, INC. DOES NOT WARRANT THE ACCURACY OF THE SURVEY AND DOES NOT WARRANT THAT THE INFORMATION HEREIN IS CORRECT.
2. AN EASEMENT FOR PURPOSES HEREIN SHOWN IS AS SHOWN HEREIN. THE EASEMENT IS AS SHOWN IN AN INSTRUMENT RECORDED JANUARY 16, 1998, INSTRUMENT NO. 88-018743, OFFICIAL RECORDS AND JANUARY 18, 1998 AS INSTRUMENT NO. 88-01874, OFFICIAL RECORDS.

LEGAL DESCRIPTION:

PER CHARGE COAST TITLE COMPANY PRELIMINARY REPORT DATED MAY 17, 2011 ORDER NO. 198-18888-04.
 THE LAND REFERRED TO HEREIN IS SITUATED IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 THE EAST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PAGE 88, RECORDS OF SAID COUNTY.
 THE WEST LINE OF SAID EAST 1/2 BEING A LINE FROM THE MID POINT OF THE NORTH LINE OF SAID PARCEL 4 TO THE MID POINT OF THE SOUTH LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1998, INSTRUMENT NO. 88-018743, OFFICIAL RECORDS AND JANUARY 18, 1998 AS INSTRUMENT NO. 88-01874, OFFICIAL RECORDS.
 DISTANCES AND BEARINGS ARE TO BE MEASURED TO STREET CENTERLINES.
 PARCEL 10:
 THE NORTH 1/2 OF THE WEST 1/2 OF PARCEL 4 OF PARCEL MAP NO. 1812, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 13 OF PARCEL MAPS, PAGE 88, RECORDS OF SAID COUNTY.
 THE WEST LINE OF SAID WEST 1/2 BEING A LINE FROM THE MID POINT OF THE WEST LINE OF SAID PARCEL 4 TO THE MID POINT OF THE SOUTH LINE OF SAID PARCEL 4, AS PER CERTIFICATE OF COMPLIANCE RECORDED JANUARY 16, 1998, INSTRUMENT NO. 88-018743, OFFICIAL RECORDS.
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 DISTANCES AND BEARINGS ARE TO BE MEASURED TO STREET CENTERLINES.



SUBMITTALS		REVISIONS			
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE

DESIGNED BY: CHRISTOPHER F. LINA DATE: 12/29/2021
 CHECKED BY: GUY L. W. SMITH DATE: 12/29/2021
 DRAWN BY: GUY L. W. SMITH

SEAN C. PHILIPS
 U.S. N.S. 8174
 12/29/2021

ueg
 united engineering group

8885 Haven Avenue
 Suite 158
 Rancho Calamagua,
 CA 91730
 Phone: 951.658.8244
 www.ueg.com

LA MESA ROAD & MESA VIEW DRIVE

GRADING DESIGN
 TTM NO. 20488

DATE:	DECEMBER 8, 2021
SHEET 1 OF 3	
PROJECT NUMBER:	CA-10181

Attachment B

SBTAM/SBCTA VMT Screening Maps

2016 BASE YEAR VMT

VMT Screening

Input | **Output**

Zoom in to your project location close enough that the blue parcel layer appears. Select San Bernardino County Parcels in the drop-down. Use the black square to select your project parcel(s). When ready with the desired VMT Metric, Baseline Year and Threshold from the drop-down, click Run. The output map shows all low VMT generating TAZs in the County. To zoom in to the parcel, right click on the three dots of "Output Parcels" on the Output window. Once zoomed in, click on the parcel to see the VMT results. To clear the selection or start over, click on the "X" on the output tab once the tool has run.*

San Bernardino Parcels (Zoom in...)

VMT Metric*
PA VMT Per Service Population

Baseline Year*
2016

Threshold (% reduction from baseline year)*
Below City Future Buildout (0%)

Run

Parcel Number 309635103 (1 of 2)

Traffic Analysis Zone (TAZ)	53898101
Jurisdiction	Victorville
TAZ VMT	23.5
Jurisdiction VMT	25
% Difference	-6.02%
VMT Metric	PA VMT Per Service Population
Threshold	25

Zoom to

2040 BUILDOUT YEAR VMT

VMT Screening

Input Output

Zoom in to your project location close enough that the blue parcel layer appears. Select San Bernardino County Parcels in the drop-down. Use the black square to select your project parcel(s). When ready with the desired VMT Metric, Baseline Year and Threshold from the drop-down, click Run. The output map shows all low VMT generating TAZs in the County. To zoom in to the parcel, right click on the three dots of "Output Parcels" on the Output window. Once zoomed in, click on the parcel to see the VMT results. To clear the selection or start over, click on the "X" on the output tab once the tool has run.*

San Bernardino Parcels (Zoom in...)

VMT Metric*
PA VMT Per Service Population

Baseline Year*
2040

Threshold (% reduction from baseline year)*
Below City Future Buildout (0%)

Run

Help

