

MONTE VISTA ROAD  
AND OLIVINE ROAD  
RESIDENTIAL

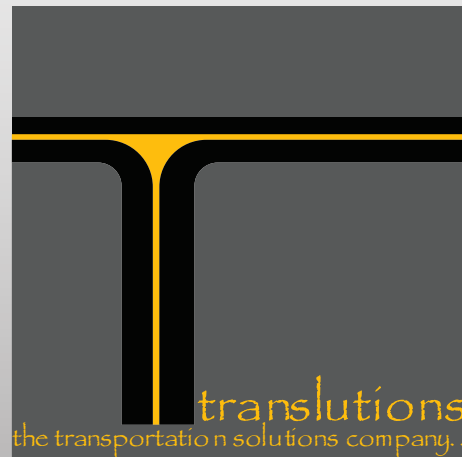
TRAFFIC STUDY

JULY 23, 2021

PREPARED FOR:

ACTK CAPITAL PARTNERS  
14050 Bradford Meadows  
Garden Grove, CA 92844

PREPARED BY:



translutions, inc.

17632 Irvine Boulevard, Suite 200  
Tustin, California 92780  
(949) 656-3131



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## 1.0 INTRODUCTION

This report presents the methodology, findings and conclusions of the traffic study prepared for the proposed Monte Vista Road and Olivine Road Residential project (the project). The proposed project will be located on the southeast corner of Monte Vista Road and Olivine Road in the City of Victorville (City). The proposed project will include 194 single-family dwelling units.

### 1.1 Purpose of the Traffic Study and Study Objectives

This report is intended to satisfy the requirements for a traffic study established by the City of Victorville's "General Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service and Improvement Needs" adopted January 2005, the City of Victorville's "Vehicle Miles Traveled (VMT) Analysis Guidelines", the SBCTA Congestion Management Program (CMP), and the requirements for the disclosure of potential impacts and mitigation measures per the California Environmental Quality Act (CEQA).

The San Bernardino CMP is implemented by the San Bernardino County Transportation Authority (SBCTA). The CMP requires analysis of off-site intersections potentially affected by the project, which the CMP defines as intersections at which the project is forecast to add 50 or more peak hour trips. This report evaluates four intersections under eight analysis scenarios and proposes circulation improvements for intersections that operate or are forecast to operate at unsatisfactory levels of service. In addition, this reports also evaluates alternative modes of travel near the project.

### 1.2 Project Location & Study Area

As stated earlier, the project is located on the southeast corner of Monte Vista Road and Olivine Road in the City of Victorville. Figure 1 shows the regional location of the project. The project proposes the construction of 194 single-family dwelling units and is planned to open in 2023. Figure 2 illustrates the site plan of the proposed project.

Based on the trip generation and trip distribution of the proposed project, and based on discussion with City staff, this report analyzes the following four intersections for traffic operations:

1. Monte Vista Road and Olivine Road;
2. Monte Vista Road and Lindero Road;
3. Monte Vista Road and Bear Valley Road; and
4. US-395/Bear Valley Road.

Figure 3 illustrates intersections included in the traffic study.

### 1.3 Analysis Scenarios

Based on the CMP and discussion with City staff, this report analyzes traffic conditions for the following six scenarios:

1. Existing Conditions;
2. Existing With Project Conditions;
3. Opening Year (2023) Conditions;
4. Opening Year (2023) With Project Conditions;
5. Year 2033 Conditions;
6. Year 2033 With Project Conditions;



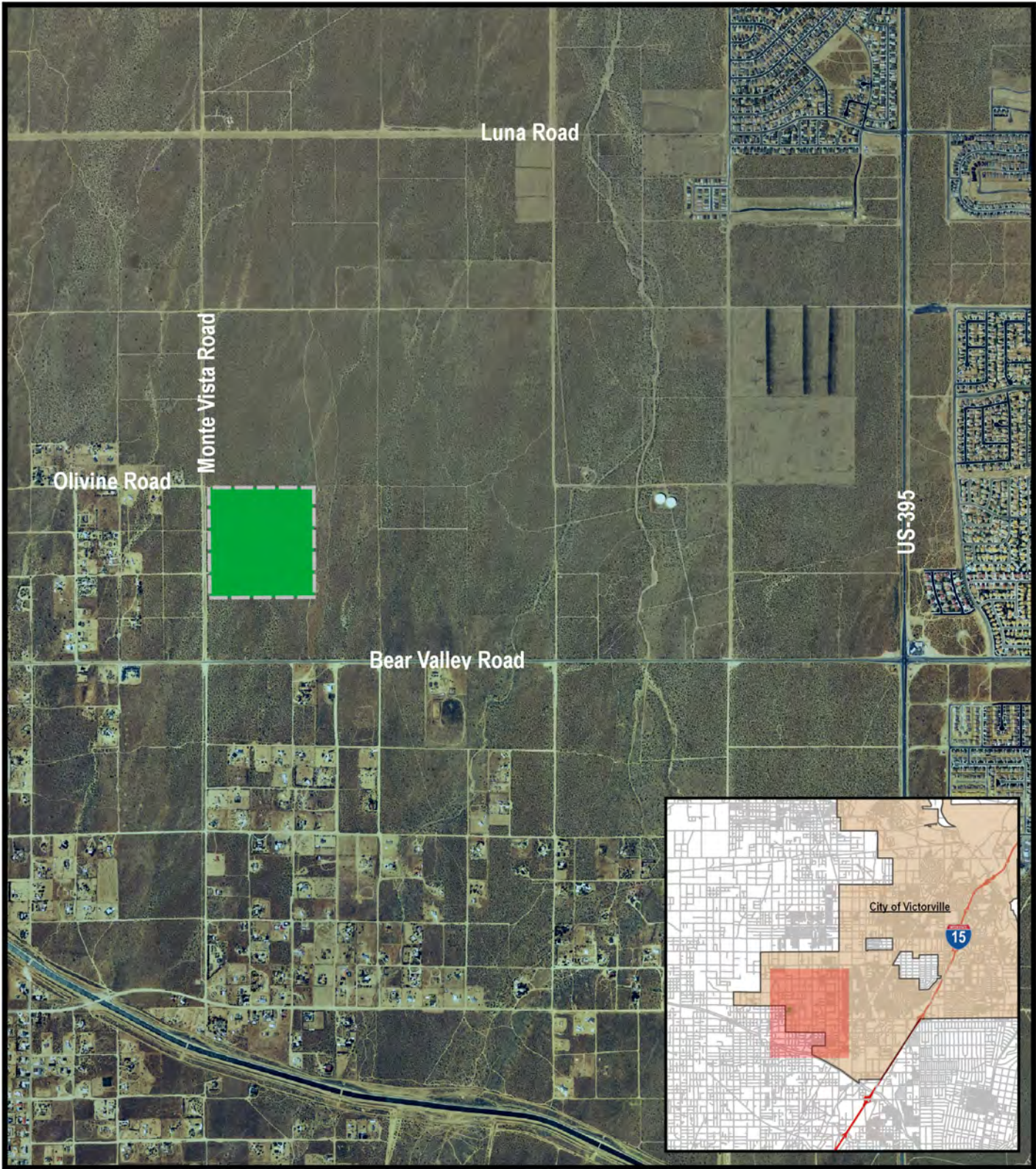



FIGURE 1

Legend

 Project Boundary

Monte Vista Road and Olivine Road Residential Regional Project Location









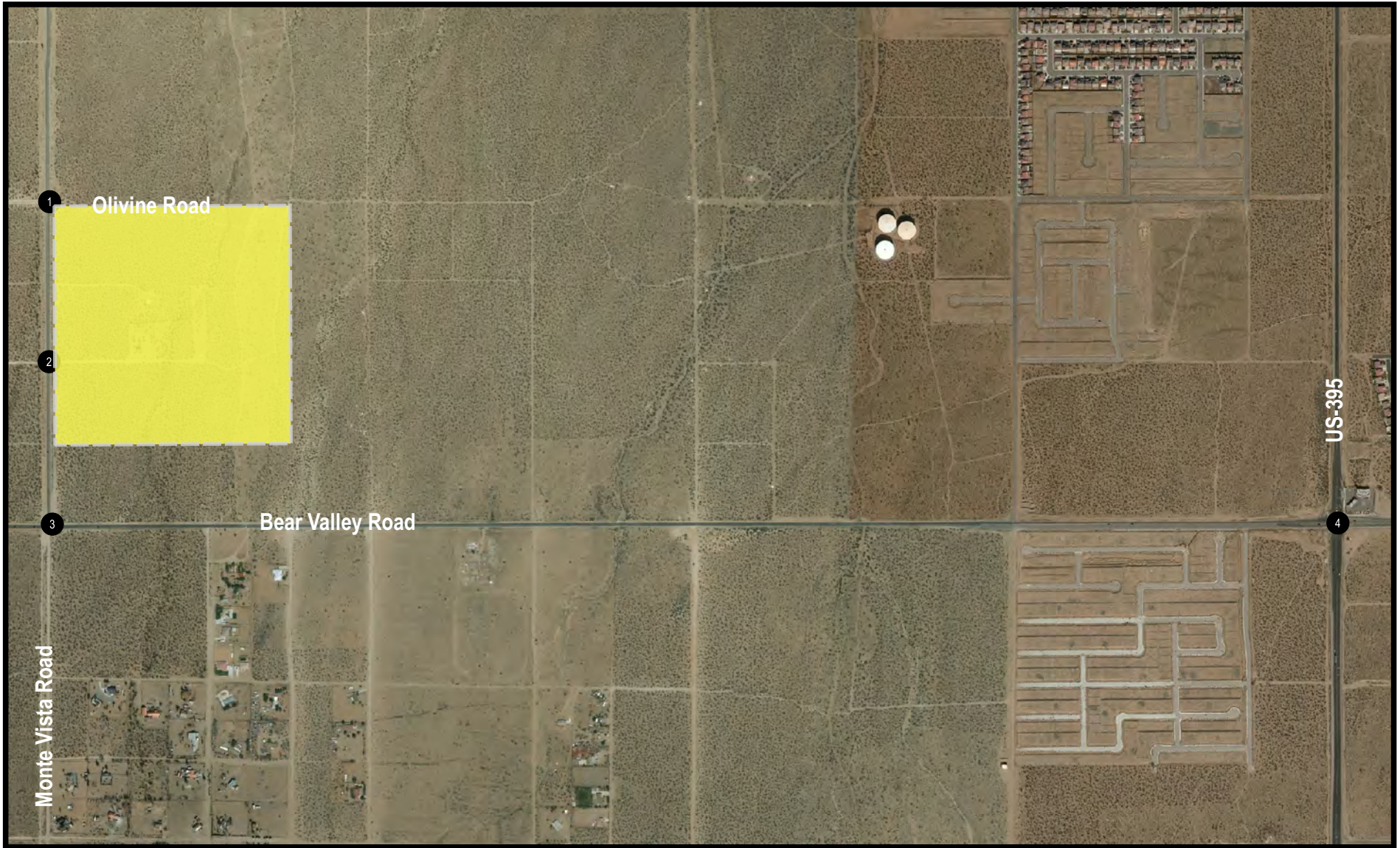


FIGURE 3

Legend

- Study Area Intersections
- ▭ Project Boundary

Monte Vista Road and Olivine Road Residential Study Area Intersections

Consistent with the CMP, this report analyzes weekday a.m. and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 a.m. and 9:00 a.m. The p.m. peak hour is defined as the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m.

## **2.0 PROJECT DESCRIPTION**

The project site is vacant and proposed to include 194 single-family dwelling units. Access to the project site will be provided at the intersections of Monte Vista Road/Olivine Road and Monte Vista Road/Lindero Road. A southbound left-turn at Monte Vista Road/Olivine Road will be included as project design feature. Striping plans will be provided by United Engineering as part of the Engineering submittal.

### **2.1 Project Trip Generation**

The trip generation for the proposed project is based on the trip generation rates for Land Use 210 – “Single-Family Detached Housing” included in the Institute of Transportation Engineers’ (ITE) *Trip Generation*, 10<sup>th</sup> Edition. Table A shows the calculation of the project trip generation for the a.m. peak hour, p.m. peak hour, and weekday. As shown in Table A, the proposed project is forecast to generate 144 total trips in the a.m. peak hour, 192 total trips in the p.m. peak hour, and 1,831 daily trips.

### **2.2 Project Trip Distribution & Assignment**

Trip distribution patterns for the proposed project were developed based on location of local and regional destinations. Figure 4 shows the trip distribution for project trips. The project trip generation was applied to the trip distribution patterns for the proposed project to develop trip assignments for new project trips. Figure 5 shows the project trip assignment at the study intersections.

## **3.0 LOS DEFINITIONS, PROCEDURES, AND THRESHOLDS**

Level of service (LOS) is a measure of the quality of operational conditions within a traffic stream and is generally expressed in terms of such measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Levels range from A to F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion. Consistent to the guidelines, the Highway Capacity Manual (HCM) procedures have been used to evaluate levels of service. This section discusses the LOS definitions, procedures, and thresholds used in this report.

### **3.1 Levels of Service**

The analysis of traffic operations at intersections was conducted according to the Highway Capacity Manual 6<sup>th</sup> Edition (HCM) delay methodologies, which is described in the Highway Capacity Manual (Transportation Research Board, Washington, D.C., November 2016). Under the HCM methodology, LOS for signalized intersections is based on the average delay experienced by vehicles traveling through an intersection, whereas for un-signalized intersections, the LOS is based on the worst approach where the minor leg has a shared lane and on the worst movement where the minor leg has dedicated turn lanes. Table B presents a brief description of each level of service letter grade, as well as the range of delays associated with each grade.

### **3.2 Levels of Service Thresholds**

All study intersections are under the jurisdiction of the City of Victorville and Caltrans. The City of Victorville maintains that LOS for intersections shall be operate at LOS D or better. Therefore, study intersections operating at LOS E, or F are required to be mitigated to LOS D or better. Caltrans uses a threshold based on LOS D, therefore, intersections operating at LOS E or F are mitigated to LOS D or better.

## **4.0 VOLUME DEVELOPMENT METHODOLOGY**

Forecast traffic volumes at study intersections were developed based on discussion with City staff and consistent with CMP guidelines.

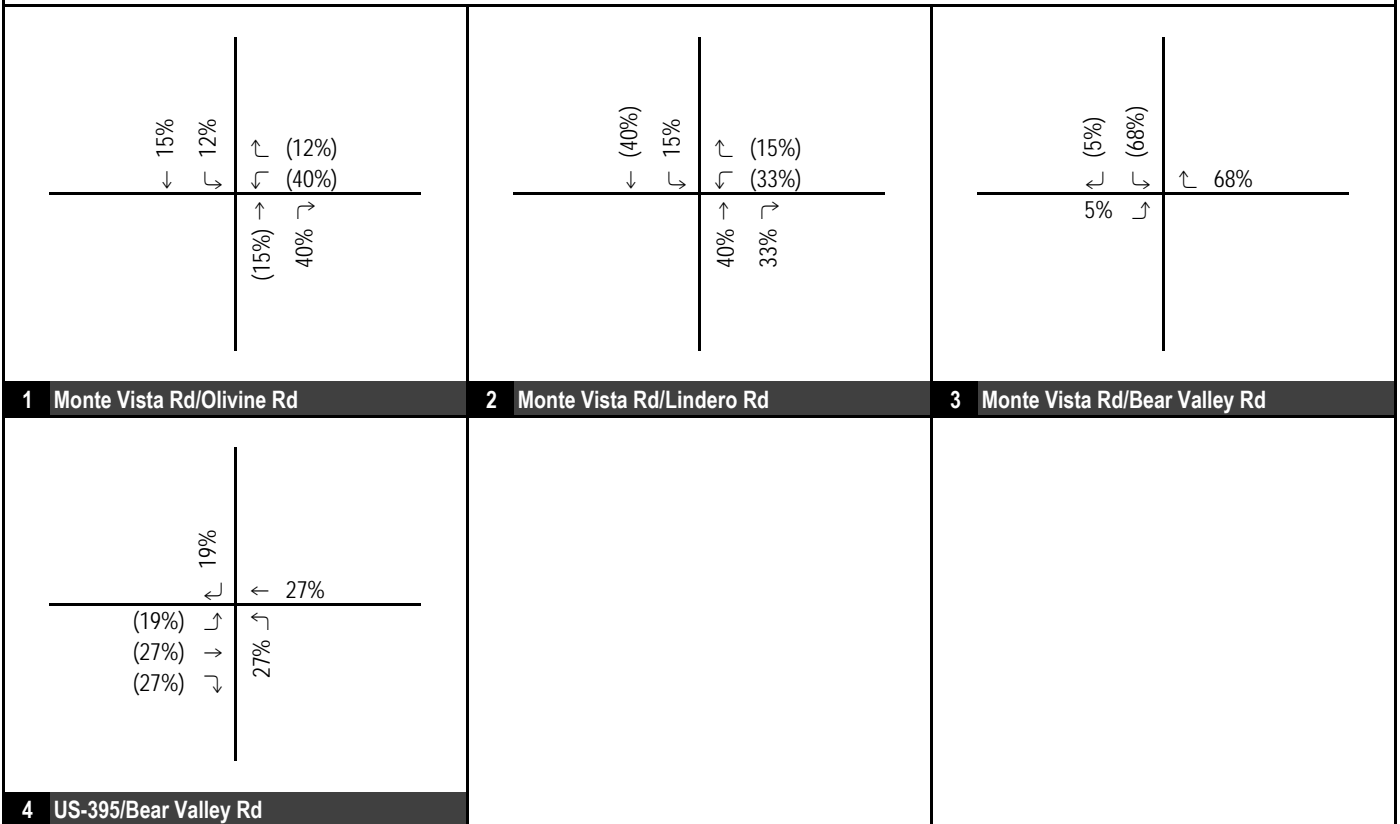


**Table A - Project Trip Generation**

Land Use	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
		In	Out	Total	In	Out	Total	
<b>Future Use</b>								
<b>Single-Family Residential</b>								
Trip Generation Rates <sup>1</sup>		0.19	0.56	0.74	0.62	0.37	0.99	9.44
Trip Generation	194 DU	36	108	144	121	71	192	1,831
<b>Total Trip Generation</b>		<b>36</b>	<b>108</b>	<b>144</b>	<b>121</b>	<b>71</b>	<b>192</b>	<b>1,831</b>

**Notes:** DU = Dwelling Unit

<sup>1</sup> Trip generation based on rates for Land Use 210 - "Single-Family Detached Housing" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

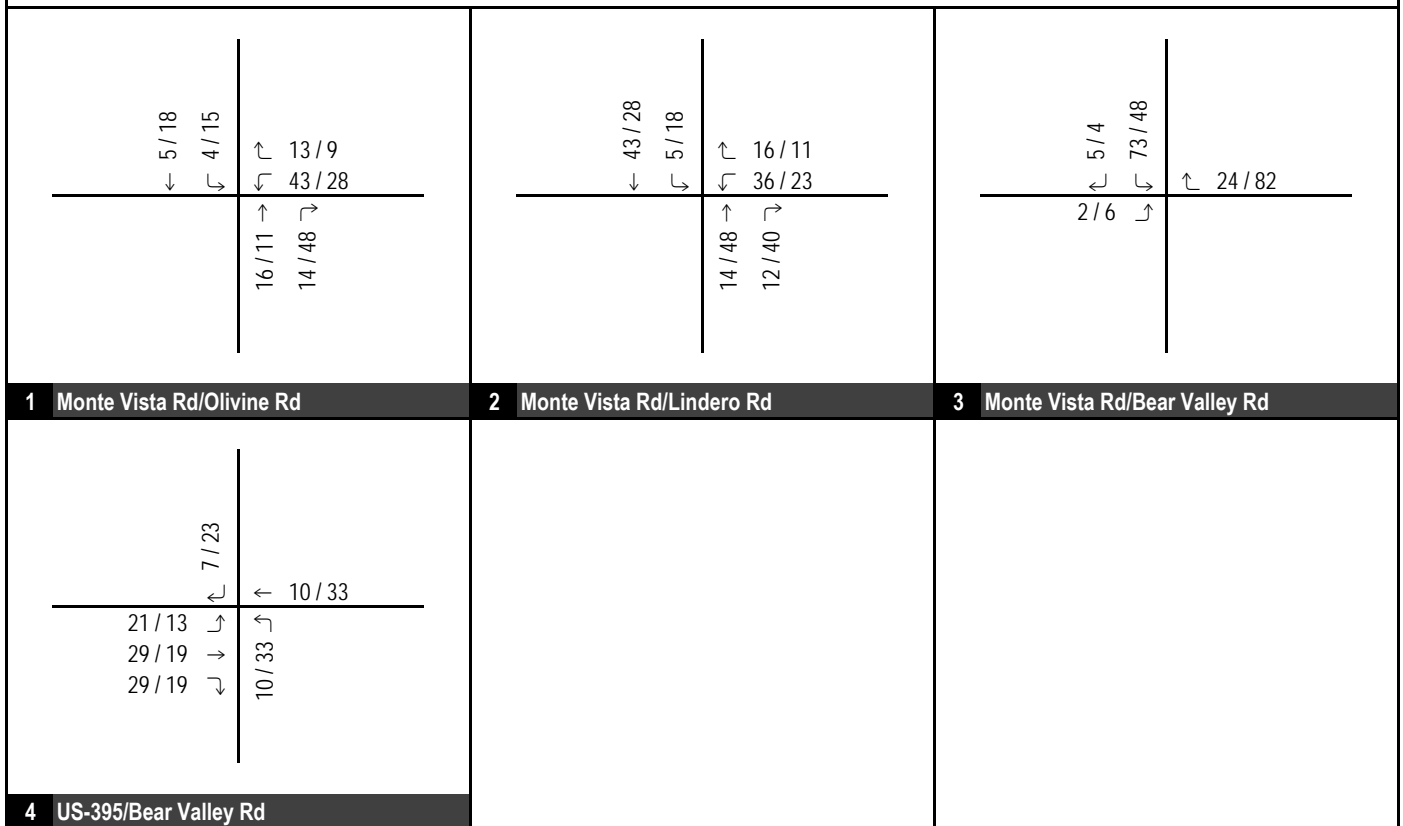
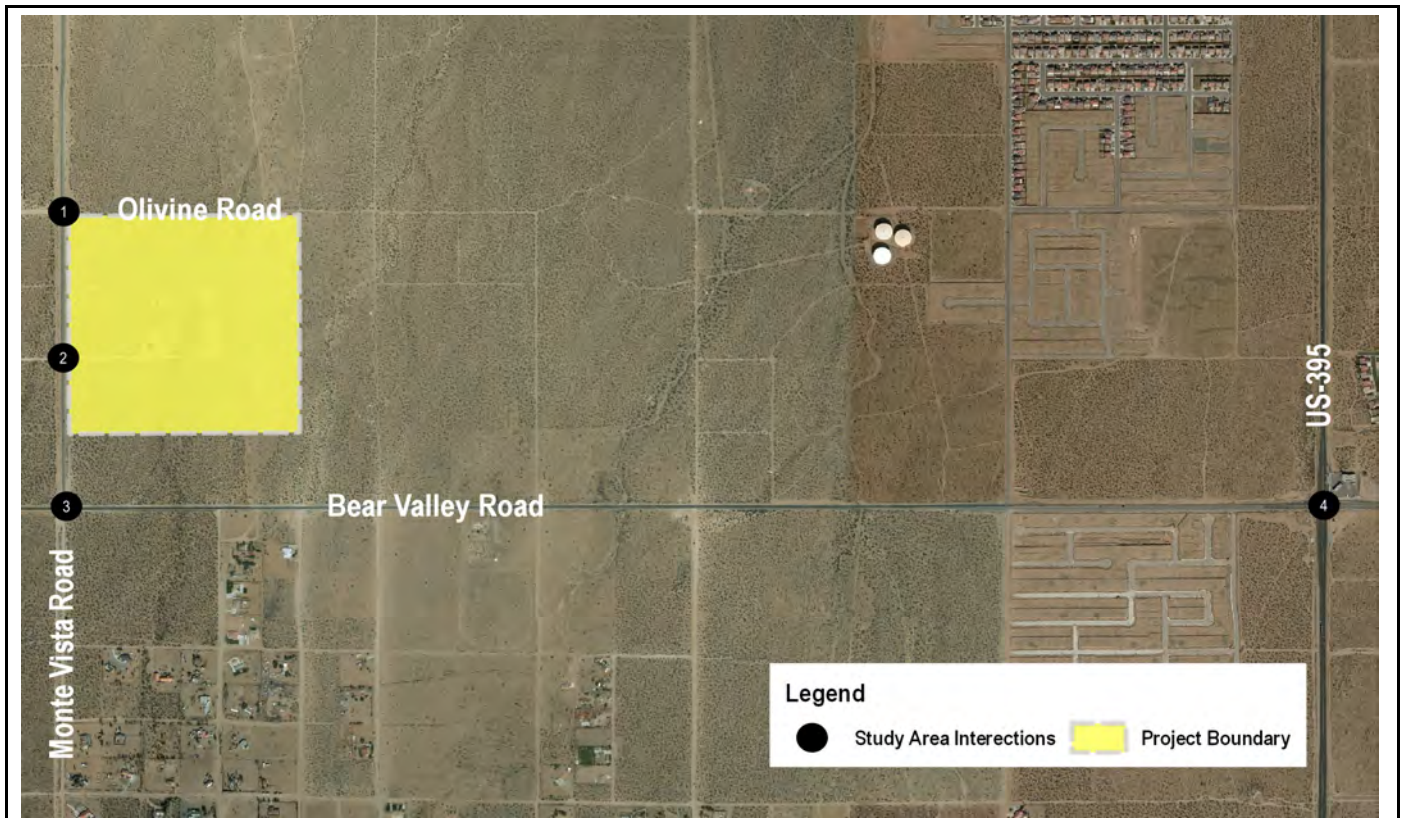


**FIGURE 4**

XXX%(YYY%) Inbound%(Outbound%) Percent



**Monte Vista Road and Olivine Road Residential Development  
Project Trip Distribution**



**FIGURE 5**

XXX / YYY AM / PM Volumes

**Monte Vista Road and Olivine Road Residential Development  
Project Trip Assignment**





Table B: Level Of Service Criteria

LOS	Description of Drivers' Perception and Traffic Operation	Delay in Seconds	
		Un-signalized	Signalized
A	This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10	≤ 10
B	This level is assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	> 10 and ≤ 15	> 10 and ≤ 20
C	This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 15 and ≤ 25	> 20 and ≤ 35
D	This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	> 25 and ≤ 35	> 35 and ≤ 55
E	This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	> 35 and ≤ 50	> 55 and ≤ 80
F	This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 50	> 80

Source: *Highway Capacity Manual, 6<sup>th</sup> Edition*

#### 4.1 Existing Traffic Volumes

Existing traffic volumes are based on peak hour intersection turn movement counts collected by Counts Unlimited Inc. in May 2018. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), were conducted at the intersection of US-395/Bear Valley Road. Passenger car equivalent (PCE) volumes at this intersection was computed using a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. Based on discussion with City staff, a growth rate of 2 percent for three years (2018 to 2021) was applied to the 2018 traffic volumes to develop the existing 2021 peak hour traffic volumes. Count sheets are contained in Appendix A. Detailed volume development worksheets are included in Appendix B.

#### 4.2 Opening Year (2023) Traffic Volumes

Opening year (2023) peak hour traffic volumes were developed by applying an annual growth rate of 2 percent per year (2021 to 2023) to the existing volumes and adding cumulative project trips at each study intersection. The cumulative projects were determined from the Cities of Adelanto and Victorville development activity. Figure 6 shows the cumulative project locations. Table C lists the cumulative projects included in the analysis. The cumulative projects are anticipated to generate 2,549 a.m. peak hour trips, 3,639 p.m. peak hour trips, and 41,737 daily trips. Detailed volume development worksheets are included in Appendix B.

#### 4.3 Year 2033 Traffic Volumes

Year 2033 peak hour traffic volumes were developed by interpolating the 2012-2040 growth at study intersections based on the San Bernardino Traffic Analysis Model (SBTAM). Detailed volume development worksheets are included in Appendix B.



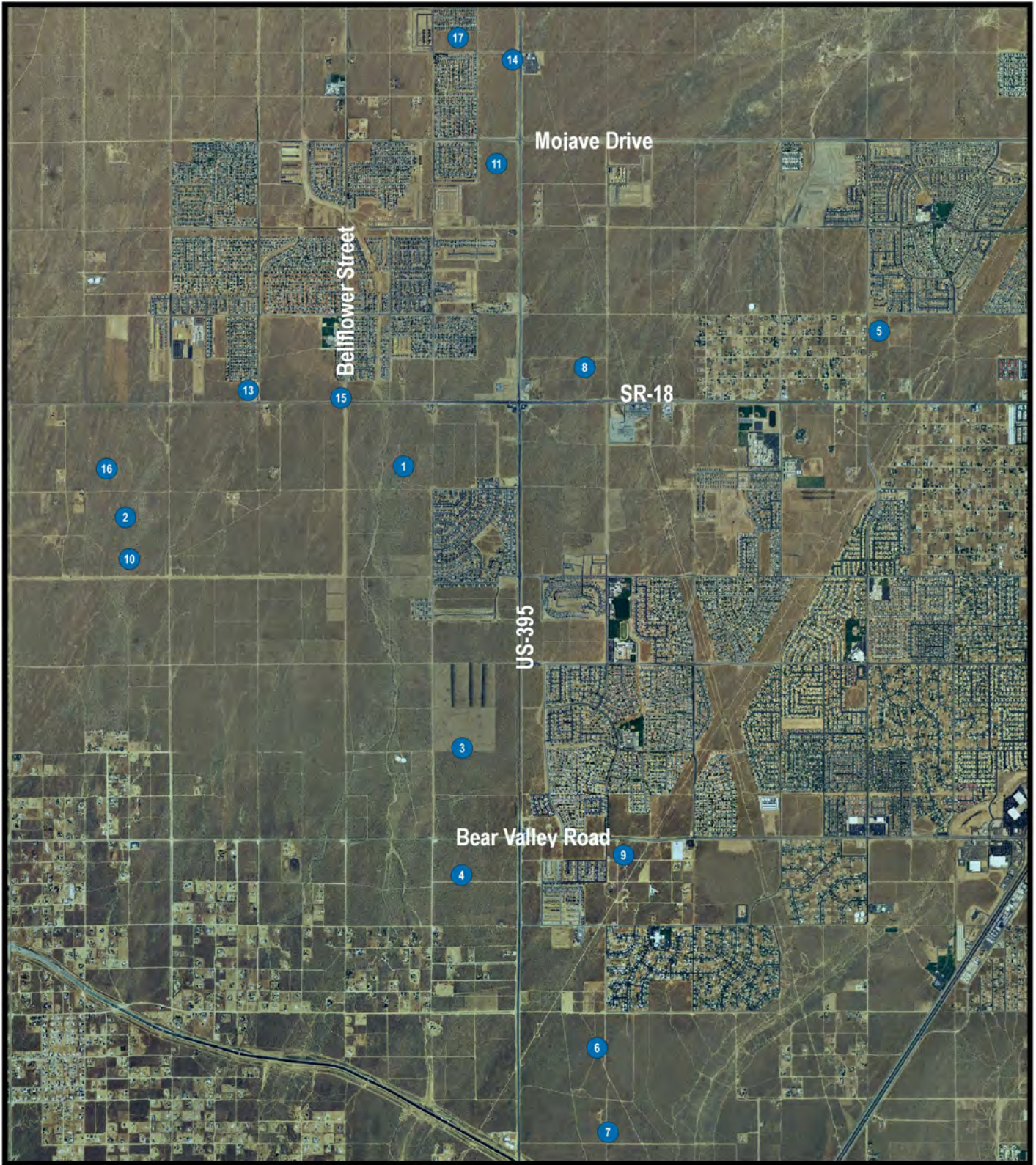


FIGURE 6

Legend

- Cumulative Project Locations

Monte Vista Road and Olivine Road Residential  
Cumulative Project Locations



**Table C - Cumulative Projects Trip Generation**

Project Number	Land Use	Quantity	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
				In	Out	Total	In	Out	Total	
1	Single-Family Residential Trip Generation Rates <sup>1</sup> Trip Generation	72	DU	- 14	- 41	- 54	- 45	- 27	- 72	- 685
2	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	196	DU	0.19 36	0.56 109	0.74 145	0.62 122	0.37 73	0.99 195	9.44 1,850
3	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	276	DU	0.19 51	0.56 153	0.74 204	0.62 172	0.37 102	0.99 274	9.44 2,605
4	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	298	DU	0.19 55	0.56 166	0.74 221	0.62 186	0.37 110	0.99 296	9.44 2,813
5	Storage Facility Trip Generation Rates <sup>3</sup> Trip Generation	52	TSF	0.06 3	0.04 2	0.10 5	0.08 4	0.09 5	0.17 9	1.51 78
6	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	342	DU	0.19 63	0.56 190	0.74 253	0.62 213	0.37 126	0.99 339	9.44 3,228
7	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	589	DU	0.19 109	0.56 327	0.74 436	0.62 367	0.37 217	0.99 584	9.44 5,560
8	Retail Trip Generation Rates <sup>4</sup> Trip Generation Pass-By Trips Total Net Trip Generation	46.8	TSF	0.58 27 0 27	0.36 17 0 17	0.94 44 0 44	1.83 86 (29) 57	1.98 93 (32) 61	3.81 179 (61) 118	37.75 1,766 (61) 1,705
9	Storage Facility Trip Generation Rates <sup>3</sup> Trip Generation	160 1.6	Units Per 100 Units	0.71 1	0.68 1	1.39 2	0.98 2	0.98 2	1.95 4	17.96 29
10	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	271	DU	0.19 50	0.56 151	0.74 201	0.62 169	0.37 100	0.99 269	9.44 2,558
11	Retail Trip Generation Rates <sup>4</sup> Trip Generation Pass-By Trips Total Net Trip Generation  Gas Station W/ Convenience Store Trip Generation Rates <sup>5</sup> Trip Generation Pass-By Trips Total Net Trip Generation	60.3    3.0	TSF    TSF	0.58 35 0 35  40.31 121 (75) 46	0.36 22 0 22  40.31 122 (76) 46	0.94 57 0 57  80.61 243 (151) 92	1.83 110 (37) 73  39.37 118 (66) 52	1.98 120 (41) 79  39.37 119 (67) 52	3.81 230 (78) 152  78.73 237 (133) 104	37.75 2,278 (78) 2,200  1056.59 3,180 (283) 2,897



**Table C - Cumulative Projects Trip Generation**

Project Number	Land Use	Quantity	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
				In	Out	Total	In	Out	Total	
12	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	116	DU	0.19 21	0.56 65	0.74 86	0.62 72	0.37 43	0.99 115	9.44 1,095
13	Retail Trip Generation Rates <sup>4</sup> Trip Generation Pass-By Trips Total Net Trip Generation	98.3	TSF	0.58 57 0 57	0.36 35 0 35	0.94 92 0 92	1.83 180 0 180	1.98 195 0 195	3.81 375 0 375	37.75 3,710 0 3,710
14	Retail/Fast-Food/Gas Station/Office Trip Generation Rates <sup>6</sup> Trip Generation	-	-	- 188	- 162	- 349	- 170	- 181	- 351	- 3,997
15	Gas Station W/ Convenience Store Trip Generation Rates <sup>5</sup> Trip Generation Pass-By Trips Total Net Trip Generation	4.9	TSF	40.31 197 (122) 75	40.31 198 (123) 75	80.61 395 (245) 150	39.37 193 (108) 85	39.37 193 (108) 85	78.73 386 (216) 170	1056.59 5,177 (461) 4,716
16	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	132	DU	0.19 24	0.56 74	0.74 98	0.62 82	0.37 49	0.99 131	9.44 1,246
17	Single-Family Residential Trip Generation Rates <sup>2</sup> Trip Generation	81	DU	0.19 15	0.56 45	0.74 60	0.62 51	0.37 30	0.99 81	9.44 765
<b>Trip Generation</b>				<b>870</b>	<b>1,682</b>	<b>2,549</b>	<b>2,101</b>	<b>1,538</b>	<b>3,639</b>	<b>41,737</b>

Notes: DU = Dwelling Units, TSF = Thousand Square Feet

<sup>1</sup> Trip Generation from "Victorville Residential Traffic Study" from Translutions (May 2017).

<sup>2</sup> Trip Generation based on rates for Land Use 210 - "Single-Family Detached Housing" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

<sup>3</sup> Trip Generation based on rates for Land Use 151 - "Mini-Warehouse" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

<sup>4</sup> Trip Generation based on rates for Land Use 820 - "Shopping Center" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition). Pass-by rates for p.m. peak hour from ITE *Trip Generation Handbook* (3rd Edition).

<sup>5</sup> Trip Generation based on rates for Land Use 945 - "Gasoline/Service Station with Convenience Market" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition). Pass-by rates for a.m. and p.m. peak hours from ITE *Trip Generation Handbook* (3rd Edition).

<sup>6</sup> Trip Generation from "Proposed Commercial Development Highway 395 and Cactus Road Traffic Study" from Hall and Foreman (August 2012).

#### 4.4 Existing, Opening Year (2023), and Year 2033 With Project Traffic Volumes

Traffic volumes for existing, opening year (2023), and year 2033 with project conditions were developed by adding the trip assignment to the corresponding (i.e. existing and opening year) without project peak hour traffic volumes.

#### 5.0 EXISTING CONDITIONS

This section discusses the existing transportation conditions in the study area.

#### 5.1 Existing Roadway Conditions

Regional access to the project site is provided by US-395 to the east and State Route 18 to the north. Local access to the project will be provided by the following roadways:

- **Monte Vista Road** is oriented in the north-south direction and is as a 2-lane roadway.
- **Bear Valley Road** is oriented in an east-west direction and is a 2-lane roadway from Monte Vista Road to Mesa View Drive.
- **US-395** is oriented in a north-south direction and is 2-lane roadway north of Bear Valley Road and a 4-lane roadway south of Bear Valley Road.

#### 5.2 Existing Transit Service

Public transportation services within the City of Victorville and near the proposed project include bus transit service provided by the Victor Valley Transit Authority. The bus service is further described below.

**Bus Service.** Bus service in the vicinity of the project is provided by Route 21 and travels along Bear Valley Road and Baldy Mesa Road. Route 21 operates at 60-minute headways on weekdays and weekends.

#### 5.3 Existing Pedestrian & Bicycle Facilities

The City's bikeway network includes three types of facilities and are discussed below:

- **Class I bikeways** also known as "bike paths", provide a complete separate right-of-way designated for exclusive use of bicycles and pedestrians with minimum cross flows by motorists. They are shared use paths that may be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.
- **Class II bikeways** also known as "bike lanes", provide a restricted right-of-way designated for exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with permitted vehicle parking and cross flows by pedestrians and motorists. This portion of roadway is designated by striping, signing, pavement delineation, and pavement markings for preferential or exclusive use of bicyclists.
- **Class III bikeways** also known as "bike routes", provide a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists.

The project site is currently vacant, with no bike lanes on the adjacent streets. Pedestrian circulation in Victorville is primarily provided via sidewalks. There are no sidewalks on either side of Monte Vista Road near the project area.

#### 5.4 Existing Intersections Levels of Service

An intersection level of service analysis was conducted for existing conditions to determine current circulation system performance. Figure 7 shows the lane geometrics and stop controls at the study intersections. The existing traffic volumes at study intersections are illustrated in Figure 8. Detailed volume development worksheets are included in Appendix B. The existing levels of service for the study area intersections are summarized in Table D. Level of service calculation worksheets are contained in Appendix C. As shown in Table D, all study area intersections are currently operating at satisfactory levels of service with the exception of Monte Vista Road and Bear Valley Road in the a.m. peak hour.

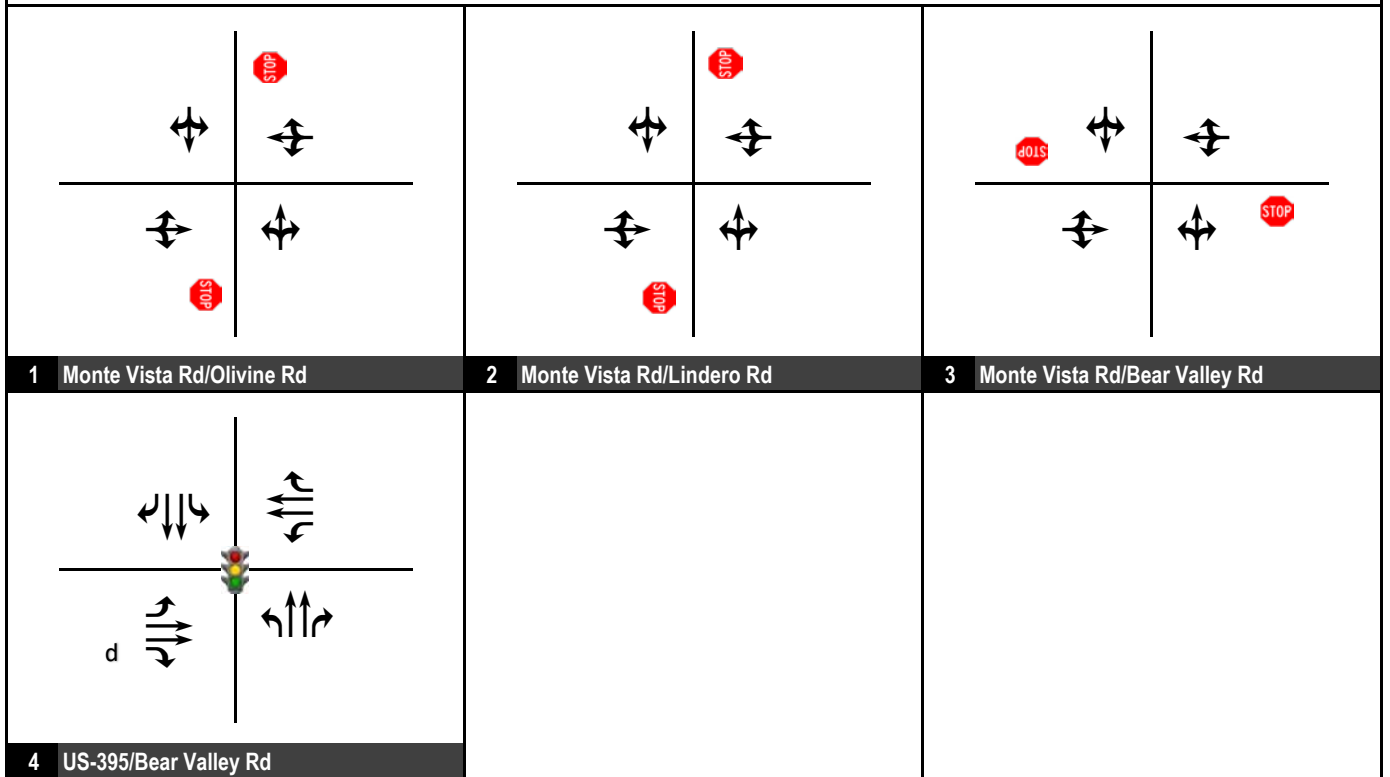
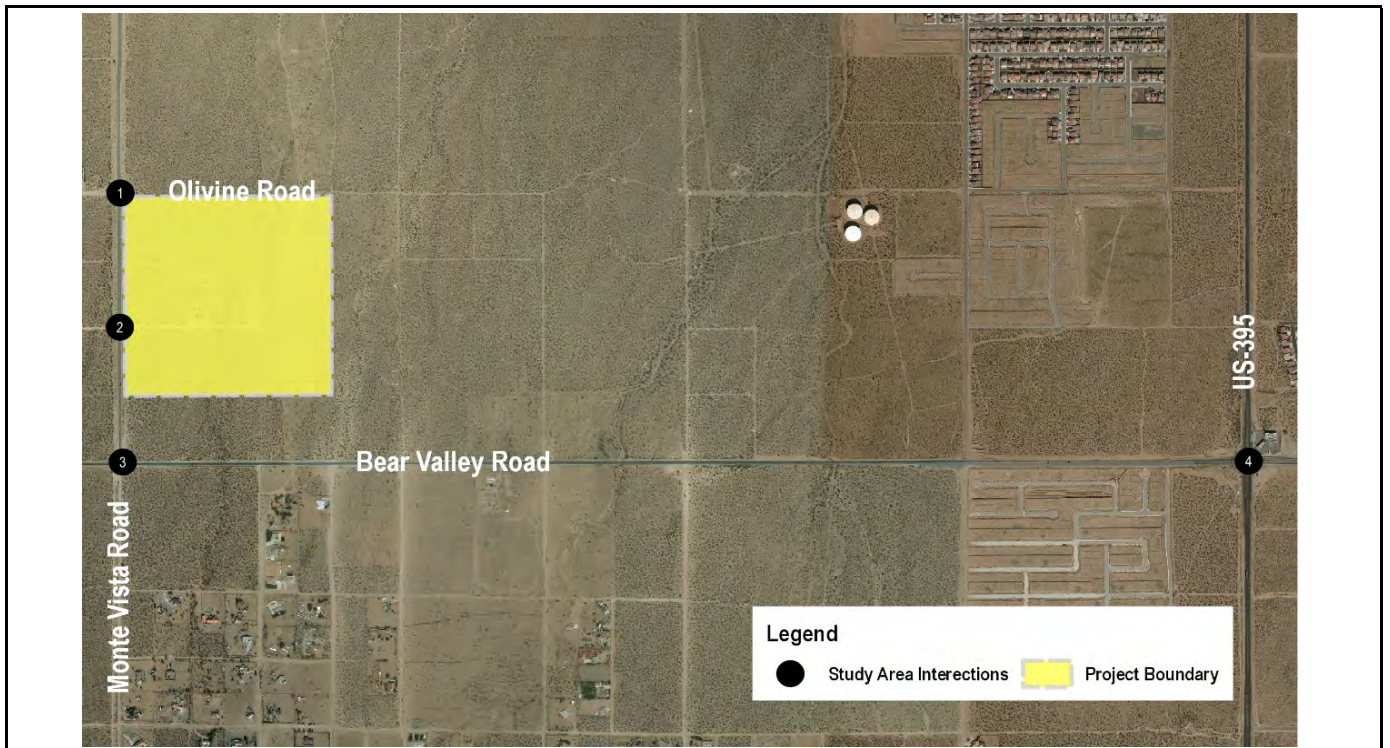


FIGURE 7

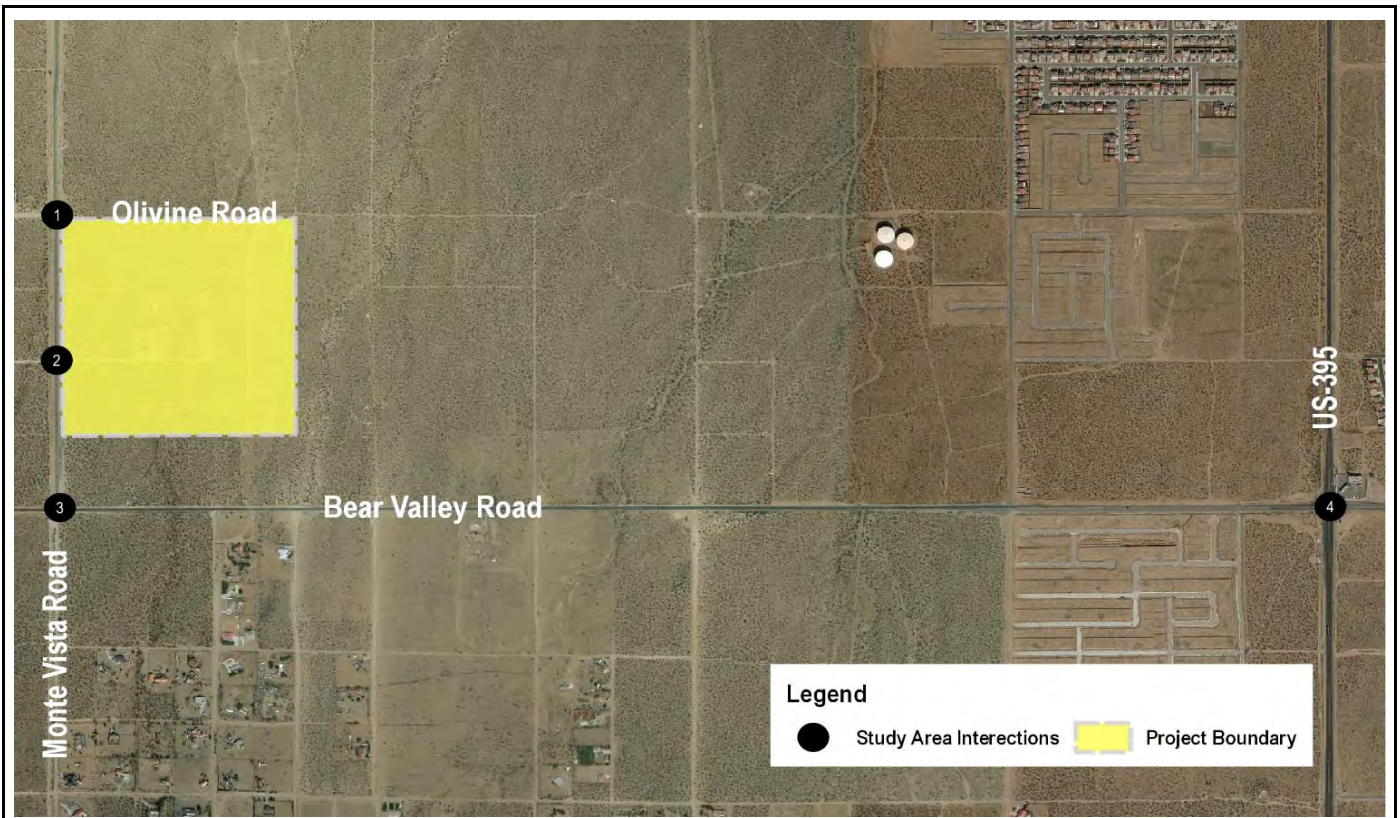
Legend

-  Signal
-  Stop Sign

Monte Vista Road and Olivine Road Residential Development  
Intersection Lane Geometrics and Stop Control







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<b>4 US-395/Bear Valley Rd</b>																																																						

FIGURE 8

XXXX / YYYY AM / PM Peak Hour Traffic Volumes

**Monte Vista Road and Olivine Road Residential Development  
Existing Peak Hour Traffic Volumes**



**Table D: Existing Levels of Service**

Intersection	LOS Std.	Control	Without Project				With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 . Monte Vista Road/Olivine Road	D	TWSC	10.4	B	10.4	B	14.2	B	13.1	B
2 . Monte Vista Road/Lindero Road	D	TWSC		A	9.6	A	13.8	B	13.1	B
3 . Monte Vista Road/Bear Valley Road	D	TWSC	81.3	F *	26.9	D	>100	F *	50.1	F *
4 . US-395/Bear Valley Road	D	Signal	27.2	C	28.4	C	28.4	C	29.7	C

**Notes:**

\* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

LOS = Level of Service

## 5.5 Existing With Project Intersections Levels of Service

An intersection level of service analysis was conducted for existing with project conditions to determine circulation system performance. Existing with project traffic volumes at study intersections are shown in [Figure 9](#). The existing with project levels of service for the study area intersections are summarized in [Table D](#). Level of service calculation worksheets are contained in Appendix C. As shown in [Table D](#), all study area intersections are forecast to operate at satisfactory levels of service with the exception of Monte Vista Road and Bear Valley Road in the a.m. and p.m. peak hours.

## 6.0 OPENING YEAR (2023) CONDITIONS

This section discusses opening year (2020) transportation conditions in the study area. It is anticipated that the project will open in 2020.

### 6.1 Opening Year (2023) Roadway Conditions

Opening year (2023) roadway conditions are assumed to be the same as those under existing conditions.

### 6.2 Opening Year (2023) Transit Service

Transit service under opening year (2023) conditions are anticipated to remain the same as under existing conditions.

### 6.3 Opening Year (2023) Pedestrian & Bicycle Facilities

Pedestrian and bicycle facilities under opening year (2023) conditions are anticipated to remain the same as under existing conditions.

### 6.4 Opening Year (2023) Intersections Levels of Service

An intersection level of service analysis was conducted for opening year (2023) conditions to determine circulation system performance. Opening year (2023) traffic volumes at study intersections are shown in [Figure 10](#). Opening year (2023) levels of service for the study area intersections are summarized in [Table E](#). Detailed volume development worksheets are included in Appendix B. Level of service calculation worksheets are contained in Appendix C. As shown in [Table E](#), all study area intersections are currently operating at satisfactory levels of service with the exception of Monte Vista Road and Bear Valley Road in the a.m. and p.m. peak hours.

### 6.5 Opening Year (2023) With Project Intersections Levels of Service

An intersection level of service analysis was conducted for opening year (2023) with project conditions to determine circulation system performance. Opening year (2023) with project traffic volumes at study intersections are shown in [Figure 11](#). The opening year (2023) with project levels of service for the study area intersections are summarized in [Table E](#). Level of service calculation worksheets are contained in Appendix C. As shown in [Table E](#), all study area intersections are forecast to operate at satisfactory levels of service with the exception of Monte Vista Road and Bear Valley Road in the a.m. and p.m. peak hours.

## 7.0 YEAR 2033 CONDITIONS

This section discusses year 2030 transportation conditions in the study area.

### 7.1 Year 2033 Roadway Conditions

Year 2033 roadway conditions are assumed to be the same as those under existing conditions.

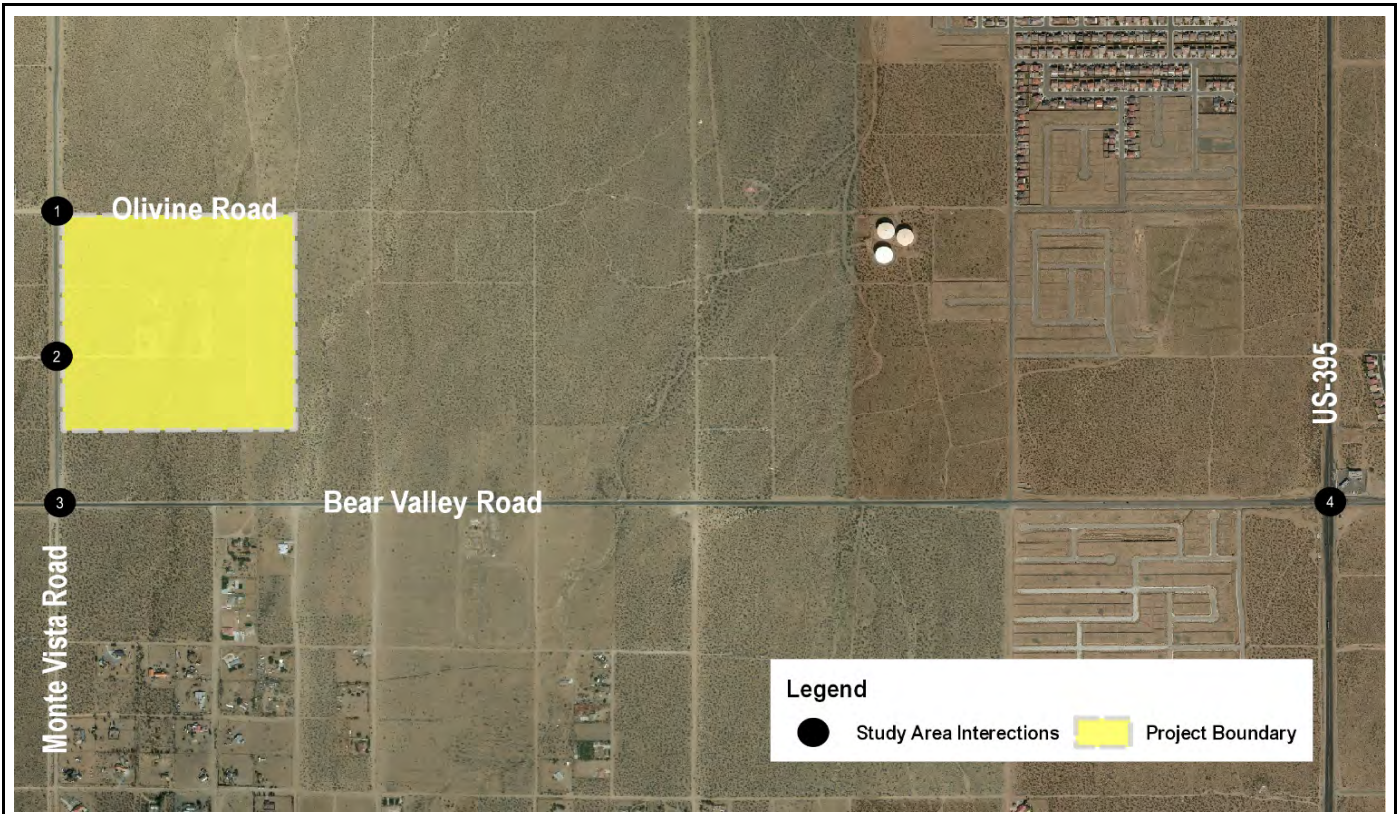
### 7.2 Year 2033 Transit Service

Transit services under year 2033 conditions are anticipated to remain the same as under existing conditions.

### 7.3 Year 2033 Pedestrian & Bicycle Facilities

Pedestrian and bicycle facilities under year 2033 conditions are anticipated to remain the same as under existing conditions.





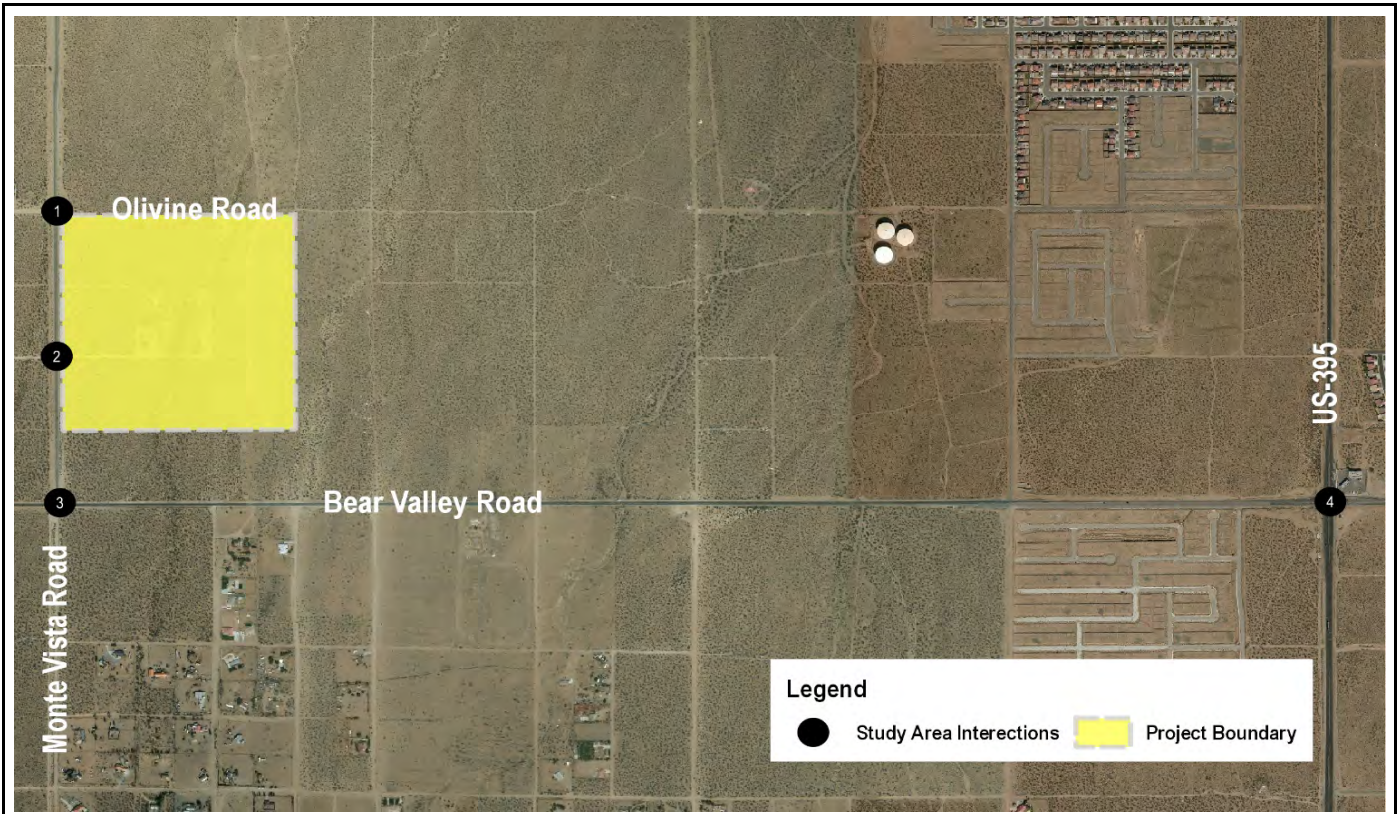
<table border="1"> <tr> <td>↖ 2 / 2</td> <td>↘ 248 / 248</td> <td>↙ 4 / 4</td> <td>↗ 13 / 13</td> </tr> <tr> <td>↖ 1 / 1</td> <td>↘ 7 / 7</td> <td>↙ 1 / 1</td> <td>↗ 43 / 43</td> </tr> <tr> <td>↖ 1 / 1</td> <td>↘ 208 / 208</td> <td>↙ 14 / 14</td> <td>↗ 208 / 208</td> </tr> </table>	↖ 2 / 2	↘ 248 / 248	↙ 4 / 4	↗ 13 / 13	↖ 1 / 1	↘ 7 / 7	↙ 1 / 1	↗ 43 / 43	↖ 1 / 1	↘ 208 / 208	↙ 14 / 14	↗ 208 / 208	<table border="1"> <tr> <td>↖ 294 / 294</td> <td>↘ 5 / 5</td> <td>↙ 16 / 16</td> <td>↗ 36 / 36</td> </tr> <tr> <td>↖ 216 / 216</td> <td>↘ 12 / 12</td> <td>↙ 1 / 1</td> <td>↗ 2 / 2</td> </tr> </table>	↖ 294 / 294	↘ 5 / 5	↙ 16 / 16	↗ 36 / 36	↖ 216 / 216	↘ 12 / 12	↙ 1 / 1	↗ 2 / 2	<table border="1"> <tr> <td>↖ 79 / 79</td> <td>↘ 1 / 1</td> <td>↙ 240 / 240</td> <td>↗ 148 / 148</td> </tr> <tr> <td>↖ 76 / 76</td> <td>↘ 219 / 219</td> <td>↙ 1 / 1</td> <td>↗ 227 / 227</td> </tr> <tr> <td>↖ 1 / 1</td> <td>↘ 1 / 1</td> <td>↙ 1 / 1</td> <td>↗ 2 / 2</td> </tr> </table>	↖ 79 / 79	↘ 1 / 1	↙ 240 / 240	↗ 148 / 148	↖ 76 / 76	↘ 219 / 219	↙ 1 / 1	↗ 227 / 227	↖ 1 / 1	↘ 1 / 1	↙ 1 / 1	↗ 2 / 2
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<table border="1"> <tr> <td>↖ 30 / 30</td> <td>↘ 725 / 725</td> <td>↙ 117 / 117</td> <td>↗ 101 / 101</td> </tr> <tr> <td>↖ 53 / 53</td> <td>↘ 286 / 286</td> <td>↙ 170 / 170</td> <td>↗ 214 / 214</td> </tr> <tr> <td>↖ 108 / 108</td> <td>↘ 563 / 563</td> <td>↙ 78 / 78</td> <td>↗ 150 / 150</td> </tr> </table>	↖ 30 / 30	↘ 725 / 725	↙ 117 / 117	↗ 101 / 101	↖ 53 / 53	↘ 286 / 286	↙ 170 / 170	↗ 214 / 214	↖ 108 / 108	↘ 563 / 563	↙ 78 / 78	↗ 150 / 150																						
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↖ 53 / 53	↘ 286 / 286	↙ 170 / 170	↗ 214 / 214																															
↖ 108 / 108	↘ 563 / 563	↙ 78 / 78	↗ 150 / 150																															
<p><b>4 US-395/Bear Valley Rd</b></p>																																		

**FIGURE 9**

XXXX / YYYY AM / PM Peak Hour Traffic Volumes

**Monte Vista Road and Olivine Road Residential Development  
Existing With Project Peak Hour Traffic Volumes**





<table border="1"> <tr> <td>↑ 2/7</td> <td>← 385 / 305</td> <td></td> <td></td> </tr> <tr> <td>1/3</td> <td>↘ 7/7</td> <td>↗ 1/1</td> <td>→ 251 / 325</td> </tr> </table>	↑ 2/7	← 385 / 305			1/3	↘ 7/7	↗ 1/1	→ 251 / 325	<table border="1"> <tr> <td>↑ 0/1</td> <td>← 394 / 327</td> <td></td> <td></td> </tr> <tr> <td>0/1</td> <td>↘</td> <td>↗ 0/1</td> <td>→ 262 / 333</td> </tr> </table>	↑ 0/1	← 394 / 327			0/1	↘	↗ 0/1	→ 262 / 333	<table border="1"> <tr> <td>↑ 81 / 72</td> <td>← 1 / 1</td> <td>↘ 301 / 258</td> <td>↗ 175 / 264</td> </tr> <tr> <td>81 / 47</td> <td>↘ 241 / 228</td> <td>↗ 1 / 0</td> <td>→ 251 / 239</td> </tr> <tr> <td>1 / 1</td> <td>↘</td> <td>↗ 1 / 0</td> <td>↘ 0 / 4</td> </tr> <tr> <td></td> <td></td> <td></td> <td>↗ 2 / 1</td> </tr> </table>	↑ 81 / 72	← 1 / 1	↘ 301 / 258	↗ 175 / 264	81 / 47	↘ 241 / 228	↗ 1 / 0	→ 251 / 239	1 / 1	↘	↗ 1 / 0	↘ 0 / 4				↗ 2 / 1
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<b>4 US-395/Bear Valley Rd</b>																																		

FIGURE 10

XXXX / YYYY AM / PM Peak Hour Traffic Volumes

**Monte Vista Road and Olivine Road Residential Development  
Opening Year (2023) Peak Hour Traffic Volumes**





**Table E: Opening Year (2023) Levels of Service**

Intersection	LOS Std.	Control	Without Project				With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 . Monte Vista Road/Olivine Road	D	TWSC	11.7	B	11.8	B	18	C	17.1	C
2 . Monte Vista Road/Lindero Road	D	TWSC		A	10.2	B	17.1	C	16.8	C
3 . Monte Vista Road/Bear Valley Road	D	TWSC	>100	F *	92.8	F *	>100	F *	>100	F *
4 . US-395/Bear Valley Road	D	Signal	42.1	D	50.4	D	43.3	D	54.3	D

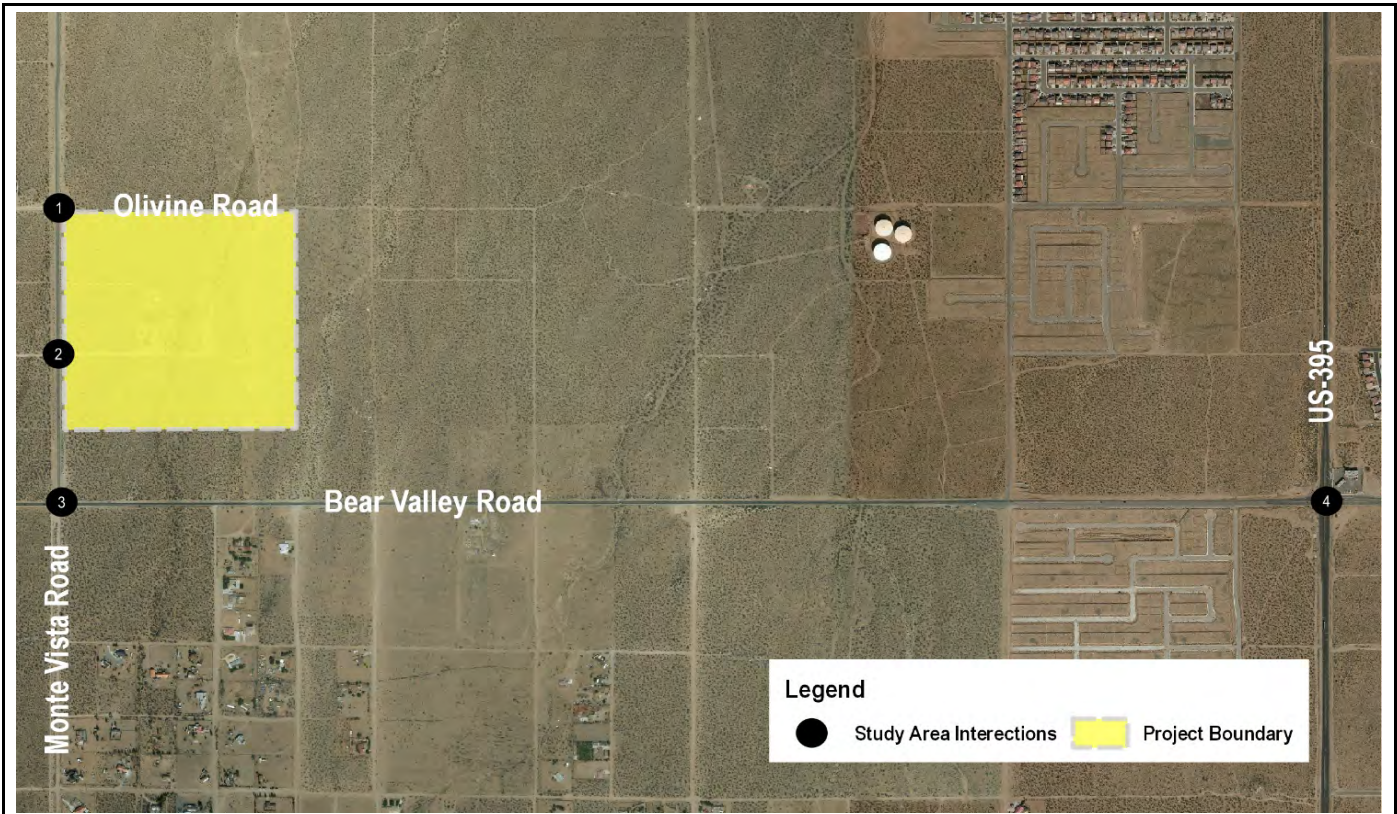
**Notes:**

\* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

LOS = Level of Service





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↖ 188 / 452	↘ 686 / 1021	↙ 159 / 254	↗ 189 / 196																																							
<p><b>4 US-395/Bear Valley Rd</b></p>																																										

**FIGURE 11**

XXXX / YYYY AM / PM Peak Hour Traffic Volumes

**Monte Vista Road and Olivine Road Residential Development  
Opening Year (2023) With Project Peak Hour Traffic Volumes**



## 7.4 Year 2033 Intersections Levels of Service

An intersection level of service analysis was conducted for year 2033 conditions to determine circulation system performance. Year 2033 traffic volumes at study intersections are shown in [Figure 12](#). Year 2033 levels of service for the study area intersections are summarized in [Table F](#). Detailed volume development worksheets are included in Appendix B. Level of service calculation worksheets are contained in Appendix C. As shown in [Table F](#), all study area intersections are currently operating at satisfactory levels of service with the exception of the following:

- Monte Vista Road/Bear Valley Road: a.m. and p.m. peak hours.
- US-395/Bear Valley Road: p.m. peak hour.

## 7.5 Year 2033 With Project Intersections Levels of Service

An intersection level of service analysis was conducted for year 2033 with project conditions to determine circulation system performance. Year 2033 with project traffic volumes at study intersections are shown in [Figure 13](#). The year 2033 with project levels of service for the study area intersections are summarized in [Table F](#). Level of service calculation worksheets are contained in Appendix C. As shown in [Table F](#), all study area intersections are forecast to operate at satisfactory levels of service with the exception of the following:

- Monte Vista Road/Bear Valley Road: a.m. and p.m. peak hours.
- US-395/Bear Valley Road: p.m. peak hour.

## 8.0 CIRCULATION IMPROVEMENTS

The CMP requires that circulation improvements be recommended at any intersection which operates at unsatisfactory level of service. For intersections that meet a jurisdiction's minimum level of service standard under existing conditions, circulation improvements must maintain conformance with that standard. For intersections that fail to meet a jurisdiction's minimum level of service standard under existing conditions, circulation improvements must maintain the existing level of service. These include conversion of stop control, signalization, changes to signal phasing, and/or addition of lanes as appropriate.

### 8.1 Existing With Project Circulation Improvements

Under existing with project conditions, one intersection will not meet the relevant jurisdiction's minimum level of service standard. Modifications to intersection configurations are recommended as mitigation measures in accord with CMP requirements as follows:

3. Monte Vista Road/Bear Valley Road – Install an all-way stop control. This improvement is not included in the 2016 SBCTA Development Mitigation Nexus Study, therefore, the project's fair share has been calculated and included in Appendix E. The fair share is calculated based on the opening year ratio of project trips to total trips on Monte Vista Road. The project fair share at this intersection is 38.05%.

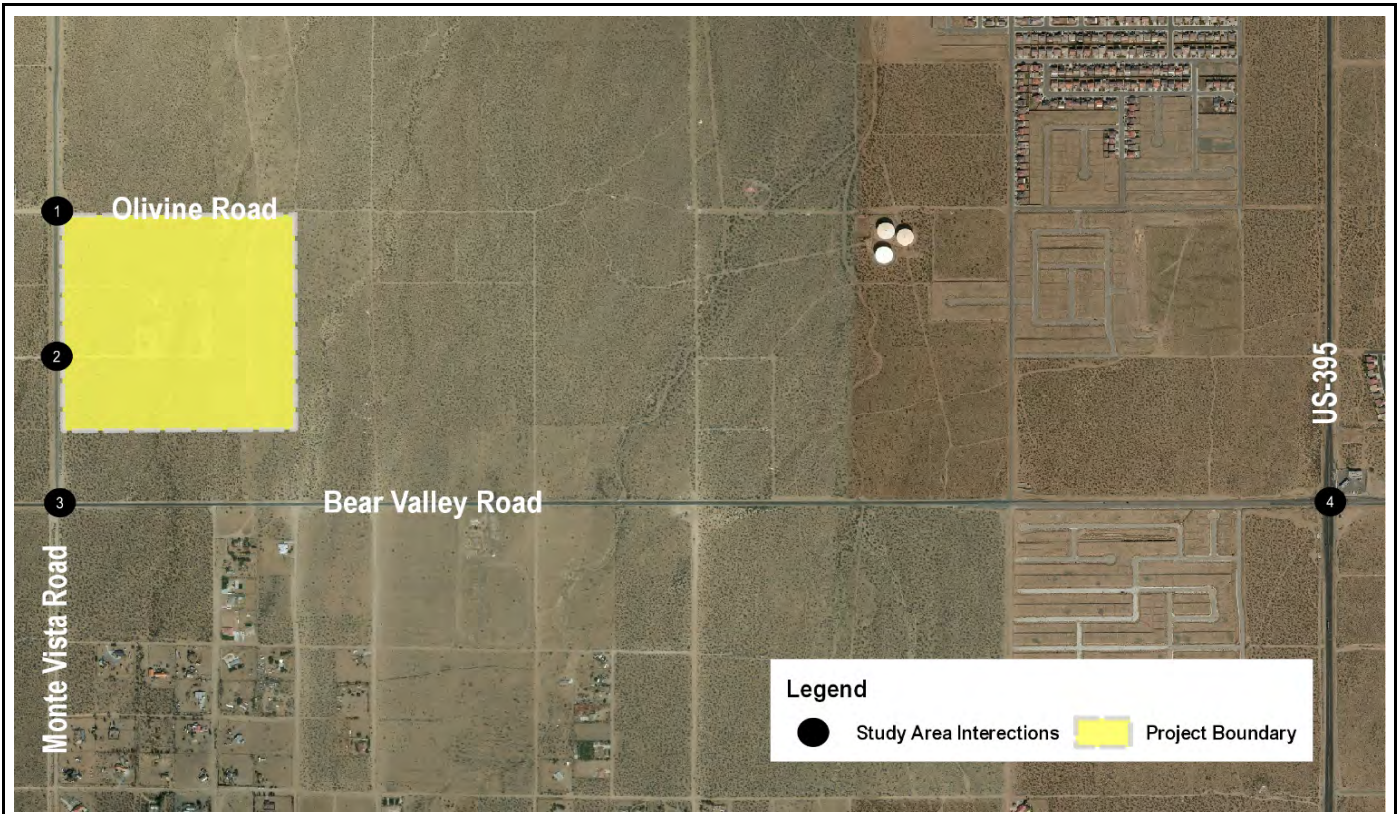
Construction of these improvements will restore satisfactory operations. [Table G](#) shows the resulting levels of service and [Figure 14](#) illustrates the existing with project recommended improvements.

### 8.2 Opening Year (2023) With Project Circulation Improvements

Under opening year (2023) with project conditions, one intersection will not meet the relevant jurisdiction's minimum level of service standard. Modifications to intersection configurations are recommended as mitigation measures in accord with CMP requirements as follows:

3. Monte Vista Road/Bear Valley Road – Install an all-way stop control. Add a southbound left-turn lane. Add a westbound right-turn lane. These improvements are not included in the 2016 SBCTA Development Mitigation Nexus Study, therefore, the project's fair share has been calculated and included in Appendix E. The fair share is





<table border="1"> <tr> <td>↖ 6/7</td> <td>↘ 393/361</td> <td>↙ 11/6</td> <td>↗ 3/15</td> </tr> <tr> <td>↖ 3/9</td> <td>↘ 5/4</td> <td>↙ 13/19</td> <td>↗ 3/8</td> </tr> <tr> <td>↖ 18/13</td> <td>↘ 300/366</td> <td>↙ 6/4</td> <td>↗ 4/6</td> </tr> </table>	↖ 6/7	↘ 393/361	↙ 11/6	↗ 3/15	↖ 3/9	↘ 5/4	↙ 13/19	↗ 3/8	↖ 18/13	↘ 300/366	↙ 6/4	↗ 4/6	<table border="1"> <tr> <td>↖ 2/2</td> <td>↘ 401/388</td> <td>↙ 1/3</td> <td>↗ 3/6</td> </tr> <tr> <td>↖ 6/6</td> <td>↘ 331/381</td> <td>↙ 6/6</td> <td>↗ 6/6</td> </tr> </table>	↖ 2/2	↘ 401/388	↙ 1/3	↗ 3/6	↖ 6/6	↘ 331/381	↙ 6/6	↗ 6/6	<table border="1"> <tr> <td>↖ 83/74</td> <td>↘ 13/26</td> <td>↙ 315/331</td> <td>↗ 234/302</td> </tr> <tr> <td>↖ 83/48</td> <td>↘ 296/289</td> <td>↙ 2/3</td> <td>↗ 325/294</td> </tr> <tr> <td>↖ 3/2</td> <td>↘ 21/15</td> <td>↙ 3/6</td> <td>↗ 2/8</td> </tr> </table>	↖ 83/74	↘ 13/26	↙ 315/331	↗ 234/302	↖ 83/48	↘ 296/289	↙ 2/3	↗ 325/294	↖ 3/2	↘ 21/15	↙ 3/6	↗ 2/8
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↖ 3/2	↘ 21/15	↙ 3/6	↗ 2/8																															
<b>1 Monte Vista Rd/Olivine Rd</b>	<b>2 Monte Vista Rd/Lindero Rd</b>	<b>3 Monte Vista Rd/Bear Valley Rd</b>																																
<table border="1"> <tr> <td>↖ 75/194</td> <td>↘ 1311/1306</td> <td>↙ 147/220</td> <td>↗ 157/178</td> </tr> <tr> <td>↖ 186/135</td> <td>↘ 410/516</td> <td>↙ 394/312</td> <td>↗ 422/485</td> </tr> <tr> <td>↖ 243/452</td> <td>↘ 954/1502</td> <td>↙ 164/259</td> <td>↗ 234/202</td> </tr> </table>	↖ 75/194	↘ 1311/1306	↙ 147/220	↗ 157/178	↖ 186/135	↘ 410/516	↙ 394/312	↗ 422/485	↖ 243/452	↘ 954/1502	↙ 164/259	↗ 234/202																						
↖ 75/194	↘ 1311/1306	↙ 147/220	↗ 157/178																															
↖ 186/135	↘ 410/516	↙ 394/312	↗ 422/485																															
↖ 243/452	↘ 954/1502	↙ 164/259	↗ 234/202																															
<b>4 US-395/Bear Valley Rd</b>																																		

FIGURE 12

XXXX / YYYY AM / PM Peak Hour Traffic Volumes

Monte Vista Road and Olivine Road Residential Development  
Year 2033 Peak Hour Traffic Volumes





**Table F: Year 2033 Levels of Service**

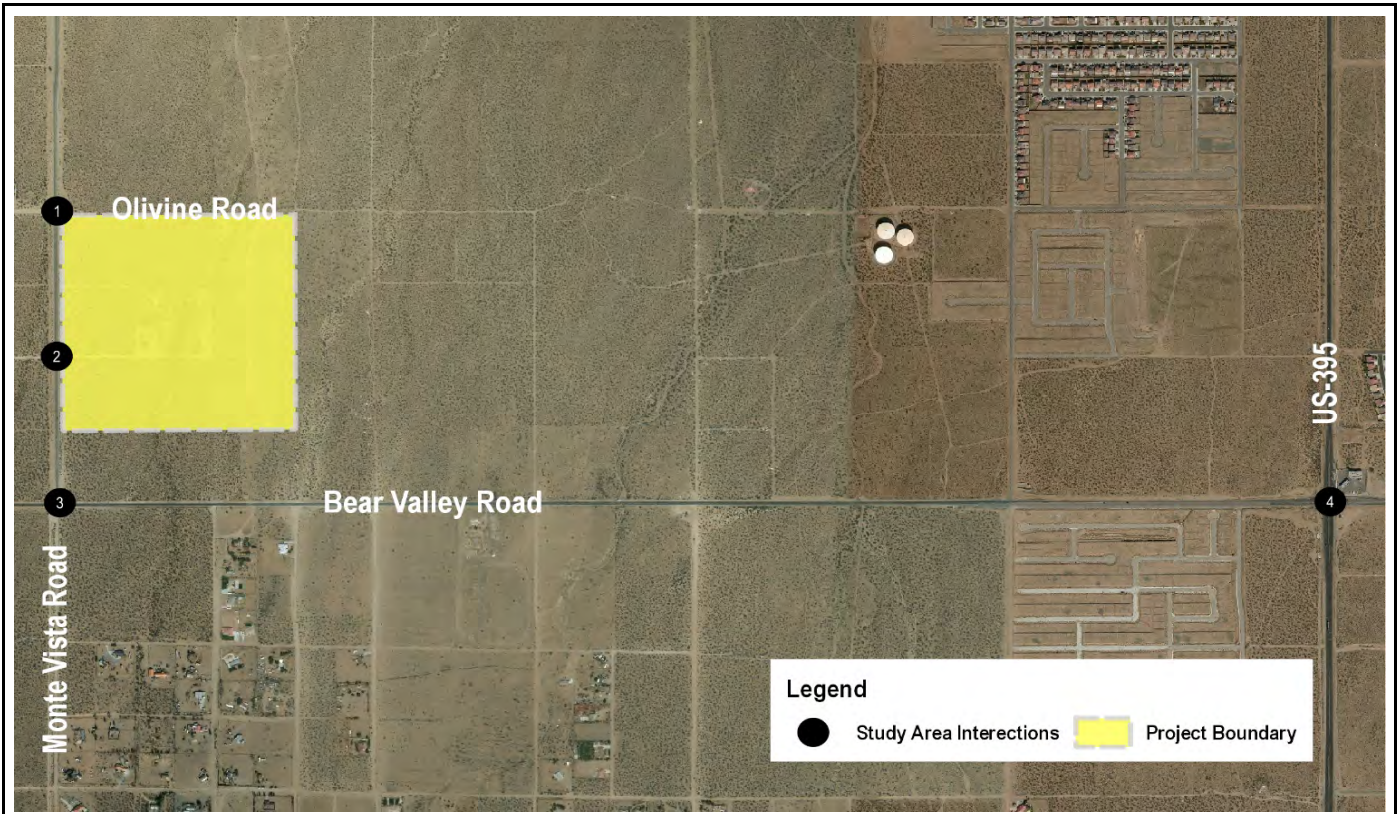
Intersection	LOS Std.	Control	Without Project				With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 . Monte Vista Road/Olivine Road	D	TWSC	15.4	C	14.4	B	19.6	C	19.6	C
2 . Monte Vista Road/Lindero Road	D	TWSC	12.2	B	13	B	17.8	C	19.4	C
3 . Monte Vista Road/Bear Valley Road	D	TWSC	>100	F *	>100	F *	>100	F *	>100	F *
4 . US-395/Bear Valley Road	D	Signal	51.4	D	61.5	E *	54.1	D	65.5	E *

**Notes:**

\* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

LOS = Level of Service



<table border="1"> <tr> <td>↖ 6 / 7</td> <td>↘ 398 / 379</td> <td>↙ 15 / 21</td> <td>↗ 16 / 24</td> </tr> <tr> <td>↖ 3 / 9</td> <td>↘ 5 / 4</td> <td>↙ 13 / 19</td> <td>↗ 47 / 34</td> </tr> <tr> <td>↖ 18 / 13</td> <td>↘ 316 / 377</td> <td>↙ 20 / 52</td> <td>↗ 3 / 8</td> </tr> <tr> <td>↖ 2 / 2</td> <td>↘ 444 / 416</td> <td>↙ 5 / 18</td> <td>↗ 36 / 23</td> </tr> <tr> <td>↖ 1 / 3</td> <td>↘ 3 / 6</td> <td>↙ 6 / 6</td> <td>↗ 16 / 11</td> </tr> <tr> <td>↖ 345 / 429</td> <td>↘ 12 / 40</td> <td>↙ 3 / 2</td> <td>↗ 258 / 384</td> </tr> <tr> <td>↖ 88 / 78</td> <td>↘ 13 / 26</td> <td>↙ 388 / 379</td> <td>↗ 325 / 294</td> </tr> <tr> <td>↖ 85 / 54</td> <td>↘ 296 / 289</td> <td>↙ 2 / 3</td> <td>↗ 2 / 8</td> </tr> <tr> <td>↖ 207 / 148</td> <td>↘ 439 / 535</td> <td>↙ 423 / 331</td> <td>↗ 3 / 6</td> </tr> <tr> <td>↖ 253 / 485</td> <td>↘ 954 / 1502</td> <td>↙ 164 / 259</td> <td></td> </tr> </table>	↖ 6 / 7	↘ 398 / 379	↙ 15 / 21	↗ 16 / 24	↖ 3 / 9	↘ 5 / 4	↙ 13 / 19	↗ 47 / 34	↖ 18 / 13	↘ 316 / 377	↙ 20 / 52	↗ 3 / 8	↖ 2 / 2	↘ 444 / 416	↙ 5 / 18	↗ 36 / 23	↖ 1 / 3	↘ 3 / 6	↙ 6 / 6	↗ 16 / 11	↖ 345 / 429	↘ 12 / 40	↙ 3 / 2	↗ 258 / 384	↖ 88 / 78	↘ 13 / 26	↙ 388 / 379	↗ 325 / 294	↖ 85 / 54	↘ 296 / 289	↙ 2 / 3	↗ 2 / 8	↖ 207 / 148	↘ 439 / 535	↙ 423 / 331	↗ 3 / 6	↖ 253 / 485	↘ 954 / 1502	↙ 164 / 259		<table border="1"> <tr> <td>↖ 6 / 7</td> <td>↘ 398 / 379</td> <td>↙ 15 / 21</td> <td>↗ 16 / 24</td> </tr> <tr> <td>↖ 3 / 9</td> <td>↘ 5 / 4</td> <td>↙ 13 / 19</td> <td>↗ 47 / 34</td> </tr> <tr> <td>↖ 18 / 13</td> <td>↘ 316 / 377</td> <td>↙ 20 / 52</td> <td>↗ 3 / 8</td> </tr> <tr> <td>↖ 2 / 2</td> <td>↘ 444 / 416</td> <td>↙ 5 / 18</td> <td>↗ 36 / 23</td> </tr> <tr> <td>↖ 1 / 3</td> <td>↘ 3 / 6</td> <td>↙ 6 / 6</td> <td>↗ 16 / 11</td> </tr> <tr> <td>↖ 345 / 429</td> <td>↘ 12 / 40</td> <td>↙ 3 / 2</td> <td>↗ 258 / 384</td> </tr> <tr> <td>↖ 88 / 78</td> <td>↘ 13 / 26</td> <td>↙ 388 / 379</td> <td>↗ 325 / 294</td> </tr> <tr> <td>↖ 85 / 54</td> <td>↘ 296 / 289</td> <td>↙ 2 / 3</td> <td>↗ 2 / 8</td> </tr> <tr> <td>↖ 207 / 148</td> <td>↘ 439 / 535</td> <td>↙ 423 / 331</td> <td>↗ 3 / 6</td> </tr> <tr> <td>↖ 253 / 485</td> <td>↘ 954 / 1502</td> <td>↙ 164 / 259</td> <td></td> </tr> </table>	↖ 6 / 7	↘ 398 / 379	↙ 15 / 21	↗ 16 / 24	↖ 3 / 9	↘ 5 / 4	↙ 13 / 19	↗ 47 / 34	↖ 18 / 13	↘ 316 / 377	↙ 20 / 52	↗ 3 / 8	↖ 2 / 2	↘ 444 / 416	↙ 5 / 18	↗ 36 / 23	↖ 1 / 3	↘ 3 / 6	↙ 6 / 6	↗ 16 / 11	↖ 345 / 429	↘ 12 / 40	↙ 3 / 2	↗ 258 / 384	↖ 88 / 78	↘ 13 / 26	↙ 388 / 379	↗ 325 / 294	↖ 85 / 54	↘ 296 / 289	↙ 2 / 3	↗ 2 / 8	↖ 207 / 148	↘ 439 / 535	↙ 423 / 331	↗ 3 / 6	↖ 253 / 485	↘ 954 / 1502	↙ 164 / 259		<table border="1"> <tr> <td>↖ 6 / 7</td> <td>↘ 398 / 379</td> <td>↙ 15 / 21</td> <td>↗ 16 / 24</td> </tr> <tr> <td>↖ 3 / 9</td> <td>↘ 5 / 4</td> <td>↙ 13 / 19</td> <td>↗ 47 / 34</td> </tr> <tr> <td>↖ 18 / 13</td> <td>↘ 316 / 377</td> <td>↙ 20 / 52</td> <td>↗ 3 / 8</td> </tr> <tr> <td>↖ 2 / 2</td> <td>↘ 444 / 416</td> <td>↙ 5 / 18</td> <td>↗ 36 / 23</td> </tr> <tr> <td>↖ 1 / 3</td> <td>↘ 3 / 6</td> <td>↙ 6 / 6</td> <td>↗ 16 / 11</td> </tr> <tr> <td>↖ 345 / 429</td> <td>↘ 12 / 40</td> <td>↙ 3 / 2</td> <td>↗ 258 / 384</td> </tr> <tr> <td>↖ 88 / 78</td> <td>↘ 13 / 26</td> <td>↙ 388 / 379</td> <td>↗ 325 / 294</td> </tr> <tr> <td>↖ 85 / 54</td> <td>↘ 296 / 289</td> <td>↙ 2 / 3</td> <td>↗ 2 / 8</td> </tr> <tr> <td>↖ 207 / 148</td> <td>↘ 439 / 535</td> <td>↙ 423 / 331</td> <td>↗ 3 / 6</td> </tr> <tr> <td>↖ 253 / 485</td> <td>↘ 954 / 1502</td> <td>↙ 164 / 259</td> <td></td> </tr> </table>	↖ 6 / 7	↘ 398 / 379	↙ 15 / 21	↗ 16 / 24	↖ 3 / 9	↘ 5 / 4	↙ 13 / 19	↗ 47 / 34	↖ 18 / 13	↘ 316 / 377	↙ 20 / 52	↗ 3 / 8	↖ 2 / 2	↘ 444 / 416	↙ 5 / 18	↗ 36 / 23	↖ 1 / 3	↘ 3 / 6	↙ 6 / 6	↗ 16 / 11	↖ 345 / 429	↘ 12 / 40	↙ 3 / 2	↗ 258 / 384	↖ 88 / 78	↘ 13 / 26	↙ 388 / 379	↗ 325 / 294	↖ 85 / 54	↘ 296 / 289	↙ 2 / 3	↗ 2 / 8	↖ 207 / 148	↘ 439 / 535	↙ 423 / 331	↗ 3 / 6	↖ 253 / 485	↘ 954 / 1502	↙ 164 / 259	
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**FIGURE 13**

XXXX / YYYY AM / PM Peak Hour Traffic Volumes

**Monte Vista Road and Olivine Road Residential Development  
Year 2033 With Project Peak Hour Traffic Volumes**



**Table G: Existing With Project With Improvements Levels of Service**

Intersection	LOS Std.	Control	With Project				With Project With Improvements				
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
3 . Monte Vista Road/Bear Valley Road	D	TWSC	>100	F *	50.1	F *	AWSC	23.9	C	16.1	B

**Notes:**

\* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

LOS = Level of Service



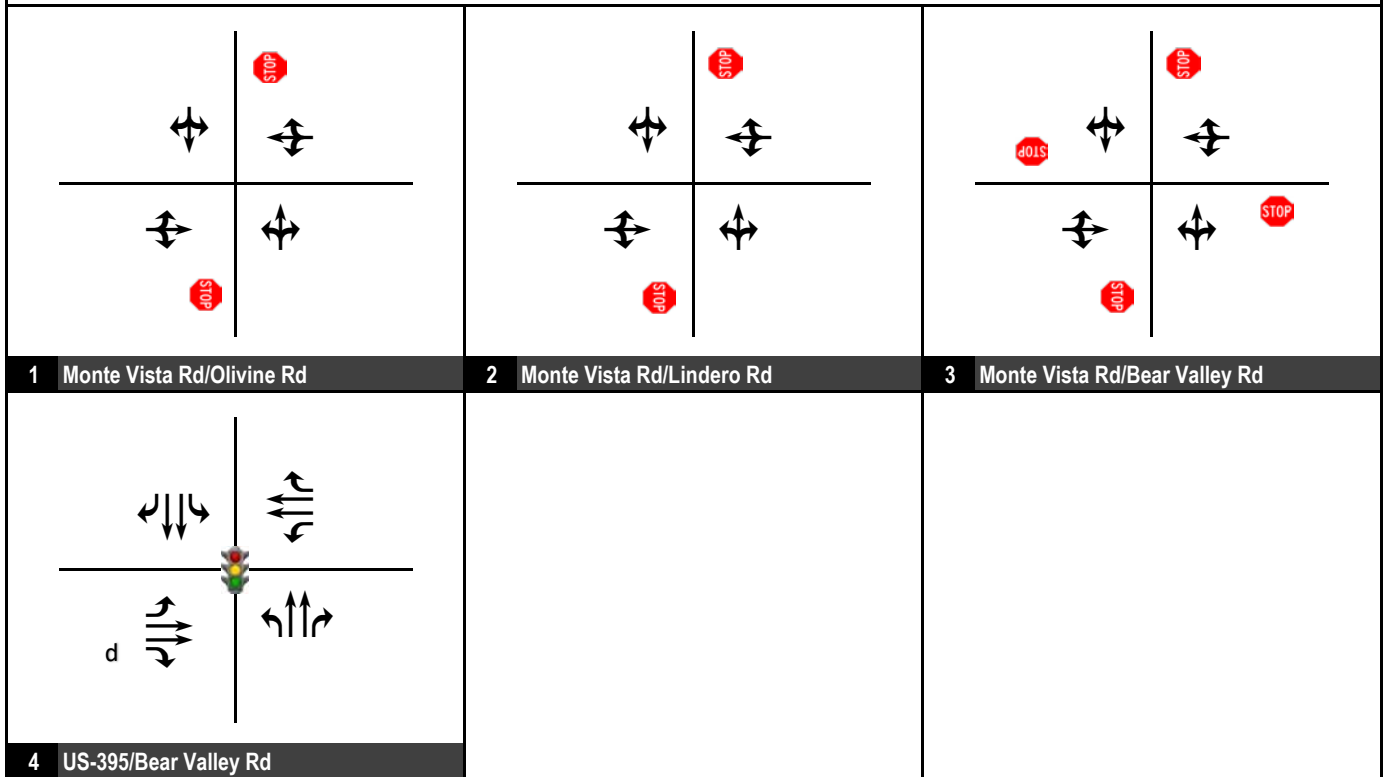
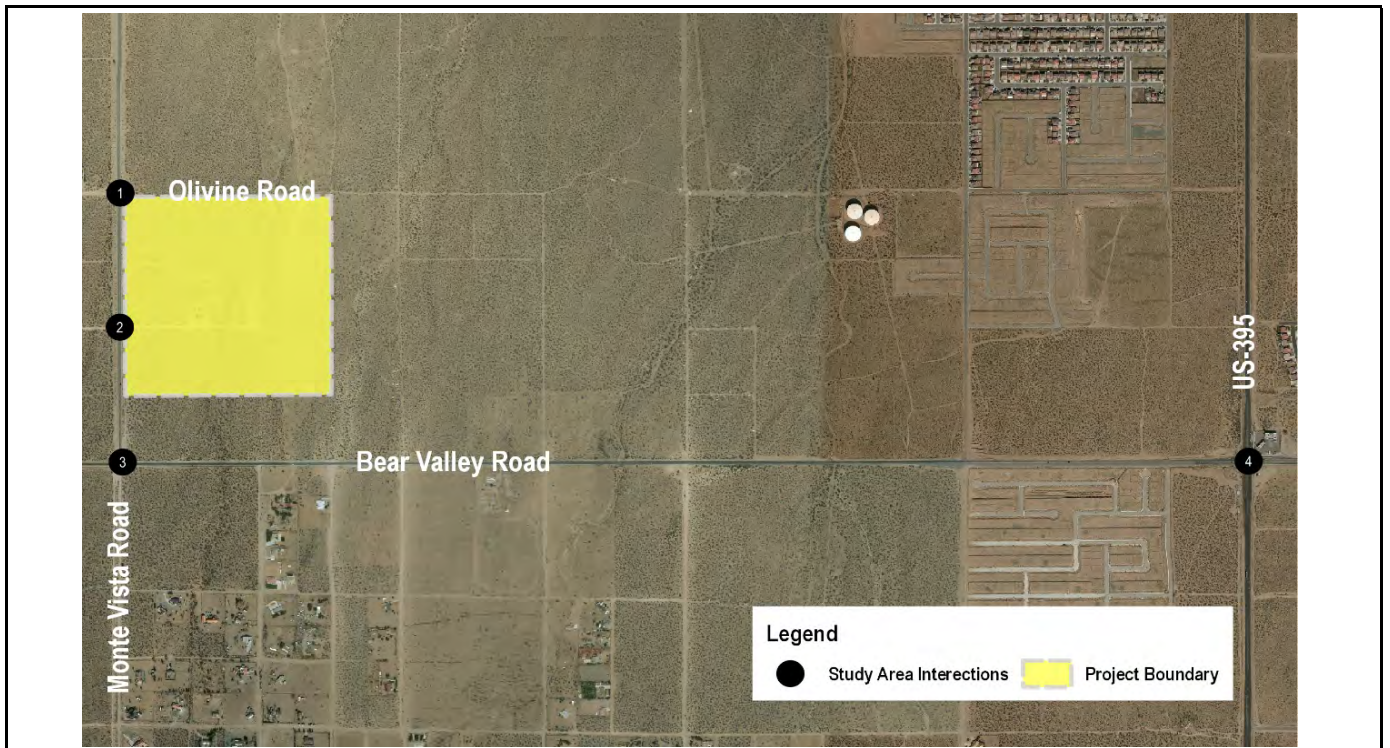


FIGURE 14

Legend

-  Signal
-  Stop Sign

**Monte Vista Road and Olivine Road Residential Development  
Existing With Project With Improvements Intersection Lane Geometrics and Stop Control**



4. calculated based on the opening year ratio of project trips to total trips on Monte Vista Road. The project fair share at this intersection is 38.05%.

Construction of these improvements will restore satisfactory operations. [Table H](#) shows the resulting levels of service and [Figure 15](#) illustrates the opening year (2023) with project recommended improvements.

### 8.3 Year 2033 With Project Circulation Improvements

Under year 2033 with project conditions, one intersection will not meet the relevant jurisdiction's minimum level of service standard. Modifications to intersection configurations are recommended as mitigation measures in accord with CMP requirements as follows:

3. Monte Vista Road/Bear Valley Road – Install an all-way stop control. Add a southbound left-turn lane. Add a westbound right-turn lane. These improvements are not included in the 2016 SBCTA Development Mitigation Nexus Study, therefore, the project's fair share has been calculated and included in Appendix E. The fair share is calculated based on the opening year ratio of project trips to total trips on Monte Vista Road. The project fair share at this intersection is 38.05%.
4. US-395/Bear Valley Road – Add 2<sup>nd</sup> northbound left-turn lane. This improvement is included in the 2016 SBCTA Development Mitigation Nexus Study, therefore the project will pay fees to contribute its fair share to these planned improvements.

Construction of these improvements will restore satisfactory operations. [Table I](#) shows the resulting levels of service and [Figure 16](#) illustrates the year 2033 with project recommended improvements.

### 8.4 Monte Vista Road and Bear Valley Road All-Way Stop Control Evaluation

An all-way stop control at Monte Vista Road and Bear Valley Road was evaluated to determine if the volumes or crash history were sufficient to warrant the installation of an all-way stop control. The evaluation is based on the 2014 California Manual of Uniform Traffic Control Devices Section 2B.07 – Multi-Way Stop Applications. Based on the criteria, an all-way stop control may be considered if there are five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Traffic collision data for the intersection of Monte Vista Road and Bear Valley Road was reviewed to determine if five or more crashes were reported in a 12-month period. The collision data was evaluated for the last five years from the Transportation Injury Mapping System. Based on the data, there were less than five crashes reported at the intersection of Monte Vista Road and Bear Valley Road in each of the last five years. The all-way stop control criteria also include minimum volumes for any 8 hours of an average day for the major and minor street approaches. The existing volumes are based on daily counts collected at Monte Vista Road and Bear Valley Road and are included in Appendix A. [Table J](#) shows the existing volumes for each approach of the intersection. As shown in [Table J](#), the minimum volume warrants are met for 12 hours at Monte Vista Road and Bear Valley Road.

## 9.0 VEHICLE MILES TRAVELED (VMT) SCREENING ANALYSIS

Based on the City of Victorville's "*Vehicle Miles Traveled (VMT) Analysis Guidelines*", a project located in a low VMT area can be effectively screened out from a project-level VMT assessment. To identify if the project is in a low VMT-generating area, the San Bernardino County Transportation Authority VMT screening tool was applied using the VMT per service population. Based on the City's thresholds, a project's VMT generation per service population shall be less than the City's VMT General Plan Buildout per service population. [Figure 17](#) shows the low VMT area screening for the project. As shown in [Figure 17](#), the project is located in TAZ 53898302. The baseline VMT per service population for the TAZ is 9 miles. The City VMT per service population for buildout is 25 miles. Since the project TAZ VMT per service population is lower than the City's VMT per service population, the project is considered to be in a low VMT generating TAZ and presumed to have a less than significant impact on VMT.

**Table H: Opening Year (2023) With Project With Improvements Levels of Service**

Intersection	LOS Std.	Control	With Project						With Project With Improvements				
			AM Peak Hour			PM Peak Hour			AM Peak Hour		PM Peak Hour		
			Delay	LOS	*	Delay	LOS	*	Control	Delay	LOS	Delay	LOS
3 . Monte Vista Road/Bear Valley Road	D	TWSC	>100	F	*	>100	F	*	AWSC	26.3	C	18	B

**Notes:**

\* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

LOS = Level of Service



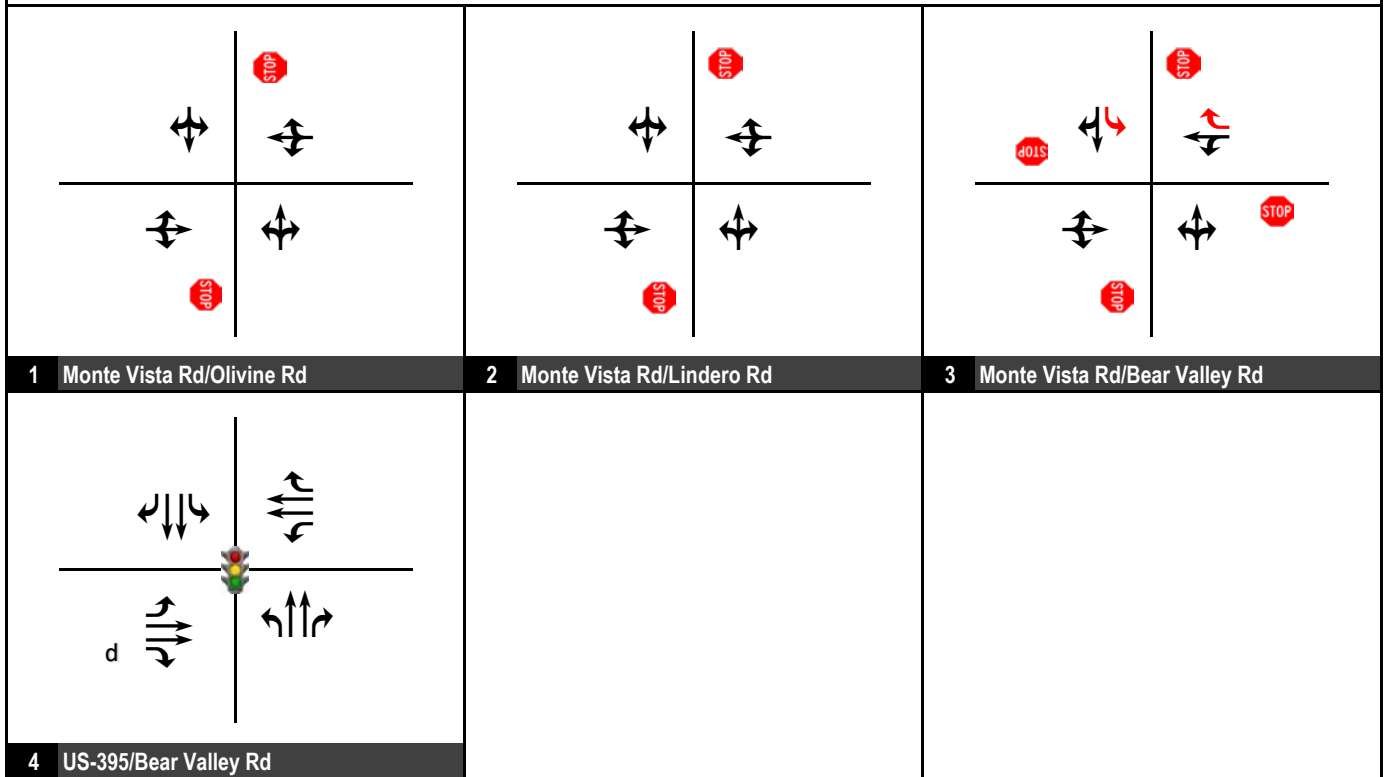
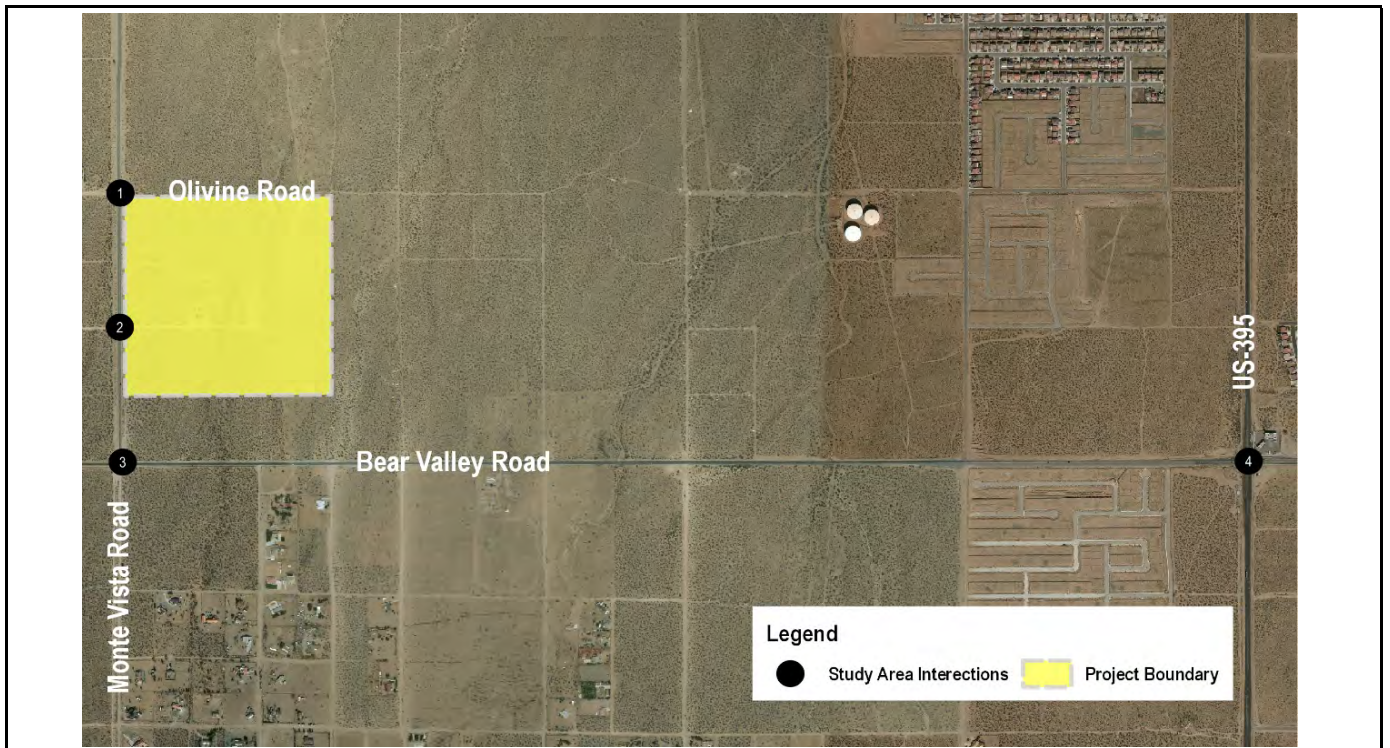


FIGURE 15

Legend

- Signal
- Improvement
- Stop Sign

**Monte Vista Road and Olivine Road Residential Development Opening Year (2023) With Project With Improvements Intersection Lane Geometrics and Stop Control**



**Table I: Year 2033 With Project With Improvements Levels of Service**

Intersection	LOS Std.	Control	With Project						With Project With Improvements				
			AM Peak Hour			PM Peak Hour			AM Peak Hour		PM Peak Hour		
			Delay	LOS		Delay	LOS		Control	Delay	LOS	Delay	LOS
3 . Monte Vista Road/Bear Valley Road	D	TWSC	>100	F *		>100	F *		Signal	34.3	C	31.2	C
4 . US-395/Bear Valley Road	D	Signal	54.1	D		65.5	E *		Signal	50.8	D	52.7	D

**Notes:**

\* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

LOS = Level of Service

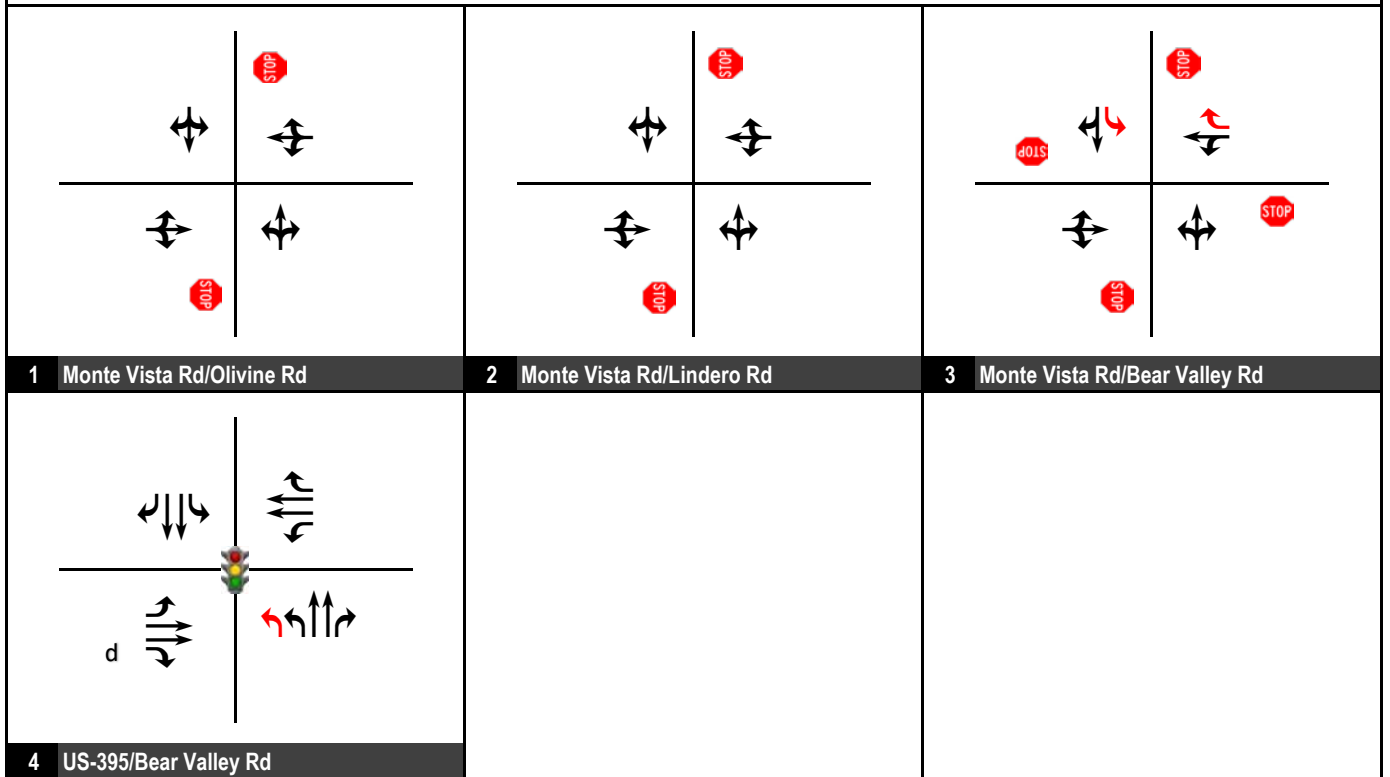
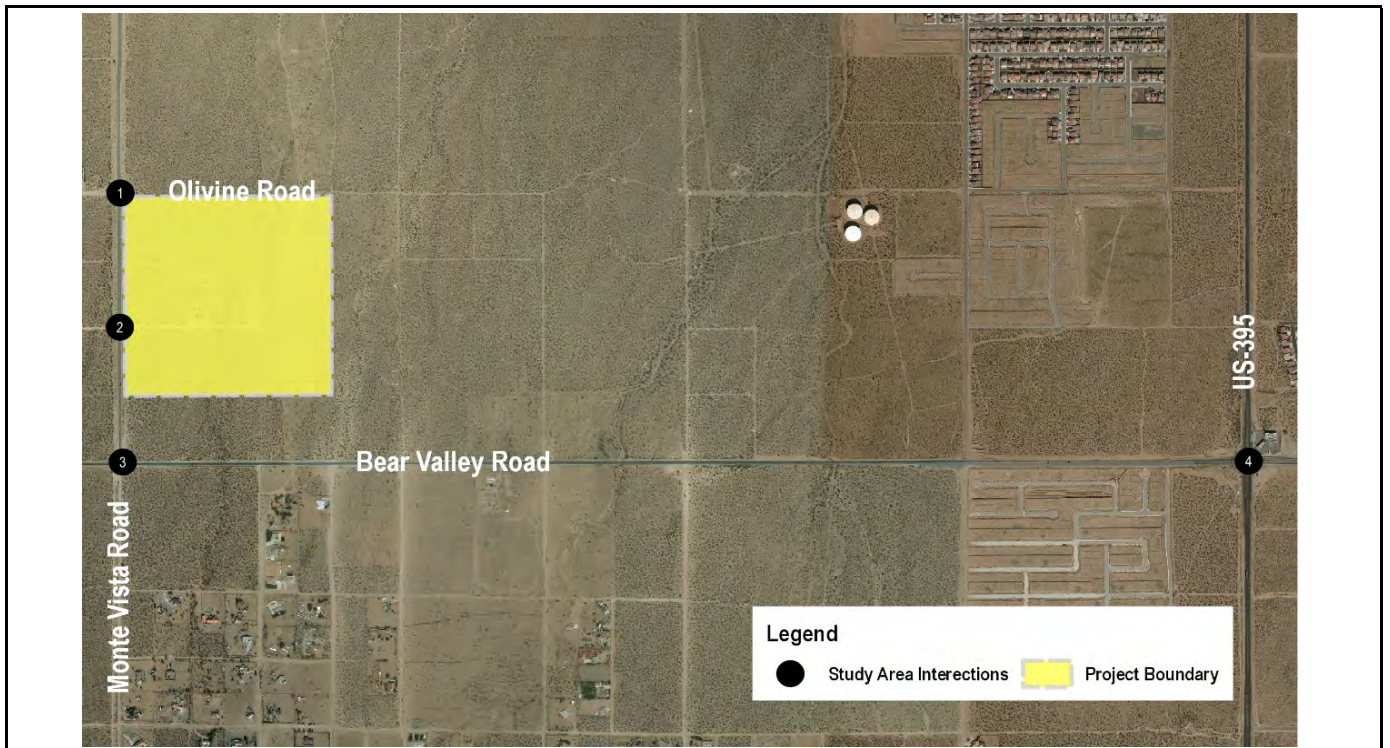


FIGURE 16

Legend

-  Signal
-  Improvement
-  Stop Sign

Monte Vista Road and Olivine Road Residential Development  
Year 2033 With Project With Improvements Intersection Lane Geometrics and Stop Control





**Table J: Monte Vista Road/Bear Valley Road Multi-Way Stop Control Volume Warrant**

Time Period	From	To	Bear Valley Road (Major Road)				Monte Vista Road (Minor Road)				Warrant Met?
			EB Approach	WB Approach	Total	Minimum Volume Required for Warrant	SB Approach	NB Approach	Total	Minimum Volume Required for Warrant	
1	0:00	0:45	12	32	44	210	24	0	24	140	No
2	1:00	1:45	16	30	46	210	24	0	24	140	No
3	2:00	2:45	7	34	41	210	31	0	31	140	No
4	3:00	3:45	16	63	79	210	63	0	63	140	No
5	4:00	4:45	45	134	179	210	111	0	111	140	No
6	5:00	5:45	74	141	215	210	121	0	121	140	No
7	6:00	6:45	102	215	317	210	159	0	159	140	Yes
8	7:00	7:45	165	247	412	210	157	0	157	140	Yes
9	8:00	8:45	204	360	564	210	213	0	213	140	Yes
10	9:00	9:45	153	255	408	210	138	0	138	140	No
11	10:00	10:45	146	256	402	210	155	2	157	140	Yes
12	11:00	11:45	144	244	388	210	146	0	146	140	Yes
13	12:00	12:45	206	291	497	210	170	0	170	140	Yes
14	13:00	13:45	148	296	444	210	200	0	200	140	Yes
15	14:00	14:45	163	290	453	210	200	0	200	140	Yes
16	15:00	15:45	171	300	471	210	235	0	235	140	Yes
17	16:00	16:45	168	329	497	210	246	1	247	140	Yes
18	17:00	17:45	183	305	488	210	189	0	189	140	Yes
19	18:00	18:45	173	272	445	210	175	0	175	140	Yes
20	19:00	19:45	102	160	262	210	111	1	112	140	No
21	20:00	20:45	85	145	230	210	119	1	120	140	No
22	21:00	21:45	63	117	180	210	89	0	89	140	No
23	22:00	22:45	46	72	118	210	56	0	56	140	No
24	23:00	23:45	23	41	64	210	27	0	27	140	No

**Total # Hours Warrant Met**

**12**

**Warrant Met?**

**Yes**

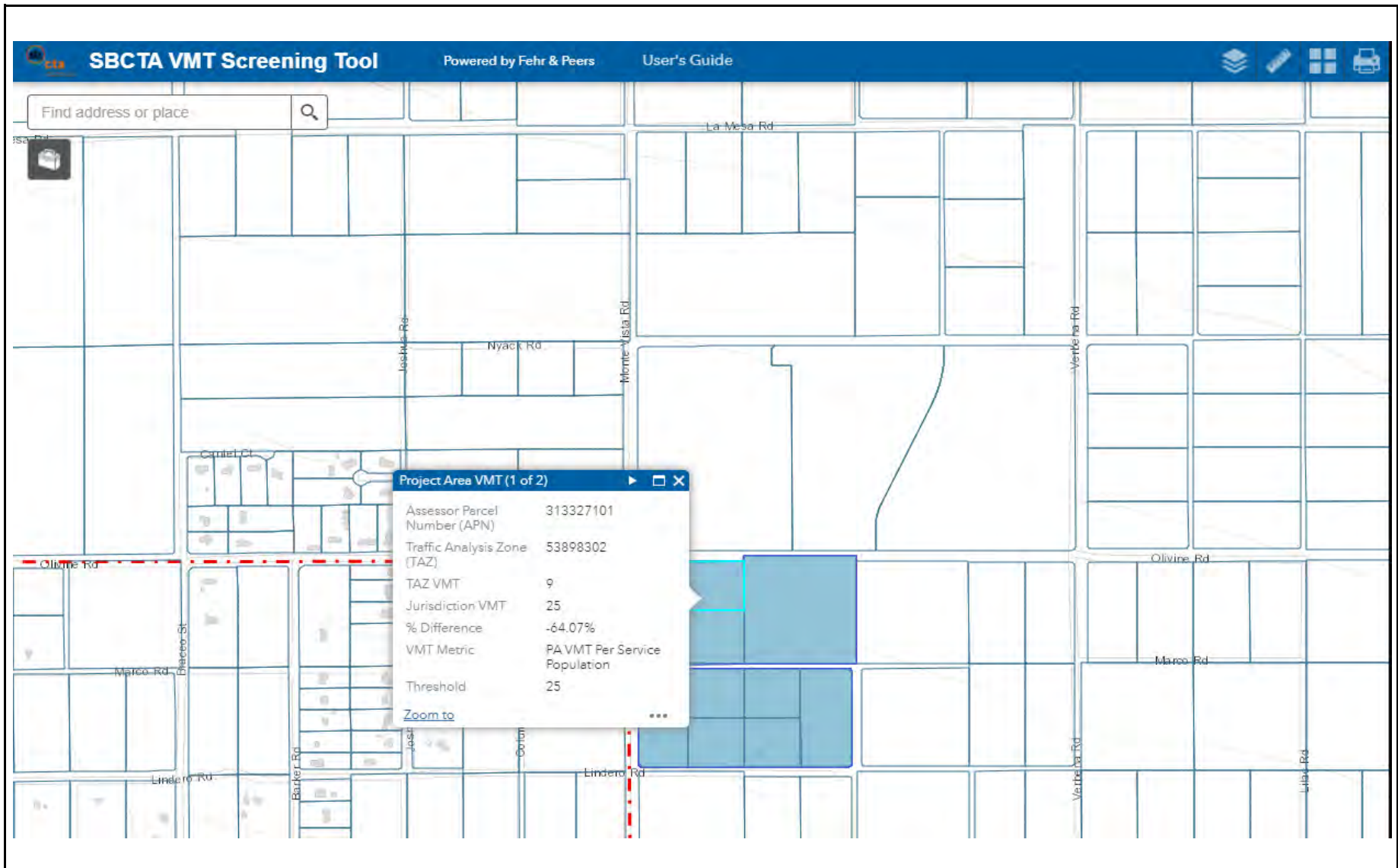


FIGURE 17

Monte Vista Road and Olivine Road Residential Development  
SBCTA VMT Screening Tool



## 10.0 IMPACT CRITERIA FOR CEQA DETERMINATION

This section evaluates the CEQA checklist for impact evaluation.

**A. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?**

Based on the results of the analysis, the project does not degrade traffic operations below those acceptable in the City's General Plan after implementation of circulation improvements. The project would not conflict with adopted policies supporting alternative transportation modes. The project will not change roadway designations from those in the City's General Plan. The project will also not result in removal of any of the facilities listed above. Therefore, the project impact is considered less than significant.

**B. Conflict or be inconsistent with CEQA Guidelines 15064.3, subdivision (b)?**

Based on the City's Low VMT Screening Tool, the project will not require a full VMT analysis and will therefore have a less than significant impact under CEQA.

**C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

The design of driveways and other project access locations will be based on City Code, which sets the standard for such design. It is not anticipated that traffic hazards will increase, therefore, the project impact is considered less than significant.

**D. Result in inadequate emergency access?**

The proposed driveways will be designed in accordance with all applicable design and safety standards required by adopted fire codes, safety codes, and building codes established by the City's Engineering and Fire Departments.

## 11.0 SUMMARY & CONCLUSIONS

The proposed project is forecast to generate 144 new trips in the a.m. peak hour, 192 new trips in the p.m. peak hour, and 1,831 new daily trips. Based on LOS analysis, the intersection of Monte Vista Road/Bear Valley Road is projected to operate at unsatisfactory LOS in the existing, opening year (2023), and year 2033 without and with project conditions. Also, under year 2033 without and with project conditions, the intersection of US-395/Bear Valley Road is projected to operate at unsatisfactory LOS. With the construction of the circulation improvements, all intersections will operate at satisfactory LOS.



# APPENDIX A: TRAFFIC COUNTS

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Olivine Road  
 Weather: Clear

File Name : 05\_VIC\_Monte Vista\_Olivine AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

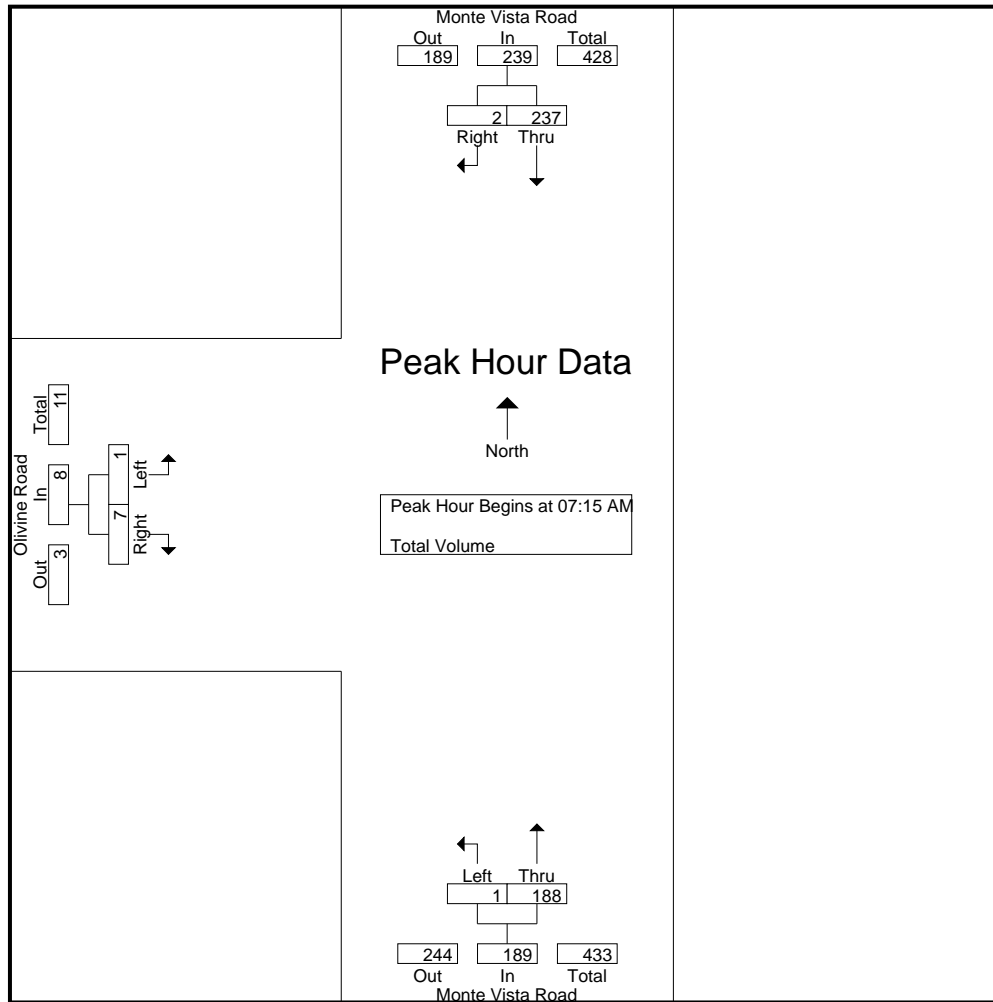
Groups Printed- Total Volume

Start Time	Monte Vista Road Southbound			Monte Vista Road Northbound			Olivine Road Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	31	0	31	1	26	27	1	3	4	62
07:15 AM	47	1	48	0	48	48	0	3	3	99
07:30 AM	67	1	68	0	42	42	0	3	3	113
07:45 AM	72	0	72	0	56	56	1	0	1	129
Total	217	2	219	1	172	173	2	9	11	403
08:00 AM	51	0	51	1	42	43	0	1	1	95
08:15 AM	43	1	44	1	17	18	0	0	0	62
08:30 AM	34	0	34	1	23	24	1	0	1	59
08:45 AM	43	0	43	1	25	26	1	1	2	71
Total	171	1	172	4	107	111	2	2	4	287
Grand Total	388	3	391	5	279	284	4	11	15	690
Apprch %	99.2	0.8		1.8	98.2		26.7	73.3		
Total %	56.2	0.4	56.7	0.7	40.4	41.2	0.6	1.6	2.2	

Start Time	Monte Vista Road Southbound			Monte Vista Road Northbound			Olivine Road Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
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										
07:15 AM	47	1	48	0	48	48	0	3	3	99
07:30 AM	67	1	68	0	42	42	0	3	3	113
07:45 AM	72	0	72	0	56	56	1	0	1	129
08:00 AM	51	0	51	1	42	43	0	1	1	95
Total Volume	237	2	239	1	188	189	1	7	8	436
% App. Total	99.2	0.8		0.5	99.5		12.5	87.5		
PHF	.823	.500	.830	.250	.839	.844	.250	.583	.667	.845

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Olivine Road  
 Weather: Clear

File Name : 05\_VIC\_Monte Vista\_Olivine AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 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			07:00 AM		
+0 mins.	47	1	48	0	48	48	1	3	4
+15 mins.	67	1	68	0	42	42	0	3	3
+30 mins.	72	0	72	0	56	56	0	3	3
+45 mins.	51	0	51	1	42	43	1	0	1
Total Volume	237	2	239	1	188	189	2	9	11
% App. Total	99.2	0.8		0.5	99.5		18.2	81.8	
PHF	.823	.500	.830	.250	.839	.844	.500	.750	.688



City of Victorville  
 N/S: Monte Vista Road  
 E/W: Olivine Road  
 Weather: Clear

File Name : 05\_VIC\_Monte Vista\_Olivine PM  
 Site Code : 99918438  
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 Page No : 1

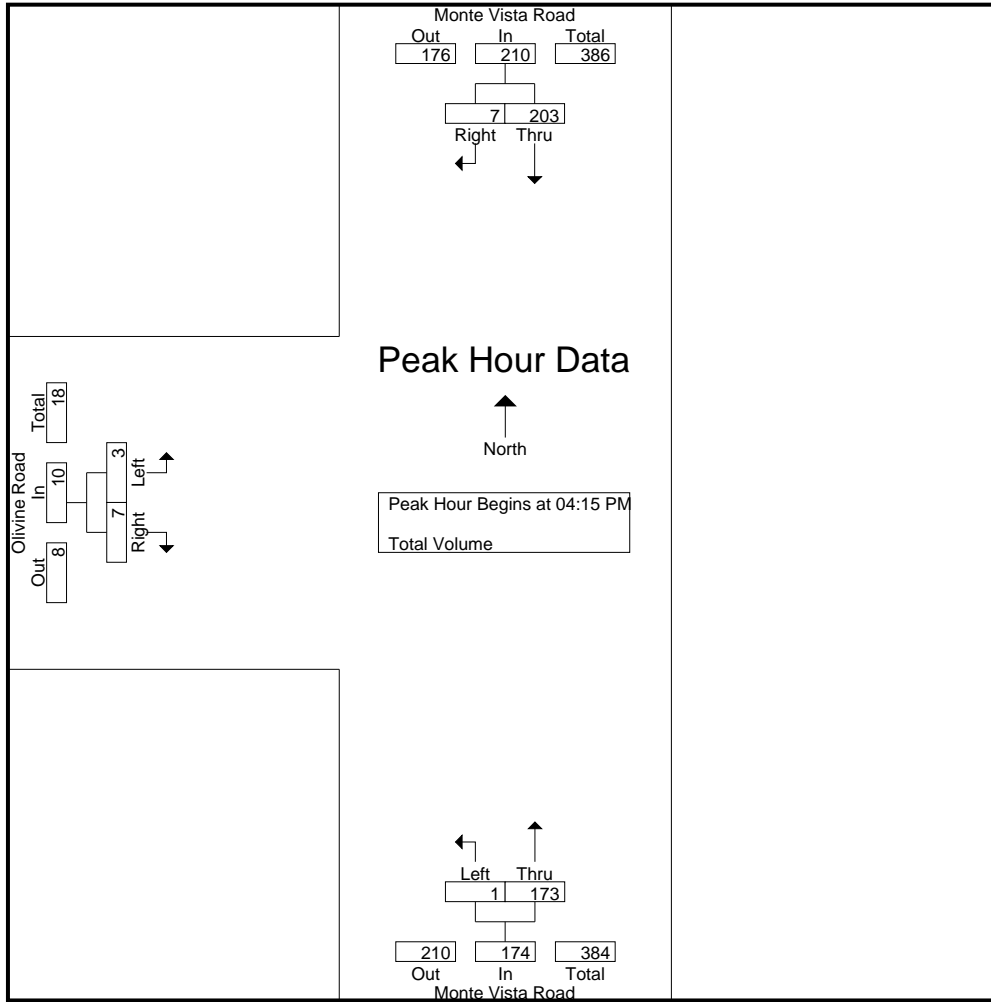
Groups Printed- Total Volume

Start Time	Monte Vista Road Southbound			Monte Vista Road Northbound			Olivine Road Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	48	1	49	2	37	39	0	1	1	89
04:15 PM	60	2	62	0	46	46	1	2	3	111
04:30 PM	43	2	45	0	33	33	0	0	0	78
04:45 PM	60	2	62	1	36	37	2	2	4	103
Total	211	7	218	3	152	155	3	5	8	381
05:00 PM	40	1	41	0	58	58	0	3	3	102
05:15 PM	39	0	39	1	41	42	3	2	5	86
05:30 PM	43	1	44	2	44	46	1	2	3	93
05:45 PM	34	1	35	0	47	47	1	1	2	84
Total	156	3	159	3	190	193	5	8	13	365
Grand Total	367	10	377	6	342	348	8	13	21	746
Apprch %	97.3	2.7		1.7	98.3		38.1	61.9		
Total %	49.2	1.3	50.5	0.8	45.8	46.6	1.1	1.7	2.8	

Start Time	Monte Vista Road Southbound			Monte Vista Road Northbound			Olivine Road Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
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										
04:15 PM	<b>60</b>	<b>2</b>	<b>62</b>	0	46	46	1	2	3	<b>111</b>
04:30 PM	43	2	45	0	33	33	0	0	0	78
04:45 PM	60	2	62	<b>1</b>	36	37	<b>2</b>	<b>2</b>	<b>4</b>	103
05:00 PM	40	1	41	0	<b>58</b>	<b>58</b>	0	<b>3</b>	3	102
Total Volume	203	7	210	1	173	174	3	7	10	394
% App. Total	96.7	3.3		0.6	99.4		30	70		
PHF	.846	.875	.847	.250	.746	.750	.375	.583	.625	.887

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Olivine Road  
 Weather: Clear

File Name : 05\_VIC\_Monte Vista\_Olivine PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 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			04:45 PM		
+0 mins.	48	1	49	0	<b>58</b>	<b>58</b>	2	2	4
+15 mins.	<b>60</b>	<b>2</b>	<b>62</b>	1	41	42	0	<b>3</b>	3
+30 mins.	43	2	45	<b>2</b>	44	46	<b>3</b>	2	<b>5</b>
+45 mins.	60	2	62	0	47	47	1	2	3
Total Volume	211	7	218	3	190	193	6	9	15
% App. Total	96.8	3.2		1.6	98.4		40	60	
PHF	.879	.875	.879	.375	.819	.832	.500	.750	.750

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Lindero Road  
 Weather: Clear

File Name : 06\_VIC\_Monte Vista\_Lindero AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

Groups Printed- Total Volume

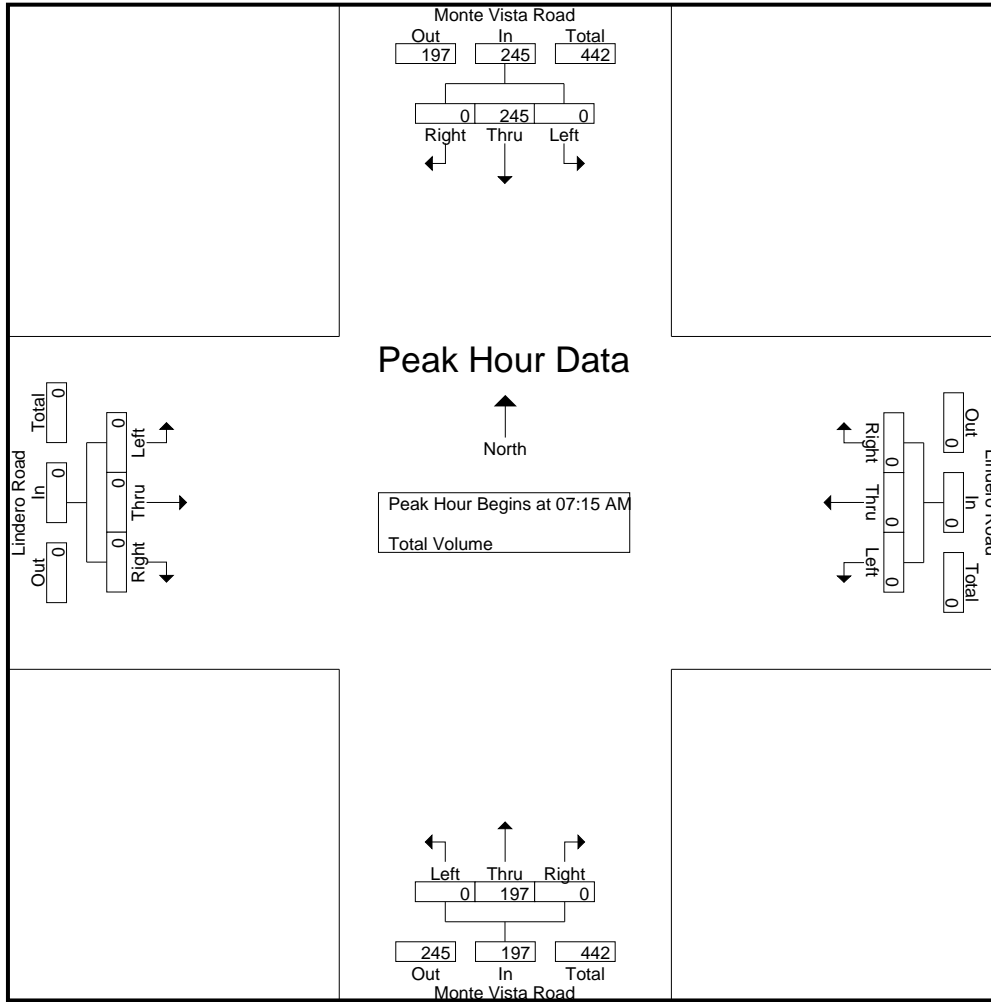
Start Time	Monte Vista Road Southbound				Lindero Road Westbound				Monte Vista Road Northbound				Lindero Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	36	0	36	0	0	0	0	0	29	0	29	0	0	0	0	65
07:15 AM	0	48	0	48	0	0	0	0	0	53	0	53	0	0	0	0	101
07:30 AM	0	73	0	73	0	0	0	0	0	50	0	50	0	0	0	0	123
07:45 AM	0	72	0	72	0	0	0	0	0	53	0	53	0	0	0	0	125
Total	0	229	0	229	0	0	0	0	0	185	0	185	0	0	0	0	414
08:00 AM	0	52	0	52	0	0	0	0	0	41	0	41	0	0	0	0	93
08:15 AM	0	42	0	42	0	0	0	0	1	20	0	21	0	0	0	0	63
08:30 AM	0	38	0	38	0	0	0	0	0	24	0	24	0	0	1	1	63
08:45 AM	0	43	0	43	0	0	0	0	0	25	0	25	0	0	0	0	68
Total	0	175	0	175	0	0	0	0	1	110	0	111	0	0	1	1	287
Grand Total	0	404	0	404	0	0	0	0	1	295	0	296	0	0	1	1	701
Apprch %	0	100	0		0	0	0		0.3	99.7	0		0	0	100		
Total %	0	57.6	0	57.6	0	0	0	0	0.1	42.1	0	42.2	0	0	0.1	0.1	

Start Time	Monte Vista Road Southbound				Lindero Road Westbound				Monte Vista Road Northbound				Lindero Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
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																	
07:15 AM	0	48	0	48	0	0	0	0	0	53	0	53	0	0	0	0	101
07:30 AM	0	73	0	73	0	0	0	0	0	50	0	50	0	0	0	0	123
07:45 AM	0	72	0	72	0	0	0	0	0	53	0	53	0	0	0	0	125
08:00 AM	0	52	0	52	0	0	0	0	0	41	0	41	0	0	0	0	93
Total Volume	0	245	0	245	0	0	0	0	0	197	0	197	0	0	0	0	442
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.839	.000	.839	.000	.000	.000	.000	.000	.929	.000	.929	.000	.000	.000	.000	.884



City of Victorville  
 N/S: Monte Vista Road  
 E/W: Lindero Road  
 Weather: Clear

File Name : 06\_VIC\_Monte Vista\_Lindero AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 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				07:00 AM				07:15 AM				07:45 AM			
+0 mins.	0	48	0	48	0	0	0	0	0	53	0	53	0	0	0	0
+15 mins.	0	<b>73</b>	0	<b>73</b>	0	0	0	0	0	50	0	50	0	0	0	0
+30 mins.	0	72	0	72	0	0	0	0	0	53	0	53	0	0	0	0
+45 mins.	0	52	0	52	0	0	0	0	0	41	0	41	0	0	1	1
Total Volume	0	245	0	245	0	0	0	0	0	197	0	197	0	0	1	1
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100	
PHF	.000	.839	.000	.839	.000	.000	.000	.000	.000	.929	.000	.929	.000	.000	.250	.250

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Lindero Road  
 Weather: Clear

File Name : 06\_VIC\_Monte Vista\_Lindero PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

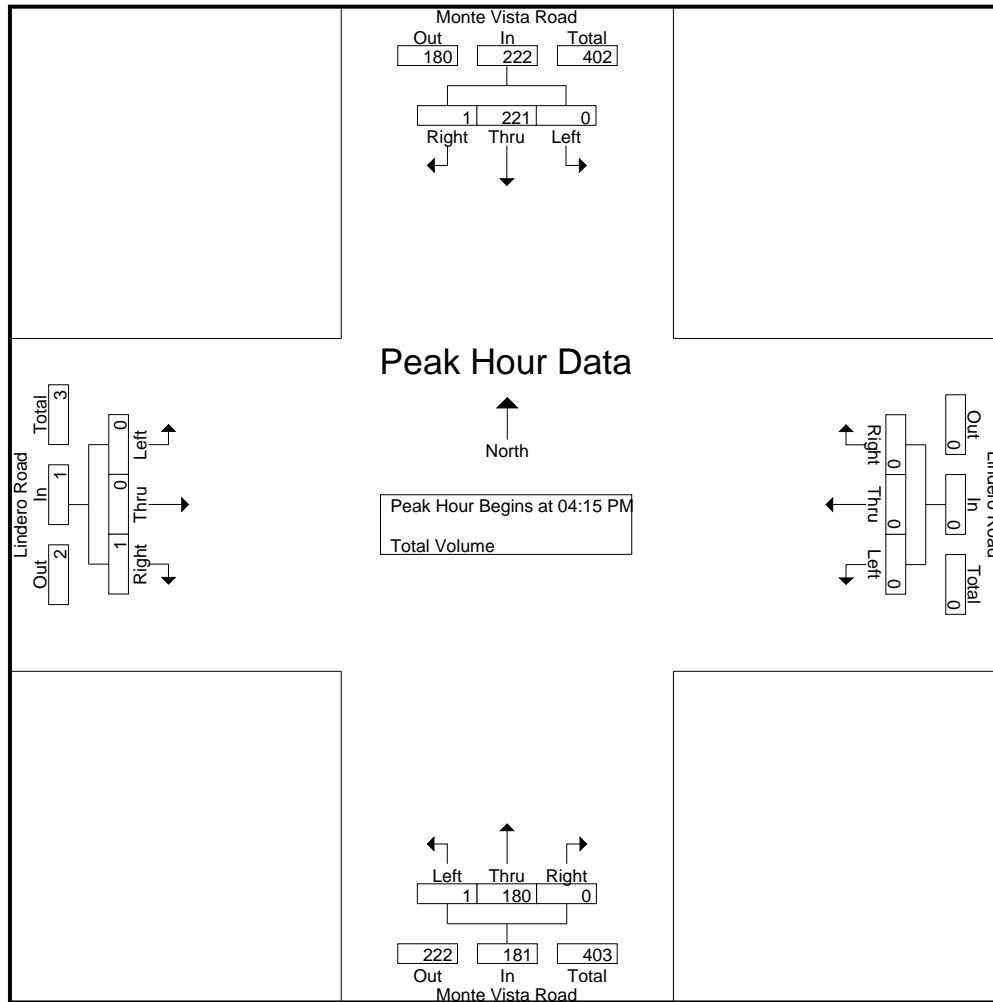
Groups Printed- Total Volume

Start Time	Monte Vista Road Southbound				Lindero Road Westbound				Monte Vista Road Northbound				Lindero 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	0	50	0	50	0	0	0	0	1	38	0	39	1	0	0	1	90
04:15 PM	0	62	0	62	0	0	0	0	0	46	0	46	0	0	0	0	108
04:30 PM	0	53	0	53	0	0	0	0	0	40	0	40	0	0	0	0	93
04:45 PM	0	62	1	63	0	0	0	0	1	40	0	41	0	0	0	0	104
Total	0	227	1	228	0	0	0	0	2	164	0	166	1	0	0	1	395
05:00 PM	0	44	0	44	0	0	0	0	0	54	0	54	0	0	1	1	99
05:15 PM	0	43	0	43	0	0	0	0	0	48	0	48	0	0	1	1	92
05:30 PM	0	47	0	47	0	0	0	0	0	43	0	43	0	0	0	0	90
05:45 PM	0	37	0	37	0	0	0	0	0	51	0	51	0	0	0	0	88
Total	0	171	0	171	0	0	0	0	0	196	0	196	0	0	2	2	369
Grand Total	0	398	1	399	0	0	0	0	2	360	0	362	1	0	2	3	764
Apprch %	0	99.7	0.3		0	0	0		0.6	99.4	0		33.3	0	66.7		
Total %	0	52.1	0.1	52.2	0	0	0	0	0.3	47.1	0	47.4	0.1	0	0.3	0.4	

Start Time	Monte Vista Road Southbound				Lindero Road Westbound				Monte Vista Road Northbound				Lindero Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
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																	
04:15 PM	0	<b>62</b>	0	62	0	0	0	0	0	46	0	46	0	0	0	0	<b>108</b>
04:30 PM	0	53	0	53	0	0	0	0	0	40	0	40	0	0	0	0	93
04:45 PM	0	62	<b>1</b>	<b>63</b>	0	0	0	0	<b>1</b>	40	0	41	0	0	0	0	104
05:00 PM	0	44	0	44	0	0	0	0	0	<b>54</b>	0	<b>54</b>	0	0	<b>1</b>	<b>1</b>	99
Total Volume	0	221	1	222	0	0	0	0	1	180	0	181	0	0	1	1	404
% App. Total	0	99.5	0.5		0	0	0		0.6	99.4	0		0	0	100		
PHF	.000	.891	.250	.881	.000	.000	.000	.000	.250	.833	.000	.838	.000	.000	.250	.250	.935

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Lindero Road  
 Weather: Clear

File Name : 06\_VIC\_Monte Vista\_Lindero PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 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				04:00 PM				05:00 PM				04:30 PM			
+0 mins.	0	50	0	50	0	0	0	0	0	<b>54</b>	0	<b>54</b>	0	0	0	0
+15 mins.	0	<b>62</b>	0	62	0	0	0	0	0	48	0	48	0	0	0	0
+30 mins.	0	53	0	53	0	0	0	0	0	43	0	43	0	0	<b>1</b>	<b>1</b>
+45 mins.	0	62	<b>1</b>	<b>63</b>	0	0	0	0	0	51	0	51	0	0	1	1
Total Volume	0	227	1	228	0	0	0	0	0	196	0	196	0	0	2	2
% App. Total	0	99.6	0.4		0	0	0	0	0	100	0		0	0	100	
PHF	.000	.915	.250	.905	.000	.000	.000	.000	.000	.907	.000	.907	.000	.000	.500	.500



City of Victorville  
 N/S: Monte Vista Road  
 E/W: Duncan Road/Bear Valley Road  
 Weather: Clear

File Name : 07\_VIC\_Monte Vista\_Duncan\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

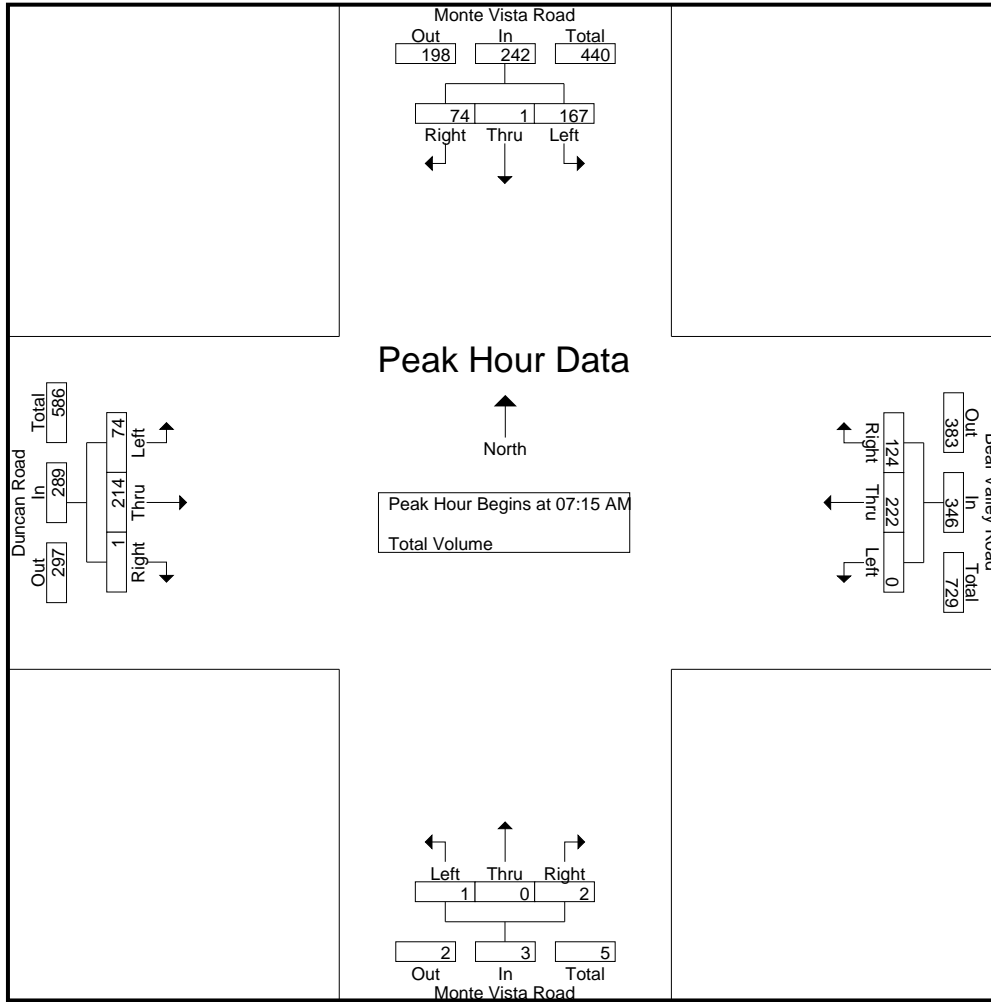
Groups Printed- Total Volume

Start Time	Monte Vista Road Southbound				Bear Valley Road Westbound				Monte Vista Road Northbound				Duncan 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	27	0	9	36	0	24	20	44	1	1	0	2	8	44	0	52	134
07:15 AM	34	1	7	42	0	34	39	73	0	0	1	1	14	46	0	60	176
07:30 AM	47	0	27	74	0	69	31	100	0	0	0	0	15	39	0	54	228
07:45 AM	46	0	30	76	0	73	35	108	1	0	0	1	21	60	1	82	267
Total	154	1	73	228	0	200	125	325	2	1	1	4	58	189	1	248	805
08:00 AM	40	0	10	50	0	46	19	65	0	0	1	1	24	69	0	93	209
08:15 AM	32	2	13	47	0	45	13	58	1	0	1	2	6	47	1	54	161
08:30 AM	21	0	14	35	0	49	14	63	0	0	0	0	9	56	1	66	164
08:45 AM	30	0	12	42	0	48	15	63	0	0	0	0	10	54	0	64	169
Total	123	2	49	174	0	188	61	249	1	0	2	3	49	226	2	277	703
Grand Total	277	3	122	402	0	388	186	574	3	1	3	7	107	415	3	525	1508
Apprch %	68.9	0.7	30.3		0	67.6	32.4		42.9	14.3	42.9		20.4	79	0.6		
Total %	18.4	0.2	8.1	26.7	0	25.7	12.3	38.1	0.2	0.1	0.2	0.5	7.1	27.5	0.2	34.8	

Start Time	Monte Vista Road Southbound				Bear Valley Road Westbound				Monte Vista Road Northbound				Duncan Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
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																	
07:15 AM	34	1	7	42	0	34	<b>39</b>	73	0	0	<b>1</b>	1	14	46	0	60	176
07:30 AM	<b>47</b>	0	27	74	0	69	31	100	0	0	0	0	15	39	0	54	228
07:45 AM	46	0	<b>30</b>	<b>76</b>	0	<b>73</b>	35	<b>108</b>	1	0	0	1	21	60	<b>1</b>	82	<b>267</b>
08:00 AM	40	0	10	50	0	46	19	65	0	0	1	1	<b>24</b>	<b>69</b>	0	<b>93</b>	209
Total Volume	167	1	74	242	0	222	124	346	1	0	2	3	74	214	1	289	880
% App. Total	69	0.4	30.6		0	64.2	35.8		33.3	0	66.7		25.6	74	0.3		
PHF	.888	.250	.617	.796	.000	.760	.795	.801	.250	.000	.500	.750	.771	.775	.250	.777	.824

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Duncan Road/Bear Valley Road  
 Weather: Clear

File Name : 07\_VIC\_Monte Vista\_Duncan\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 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				07:00 AM				07:45 AM			
+0 mins.	47	0	27	74	0	34	39	73	1	1	0	2	21	60	1	82
+15 mins.	46	0	30	76	0	69	31	100	0	0	1	1	24	69	0	93
+30 mins.	40	0	10	50	0	73	35	108	0	0	0	0	6	47	1	54
+45 mins.	32	2	13	47	0	46	19	65	1	0	0	1	9	56	1	66
Total Volume	165	2	80	247	0	222	124	346	2	1	1	4	60	232	3	295
% App. Total	66.8	0.8	32.4		0	64.2	35.8		50	25	25		20.3	78.6	1	
PHF	.878	.250	.667	.813	.000	.760	.795	.801	.500	.250	.250	.500	.625	.841	.750	.793

City of Victorville  
 N/S: Monte Vista Road  
 E/W: Duncan Road/Bear Valley Road  
 Weather: Clear

File Name : 07\_VIC\_Monte Vista\_Duncan\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

Groups Printed- Total Volume

Start Time	Monte Vista Road Southbound				Bear Valley Road Westbound				Monte Vista Road Northbound				Duncan 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	42	0	10	52	1	62	29	92	0	0	1	1	10	66	1	77	222
04:15 PM	44	1	15	60	1	63	35	99	0	0	0	0	11	42	0	53	212
04:30 PM	35	0	20	55	1	43	28	72	0	0	0	0	11	49	0	60	187
04:45 PM	42	0	20	62	1	45	29	75	0	0	0	0	10	47	0	57	194
Total	163	1	65	229	4	213	121	338	0	0	1	1	42	204	1	247	815
05:00 PM	40	0	6	46	0	43	46	89	0	1	0	1	11	41	1	53	189
05:15 PM	28	0	15	43	0	51	44	95	1	0	0	1	2	33	0	35	174
05:30 PM	34	0	14	48	0	58	40	98	0	0	1	1	5	30	0	35	182
05:45 PM	25	0	12	37	0	47	43	90	0	0	0	0	6	32	0	38	165
Total	127	0	47	174	0	199	173	372	1	1	1	3	24	136	1	161	710
Grand Total	290	1	112	403	4	412	294	710	1	1	2	4	66	340	2	408	1525
Apprch %	72	0.2	27.8		0.6	58	41.4		25	25	50		16.2	83.3	0.5		
Total %	19	0.1	7.3	26.4	0.3	27	19.3	46.6	0.1	0.1	0.1	0.3	4.3	22.3	0.1	26.8	

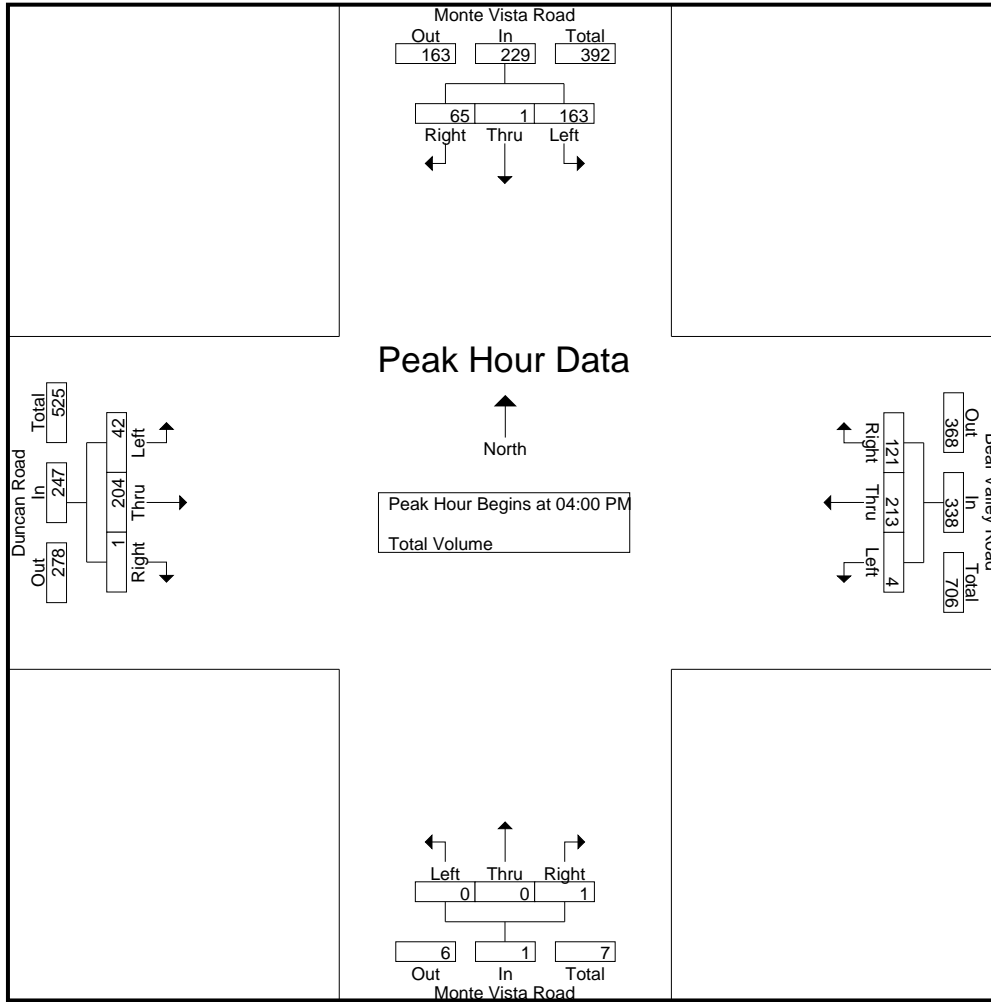
Start Time	Monte Vista Road Southbound				Bear Valley Road Westbound				Monte Vista Road Northbound				Duncan Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	42	0	10	52	1	62	29	92	0	0	1	1	10	<b>66</b>	1	<b>77</b>	<b>222</b>
04:15 PM	<b>44</b>	<b>1</b>	15	60	1	<b>63</b>	<b>35</b>	<b>99</b>	0	0	0	0	<b>11</b>	42	0	53	212
04:30 PM	35	0	<b>20</b>	55	1	43	28	72	0	0	0	0	11	49	0	60	187
04:45 PM	42	0	<b>20</b>	<b>62</b>	1	45	29	75	0	0	0	0	10	47	0	57	194
Total Volume	163	1	65	229	4	213	121	338	0	0	1	1	42	204	1	247	815
% App. Total	71.2	0.4	28.4		1.2	63	35.8		0	0	100		17	<b>82.6</b>	0.4		
PHF	.926	.250	.813	.923	1.00	.845	.864	.854	.000	.000	.250	.250	.955	.773	.250	.802	.918

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: Monte Vista Road  
 E/W: Duncan Road/Bear Valley Road  
 Weather: Clear

File Name : 07\_VIC\_Monte Vista\_Duncan\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 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				04:45 PM				04:00 PM			
+0 mins.	42	0	10	52	0	43	<b>46</b>	89	0	0	0	0	10	<b>66</b>	<b>1</b>	<b>77</b>
+15 mins.	<b>44</b>	<b>1</b>	15	60	0	51	44	95	0	<b>1</b>	0	<b>1</b>	<b>11</b>	42	0	53
+30 mins.	35	0	<b>20</b>	55	0	<b>58</b>	40	<b>98</b>	<b>1</b>	0	0	<b>1</b>	11	49	0	60
+45 mins.	42	0	20	<b>62</b>	0	47	43	90	0	0	<b>1</b>	<b>1</b>	10	47	0	57
Total Volume	163	1	65	229	0	199	173	372	1	1	1	3	42	204	1	247
% App. Total	71.2	0.4	28.4		0	53.5	46.5		33.3	33.3	33.3		17	82.6	0.4	
PHF	.926	.250	.813	.923	.000	.858	.940	.949	.250	.250	.250	.750	.955	.773	.250	.802



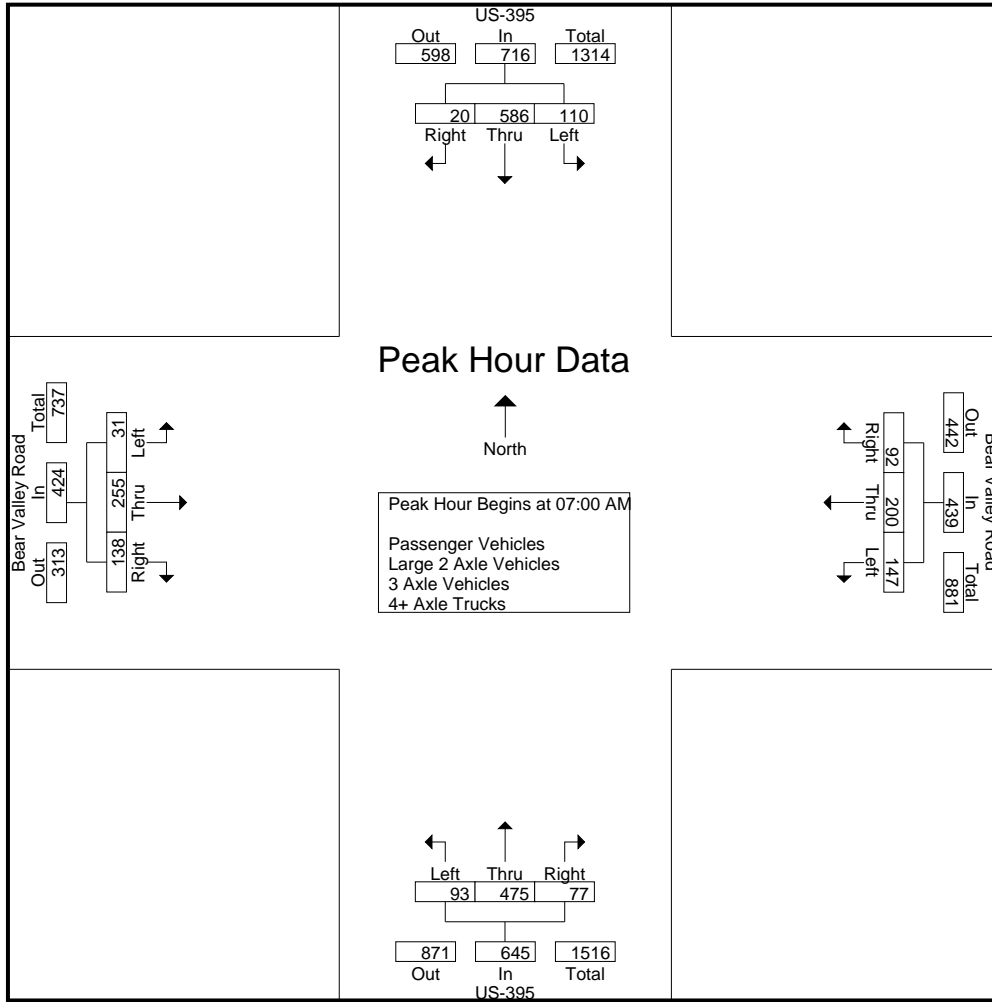
City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	18	168	3	189	46	36	21	103	19	126	16	161	5	42	32	79	532
07:15 AM	28	136	4	168	43	47	21	111	26	122	19	167	11	58	40	109	555
07:30 AM	34	136	9	179	34	63	21	118	24	121	25	170	9	75	39	123	590
07:45 AM	30	146	4	180	24	54	29	107	24	106	17	147	6	80	27	113	547
Total	110	586	20	716	147	200	92	439	93	475	77	645	31	255	138	424	2224
08:00 AM	39	142	6	187	30	50	14	94	10	90	17	117	10	67	34	111	509
08:15 AM	31	146	6	183	23	34	14	71	9	95	13	117	14	49	29	92	463
08:30 AM	32	127	3	162	32	36	20	88	7	115	23	145	9	54	22	85	480
08:45 AM	32	95	2	129	23	41	22	86	3	109	11	123	10	70	26	106	444
Total	134	510	17	661	108	161	70	339	29	409	64	502	43	240	111	394	1896
Grand Total	244	1096	37	1377	255	361	162	778	122	884	141	1147	74	495	249	818	4120
Apprch %	17.7	79.6	2.7		32.8	46.4	20.8		10.6	77.1	12.3		9	60.5	30.4		
Total %	5.9	26.6	0.9	33.4	6.2	8.8	3.9	18.9	3	21.5	3.4	27.8	1.8	12	6	19.9	
Passenger Vehicles	231	907	31	1169	252	349	148	749	113	740	133	986	71	488	241	800	3704
% Passenger Vehicles	94.7	82.8	83.8	84.9	98.8	96.7	91.4	96.3	92.6	83.7	94.3	86	95.9	98.6	96.8	97.8	89.9
Large 2 Axle Vehicles	5	28	4	37	1	10	4	15	6	33	5	44	3	7	4	14	110
% Large 2 Axle Vehicles	2	2.6	10.8	2.7	0.4	2.8	2.5	1.9	4.9	3.7	3.5	3.8	4.1	1.4	1.6	1.7	2.7
3 Axle Vehicles	3	19	0	22	0	0	4	4	1	12	0	13	0	0	0	0	39
% 3 Axle Vehicles	1.2	1.7	0	1.6	0	0	2.5	0.5	0.8	1.4	0	1.1	0	0	0	0	0.9
4+ Axle Trucks	5	142	2	149	2	2	6	10	2	99	3	104	0	0	4	4	267
% 4+ Axle Trucks	2	13	5.4	10.8	0.8	0.6	3.7	1.3	1.6	11.2	2.1	9.1	0	0	1.6	0.5	6.5

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	18	<b>168</b>	3	<b>189</b>	46	36	21	103	19	<b>126</b>	16	161	5	42	32	79	532
07:15 AM	28	136	4	168	43	47	21	111	<b>26</b>	122	19	167	<b>11</b>	58	<b>40</b>	109	555
07:30 AM	<b>34</b>	136	<b>9</b>	179	34	<b>63</b>	21	<b>118</b>	24	121	<b>25</b>	<b>170</b>	9	75	39	<b>123</b>	<b>590</b>
07:45 AM	30	146	4	180	24	54	<b>29</b>	107	24	106	17	147	6	<b>80</b>	27	113	547
Total Volume	110	586	20	716	147	200	92	439	93	475	77	645	31	255	138	424	2224
% App. Total	15.4	81.8	2.8		33.5	45.6	21		14.4	73.6	11.9		7.3	60.1	32.5		
PHF	.809	.872	.556	.947	.799	.794	.793	.930	.894	.942	.770	.949	.705	.797	.863	.862	.942



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				07:00 AM				07:15 AM			
+0 mins.	34	136	9	179	46	36	21	103	19	126	16	161	11	58	40	109
+15 mins.	30	146	4	180	43	47	21	111	26	122	19	167	9	75	39	123
+30 mins.	39	142	6	187	34	63	21	118	24	121	25	170	6	80	27	113
+45 mins.	31	146	6	183	24	54	29	107	24	106	17	147	10	67	34	111
Total Volume	134	570	25	729	147	200	92	439	93	475	77	645	36	280	140	456
% App. Total	18.4	78.2	3.4		33.5	45.6	21		14.4	73.6	11.9		7.9	61.4	30.7	
PHF	.859	.976	.694	.975	.799	.794	.793	.930	.894	.942	.770	.949	.818	.875	.875	.927

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

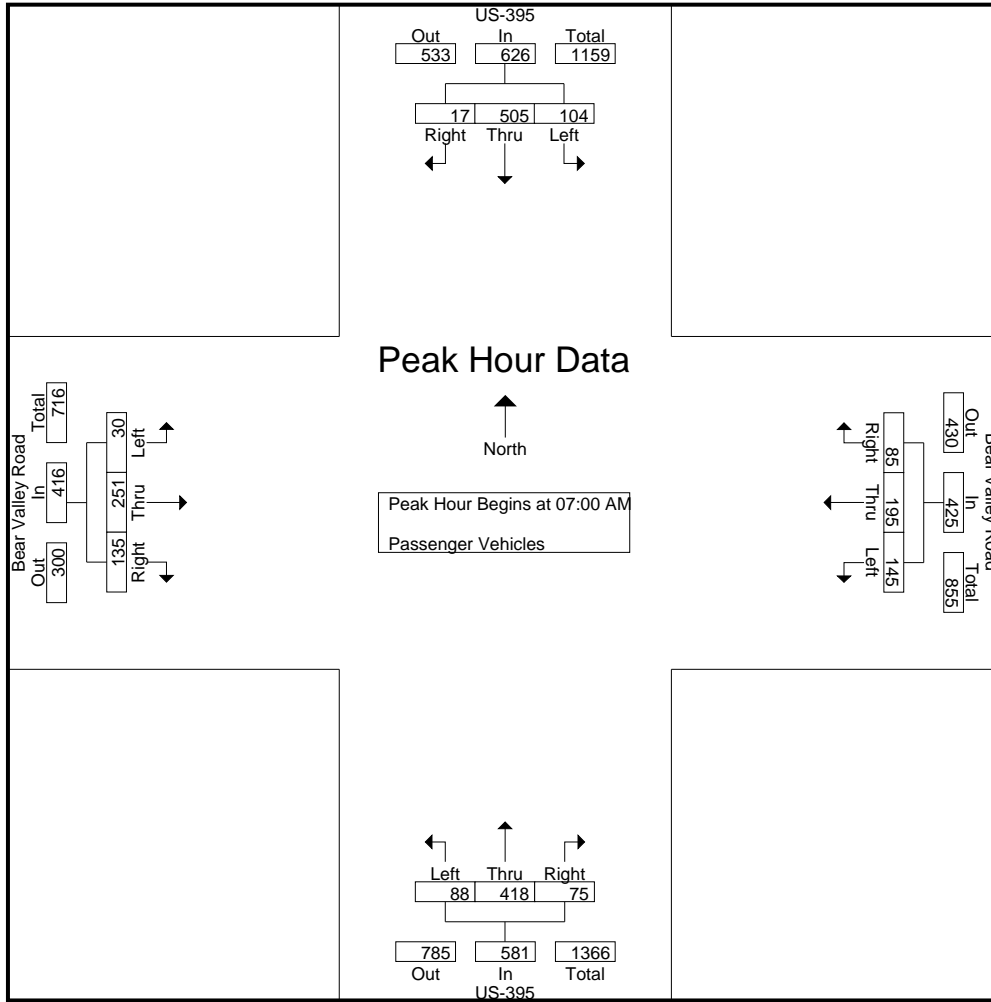
Groups Printed- Passenger Vehicles

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	16	146	3	165	45	35	20	100	16	115	16	147	5	40	32	77	489
07:15 AM	26	114	3	143	43	47	19	109	24	99	18	141	10	58	38	106	499
07:30 AM	33	120	8	161	34	61	19	114	24	108	24	156	9	74	38	121	552
07:45 AM	29	125	3	157	23	52	27	102	24	96	17	137	6	79	27	112	508
Total	104	505	17	626	145	195	85	425	88	418	75	581	30	251	135	416	2048
08:00 AM	38	112	5	155	30	49	11	90	10	71	16	97	10	65	31	106	448
08:15 AM	30	116	5	151	23	31	12	66	8	73	11	92	13	49	28	90	399
08:30 AM	28	99	2	129	31	36	19	86	5	87	21	113	9	54	22	85	413
08:45 AM	31	75	2	108	23	38	21	82	2	91	10	103	9	69	25	103	396
Total	127	402	14	543	107	154	63	324	25	322	58	405	41	237	106	384	1656
Grand Total	231	907	31	1169	252	349	148	749	113	740	133	986	71	488	241	800	3704
Apprch %	19.8	77.6	2.7		33.6	46.6	19.8		11.5	75.1	13.5		8.9	61	30.1		
Total %	6.2	24.5	0.8	31.6	6.8	9.4	4	20.2	3.1	20	3.6	26.6	1.9	13.2	6.5	21.6	

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	16	<b>146</b>	3	<b>165</b>	<b>45</b>	35	20	100	16	<b>115</b>	16	147	5	40	32	77	489
07:15 AM	26	114	3	143	43	47	19	109	<b>24</b>	99	18	141	<b>10</b>	58	<b>38</b>	106	499
07:30 AM	<b>33</b>	120	<b>8</b>	161	34	<b>61</b>	19	<b>114</b>	24	108	<b>24</b>	<b>156</b>	9	74	38	<b>121</b>	<b>552</b>
07:45 AM	29	125	3	157	23	52	<b>27</b>	102	24	96	17	137	6	<b>79</b>	27	112	508
Total Volume	104	505	17	626	145	195	85	425	88	418	75	581	30	251	135	416	2048
% App. Total	16.6	80.7	2.7		34.1	45.9	20		15.1	71.9	12.9		7.2	60.3	32.5		
PHF	.788	.865	.531	.948	.806	.799	.787	.932	.917	.909	.781	.931	.750	.794	.888	.860	.928

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 2



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

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	16	<b>146</b>	3	<b>165</b>	<b>45</b>	35	20	100	<b>16</b>	<b>115</b>	16	147	5	40	32	77
+15 mins.	26	114	3	143	43	47	19	109	<b>24</b>	99	18	141	<b>10</b>	58	<b>38</b>	106
+30 mins.	<b>33</b>	120	<b>8</b>	161	34	<b>61</b>	19	<b>114</b>	24	108	<b>24</b>	<b>156</b>	9	74	38	<b>121</b>
+45 mins.	29	125	3	157	23	52	<b>27</b>	102	24	96	17	137	6	<b>79</b>	27	112
Total Volume	104	505	17	626	145	195	85	425	88	418	75	581	30	251	135	416
% App. Total	16.6	80.7	2.7		34.1	45.9	20		15.1	71.9	12.9		7.2	60.3	32.5	
PHF	.788	.865	.531	.948	.806	.799	.787	.932	.917	.909	.781	.931	.750	.794	.888	.860



City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

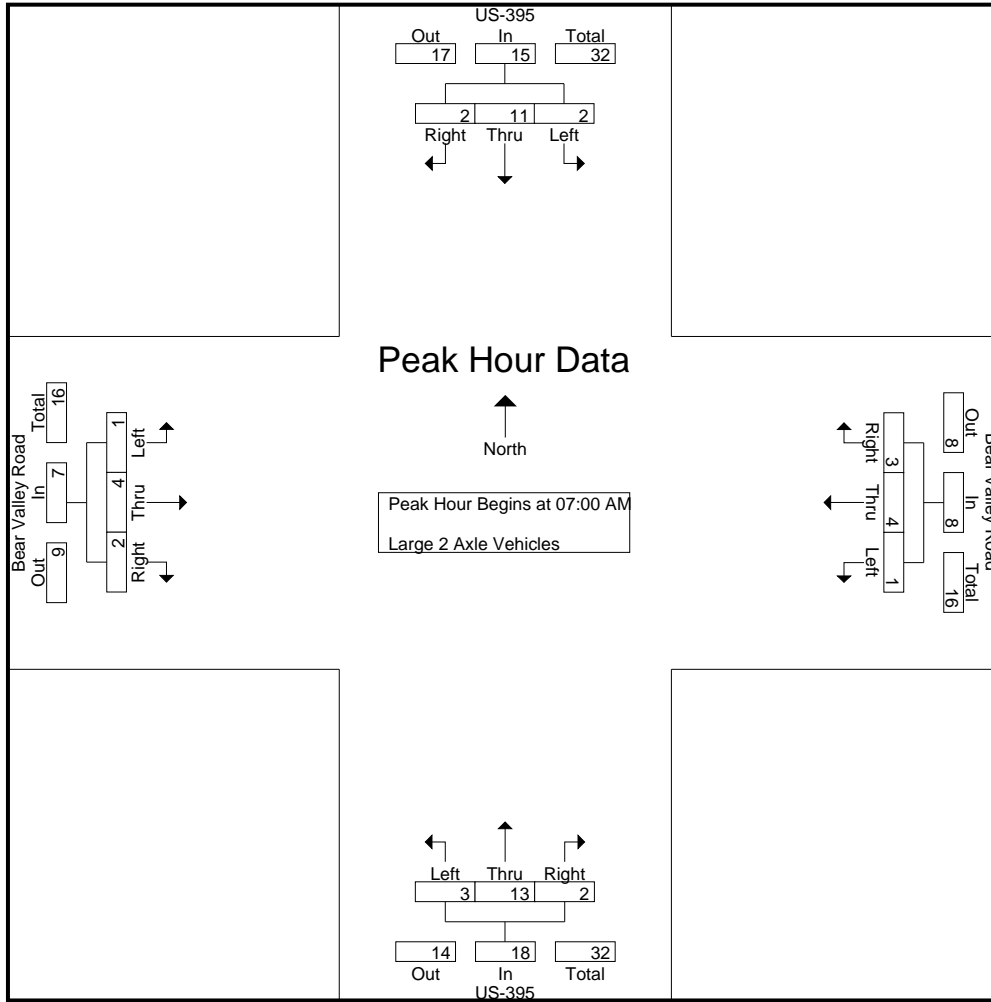
Groups Printed- Large 2 Axle Vehicles

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	0	4	0	4	0	1	1	2	2	5	0	7	0	2	0	2	15
07:15 AM	1	5	0	6	0	0	1	1	1	5	1	7	1	0	1	2	16
07:30 AM	0	1	1	2	0	2	0	2	0	3	1	4	0	1	1	2	10
07:45 AM	1	1	1	3	1	1	1	3	0	0	0	0	0	1	0	1	7
Total	2	11	2	15	1	4	3	8	3	13	2	18	1	4	2	7	48
08:00 AM	0	1	1	2	0	1	0	1	0	5	0	5	0	2	1	3	11
08:15 AM	0	6	0	6	0	2	1	3	1	7	2	10	1	0	0	1	20
08:30 AM	3	4	1	8	0	0	0	0	1	5	1	7	0	0	0	0	15
08:45 AM	0	6	0	6	0	3	0	3	1	3	0	4	1	1	1	3	16
Total	3	17	2	22	0	6	1	7	3	20	3	26	2	3	2	7	62
Grand Total	5	28	4	37	1	10	4	15	6	33	5	44	3	7	4	14	110
Apprch %	13.5	75.7	10.8		6.7	66.7	26.7		13.6	75	11.4		21.4	50	28.6		
Total %	4.5	25.5	3.6	33.6	0.9	9.1	3.6	13.6	5.5	30	4.5	40	2.7	6.4	3.6	12.7	

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	4	0	4	0	1	1	2	2	5	0	7	0	2	0	2	15
07:15 AM	1	5	0	6	0	0	1	1	1	5	1	7	1	0	1	2	16
07:30 AM	0	1	1	2	0	2	0	2	0	3	1	4	0	1	1	2	10
07:45 AM	1	1	1	3	1	1	1	3	0	0	0	0	0	1	0	1	7
Total Volume	2	11	2	15	1	4	3	8	3	13	2	18	1	4	2	7	48
% App. Total	13.3	73.3	13.3		12.5	50	37.5		16.7	72.2	11.1		14.3	57.1	28.6		
PHF	.500	.550	.500	.625	.250	.500	.750	.667	.375	.650	.500	.643	.250	.500	.500	.875	.750

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 2



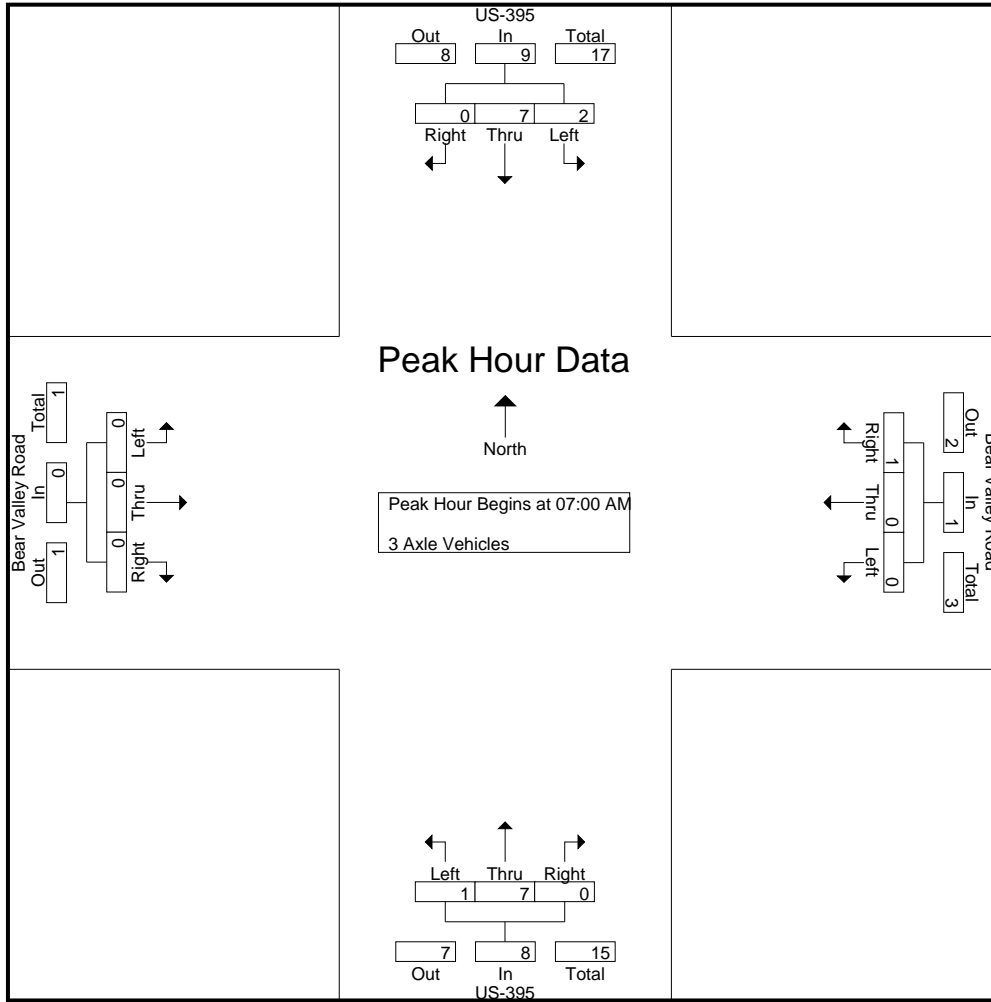
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	4	0	4	0	1	1	2	2	5	0	7	0	2	0	2
+15 mins.	1	5	0	6	0	0	1	1	1	5	1	7	1	0	1	2
+30 mins.	0	1	1	2	0	2	0	2	0	3	1	4	0	1	1	2
+45 mins.	1	1	1	3	1	1	1	3	0	0	0	0	0	1	0	1
Total Volume	2	11	2	15	1	4	3	8	3	13	2	18	1	4	2	7
% App. Total	13.3	73.3	13.3		12.5	50	37.5		16.7	72.2	11.1		14.3	57.1	28.6	
PHF	.500	.550	.500	.625	.250	.500	.750	.667	.375	.650	.500	.643	.250	.500	.500	.875



City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 2



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

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	1	1	0	2	0	0	0	0	1	3	0	4	0	0	0	0
+30 mins.	1	3	0	4	0	0	1	1	0	3	0	3	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	2	7	0	9	0	0	1	1	1	7	0	8	0	0	0	0
% App. Total	22.2	77.8	0		0	0	100		12.5	87.5	0		0	0	0	
PHF	.500	.583	.000	.563	.000	.000	.250	.250	.250	.583	.000	.500	.000	.000	.000	.000



City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

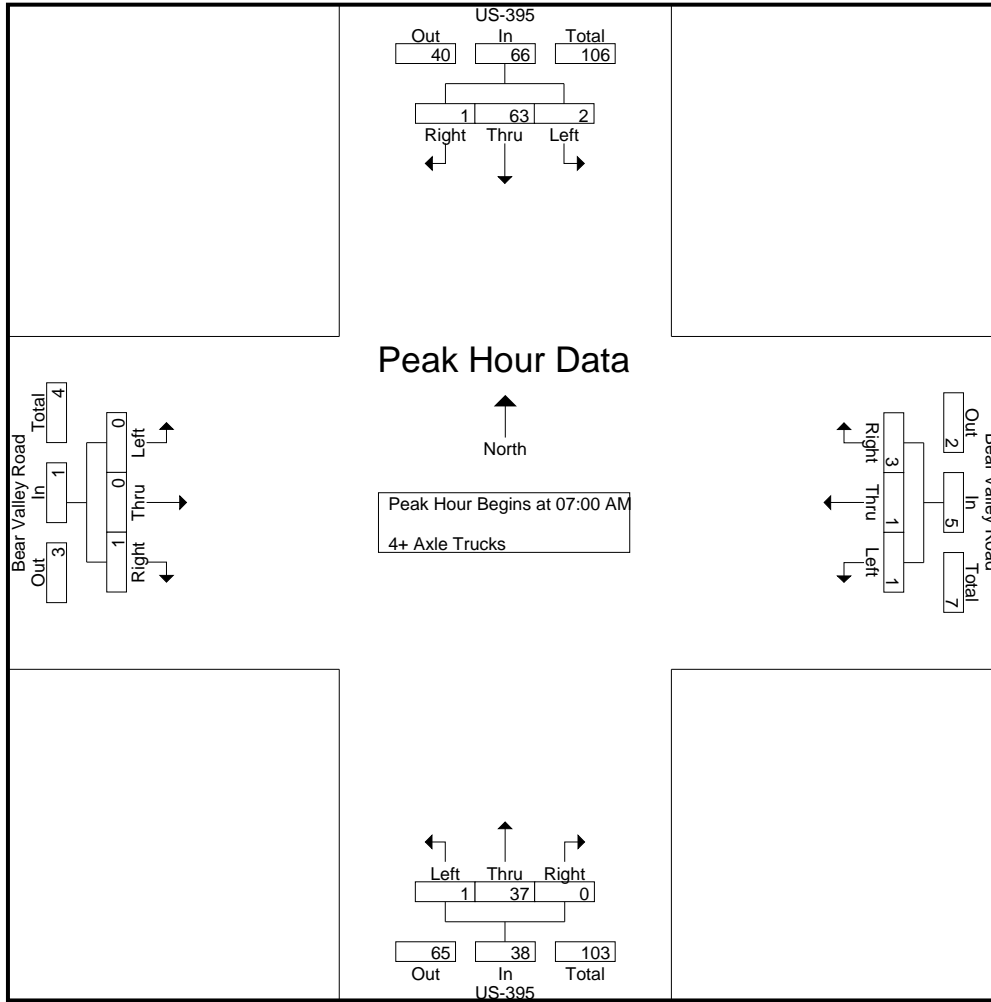
Groups Printed- 4+ Axle Trucks

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	2	16	0	18	1	0	0	1	1	6	0	7	0	0	0	0	26
07:15 AM	0	16	1	17	0	0	1	1	0	15	0	15	0	0	1	1	34
07:30 AM	0	12	0	12	0	0	1	1	0	7	0	7	0	0	0	0	20
07:45 AM	0	19	0	19	0	1	1	2	0	9	0	9	0	0	0	0	30
Total	2	63	1	66	1	1	3	5	1	37	0	38	0	0	1	1	110
08:00 AM	1	27	0	28	0	0	1	1	0	13	1	14	0	0	2	2	45
08:15 AM	1	19	1	21	0	1	1	2	0	14	0	14	0	0	1	1	38
08:30 AM	0	19	0	19	1	0	1	2	1	20	1	22	0	0	0	0	43
08:45 AM	1	14	0	15	0	0	0	0	0	15	1	16	0	0	0	0	31
Total	3	79	1	83	1	1	3	5	1	62	3	66	0	0	3	3	157
Grand Total	5	142	2	149	2	2	6	10	2	99	3	104	0	0	4	4	267
Apprch %	3.4	95.3	1.3		20	20	60		1.9	95.2	2.9		0	0	100		
Total %	1.9	53.2	0.7	55.8	0.7	0.7	2.2	3.7	0.7	37.1	1.1	39	0	0	1.5	1.5	

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	16	0	18	1	0	0	1	1	6	0	7	0	0	0	0	26
07:15 AM	0	16	1	17	0	0	1	1	0	15	0	15	0	0	1	1	34
07:30 AM	0	12	0	12	0	0	1	1	0	7	0	7	0	0	0	0	20
07:45 AM	0	19	0	19	0	1	1	2	0	9	0	9	0	0	0	0	30
Total Volume	2	63	1	66	1	1	3	5	1	37	0	38	0	0	1	1	110
% App. Total	3	95.5	1.5		20	20	60		2.6	97.4	0		0	0	100		
PHF	.250	.829	.250	.868	.250	.250	.750	.625	.250	.617	.000	.633	.000	.000	.250	.250	.809

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley AM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 2



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

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	2	16	0	18	1	0	0	1	1	6	0	7	0	0	0	0
+15 mins.	0	16	1	17	0	0	1	1	0	15	0	15	0	0	0	1
+30 mins.	0	12	0	12	0	0	1	1	0	7	0	7	0	0	0	0
+45 mins.	0	19	0	19	0	1	1	2	0	9	0	9	0	0	0	0
Total Volume	2	63	1	66	1	1	3	5	1	37	0	38	0	0	1	1
% App. Total	3	95.5	1.5		20	20	60		2.6	97.4	0		0	0	100	
PHF	.250	.829	.250	.868	.250	.250	.750	.625	.250	.617	.000	.633	.000	.000	.250	.250

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

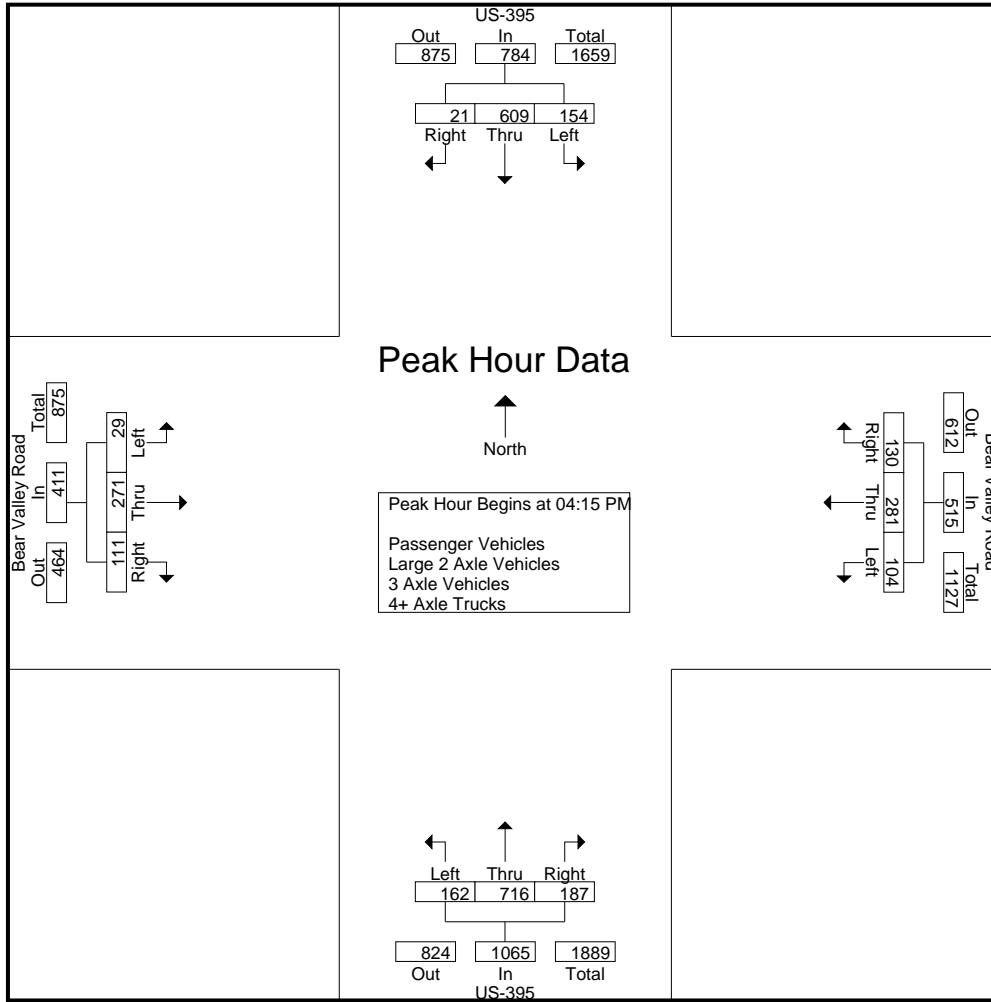
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	42	147	5	194	27	59	38	124	31	164	38	233	16	66	26	108	659
04:15 PM	46	168	3	217	33	85	32	150	32	197	41	270	12	74	24	110	747
04:30 PM	38	157	1	196	27	59	31	117	38	148	49	235	6	62	26	94	642
04:45 PM	34	134	11	179	24	72	36	132	46	173	44	263	5	71	35	111	685
Total	160	606	20	786	111	275	137	523	147	682	172	1001	39	273	111	423	2733
05:00 PM	36	150	6	192	20	65	31	116	46	198	53	297	6	64	26	96	701
05:15 PM	33	133	1	167	26	76	39	141	43	189	35	267	8	59	20	87	662
05:30 PM	32	117	9	158	17	66	47	130	44	187	61	292	8	52	14	74	654
05:45 PM	25	131	5	161	23	80	35	138	43	190	58	291	10	58	14	82	672
Total	126	531	21	678	86	287	152	525	176	764	207	1147	32	233	74	339	2689
Grand Total	286	1137	41	1464	197	562	289	1048	323	1446	379	2148	71	506	185	762	5422
Apprch %	19.5	77.7	2.8		18.8	53.6	27.6		15	67.3	17.6		9.3	66.4	24.3		
Total %	5.3	21	0.8	27	3.6	10.4	5.3	19.3	6	26.7	7	39.6	1.3	9.3	3.4	14.1	
Passenger Vehicles	276	964	41	1281	193	556	283	1032	317	1285	378	1980	68	498	178	744	5037
% Passenger Vehicles	96.5	84.8	100	87.5	98	98.9	97.9	98.5	98.1	88.9	99.7	92.2	95.8	98.4	96.2	97.6	92.9
Large 2 Axle Vehicles	2	11	0	13	3	4	4	11	2	24	1	27	3	7	4	14	65
% Large 2 Axle Vehicles	0.7	1	0	0.9	1.5	0.7	1.4	1	0.6	1.7	0.3	1.3	4.2	1.4	2.2	1.8	1.2
3 Axle Vehicles	2	4	0	6	1	0	1	2	4	4	0	8	0	1	2	3	19
% 3 Axle Vehicles	0.7	0.4	0	0.4	0.5	0	0.3	0.2	1.2	0.3	0	0.4	0	0.2	1.1	0.4	0.4
4+ Axle Trucks	6	158	0	164	0	2	1	3	0	133	0	133	0	0	1	1	301
% 4+ Axle Trucks	2.1	13.9	0	11.2	0	0.4	0.3	0.3	0	9.2	0	6.2	0	0	0.5	0.1	5.6

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
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																	
04:15 PM	46	168	3	217	33	85	32	150	32	197	41	270	12	74	24	110	747
04:30 PM	38	157	1	196	27	59	31	117	38	148	49	235	6	62	26	94	642
04:45 PM	34	134	11	179	24	72	36	132	46	173	44	263	5	71	35	111	685
05:00 PM	36	150	6	192	20	65	31	116	46	198	53	297	6	64	26	96	701
Total Volume	154	609	21	784	104	281	130	515	162	716	187	1065	29	271	111	411	2775
% App. Total	19.6	77.7	2.7		20.2	54.6	25.2		15.2	67.2	17.6		7.1	65.9	27		
PHF	.837	.906	.477	.903	.788	.826	.903	.858	.880	.904	.882	.896	.604	.916	.793	.926	.929

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 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				05:00 PM				04:00 PM			
+0 mins.	42	147	5	194	20	65	31	116	<b>46</b>	<b>198</b>	53	<b>297</b>	<b>16</b>	66	26	108
+15 mins.	<b>46</b>	<b>168</b>	3	<b>217</b>	<b>26</b>	76	39	<b>141</b>	43	189	35	267	12	<b>74</b>	24	110
+30 mins.	38	157	1	196	17	66	<b>47</b>	130	44	187	<b>61</b>	292	6	62	26	94
+45 mins.	34	134	<b>11</b>	179	23	<b>80</b>	35	138	43	190	58	291	5	71	<b>35</b>	<b>111</b>
Total Volume	160	606	20	786	86	287	152	525	176	764	207	1147	39	273	111	423
% App. Total	20.4	77.1	2.5		16.4	54.7	29		15.3	66.6	18		9.2	64.5	26.2	
PHF	.870	.902	.455	.906	.827	.897	.809	.931	.957	.965	.848	.965	.609	.922	.793	.953

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

Groups Printed- Passenger Vehicles

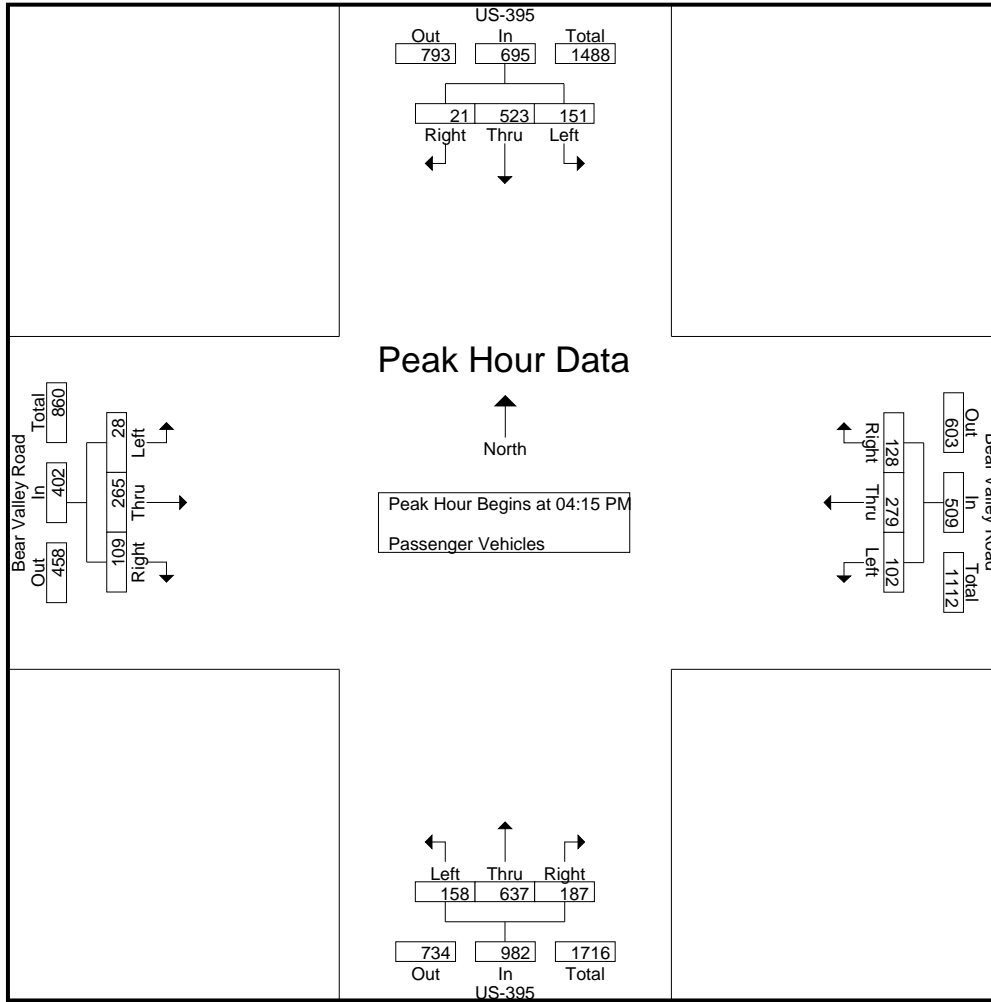
Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	41	120	5	166	27	58	38	123	30	142	38	210	16	66	23	105	604
04:15 PM	46	139	3	188	33	84	31	148	31	173	41	245	12	73	24	109	690
04:30 PM	37	139	1	177	25	59	30	114	37	125	49	211	6	61	25	92	594
04:45 PM	34	119	11	164	24	71	36	131	45	158	44	247	5	69	35	109	651
Total	158	517	20	695	109	272	135	516	143	598	172	913	39	269	107	415	2539
05:00 PM	34	126	6	166	20	65	31	116	45	181	53	279	5	62	25	92	653
05:15 PM	29	120	1	150	25	76	39	140	43	170	34	247	6	57	20	83	620
05:30 PM	30	100	9	139	16	64	44	124	43	163	61	267	8	52	12	72	602
05:45 PM	25	101	5	131	23	79	34	136	43	173	58	274	10	58	14	82	623
Total	118	447	21	586	84	284	148	516	174	687	206	1067	29	229	71	329	2498
Grand Total	276	964	41	1281	193	556	283	1032	317	1285	378	1980	68	498	178	744	5037
Apprch %	21.5	75.3	3.2		18.7	53.9	27.4		16	64.9	19.1		9.1	66.9	23.9		
Total %	5.5	19.1	0.8	25.4	3.8	11	5.6	20.5	6.3	25.5	7.5	39.3	1.4	9.9	3.5	14.8	

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	<b>46</b>	<b>139</b>	3	<b>188</b>	<b>33</b>	<b>84</b>	31	<b>148</b>	31	173	41	245	<b>12</b>	<b>73</b>	24	<b>109</b>	<b>690</b>
04:30 PM	37	139	1	177	25	59	30	114	37	125	49	211	6	61	25	92	594
04:45 PM	34	119	<b>11</b>	164	24	71	<b>36</b>	131	<b>45</b>	158	44	247	5	69	<b>35</b>	109	651
05:00 PM	34	126	6	166	20	65	31	116	45	<b>181</b>	<b>53</b>	<b>279</b>	5	62	25	92	653
Total Volume	151	523	21	695	102	279	128	509	158	637	187	982	28	265	109	402	2588
% App. Total	21.7	75.3	3		20	54.8	25.1		16.1	64.9	19		7	65.9	27.1		
PHF	.821	.941	.477	.924	.773	.830	.889	.860	.878	.880	.882	.880	.583	.908	.779	.922	.938



City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	<b>46</b>	<b>139</b>	3	<b>188</b>	<b>33</b>	<b>84</b>	31	<b>148</b>	31	173	41	245	<b>12</b>	<b>73</b>	24	<b>109</b>
+15 mins.	37	139	1	177	25	59	30	114	37	125	49	211	6	61	25	92
+30 mins.	34	119	<b>11</b>	164	24	71	<b>36</b>	131	<b>45</b>	158	44	247	5	69	<b>35</b>	109
+45 mins.	34	126	6	166	20	65	31	116	45	<b>181</b>	<b>53</b>	<b>279</b>	5	62	25	92
Total Volume	151	523	21	695	102	279	128	509	158	637	187	982	28	265	109	402
% App. Total	21.7	75.3	3		20	54.8	25.1		16.1	64.9	19		7	65.9	27.1	
PHF	.821	.941	.477	.924	.773	.830	.889	.860	.878	.880	.882	.880	.583	.908	.779	.922

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

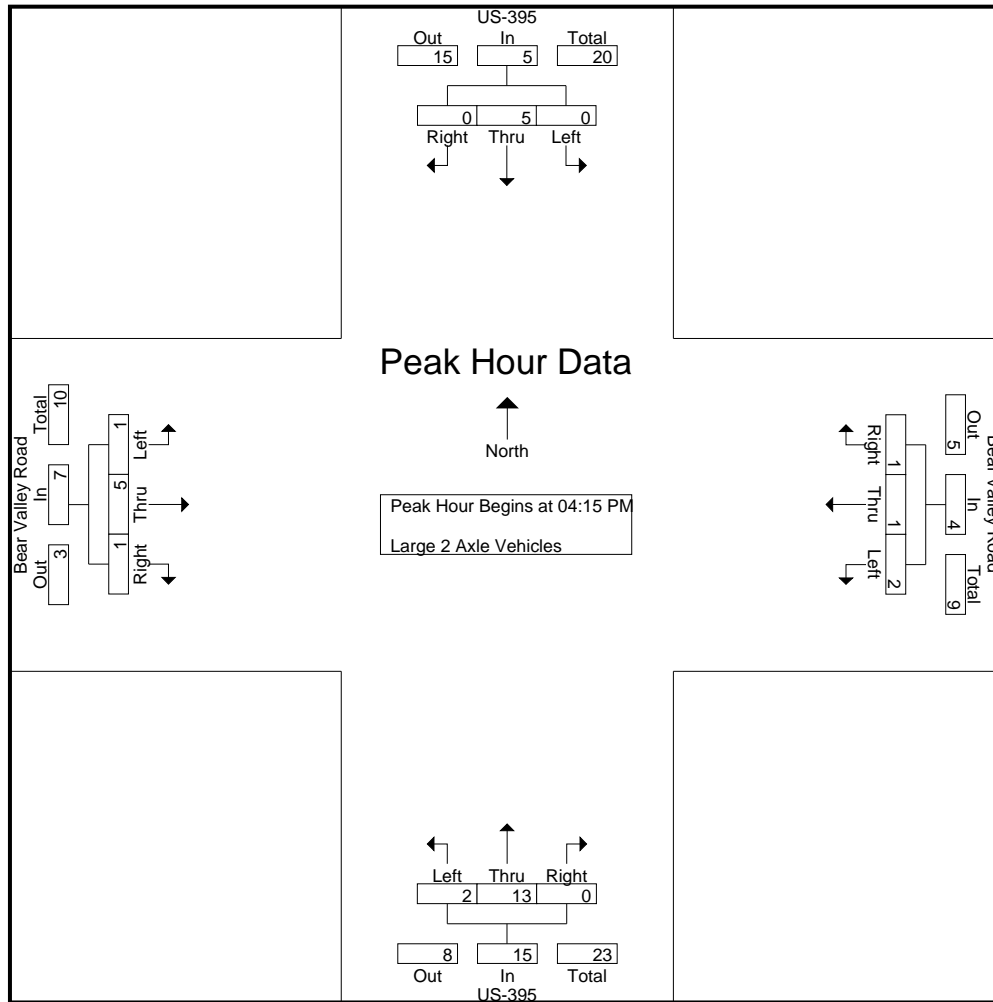
Groups Printed- Large 2 Axle Vehicles

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	1	2	0	3	0	1	0	1	0	3	0	3	0	0	2	2	9
04:15 PM	0	3	0	3	0	1	0	1	1	4	0	5	0	1	0	1	10
04:30 PM	0	0	0	0	2	0	1	3	0	4	0	4	0	0	1	1	8
04:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	2	0	2	4
Total	1	6	0	7	2	2	1	5	1	12	0	13	0	3	3	6	31
05:00 PM	0	1	0	1	0	0	0	0	1	4	0	5	1	2	0	3	9
05:15 PM	1	1	0	2	0	0	0	0	0	1	1	2	2	2	0	4	8
05:30 PM	0	1	0	1	1	2	2	5	0	3	0	3	0	0	1	1	10
05:45 PM	0	2	0	2	0	0	1	1	0	4	0	4	0	0	0	0	7
Total	1	5	0	6	1	2	3	6	1	12	1	14	3	4	1	8	34
Grand Total	2	11	0	13	3	4	4	11	2	24	1	27	3	7	4	14	65
Apprch %	15.4	84.6	0		27.3	36.4	36.4		7.4	88.9	3.7		21.4	50	28.6		
Total %	3.1	16.9	0	20	4.6	6.2	6.2	16.9	3.1	36.9	1.5	41.5	4.6	10.8	6.2	21.5	

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	3	0	3	0	1	0	1	1	4	0	5	0	1	0	1	10
04:30 PM	0	0	0	0	2	0	1	3	0	4	0	4	0	0	1	1	8
04:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	2	0	2	4
05:00 PM	0	1	0	1	0	0	0	0	1	4	0	5	1	2	0	3	9
Total Volume	0	5	0	5	2	1	1	4	2	13	0	15	1	5	1	7	31
% App. Total	0	100	0		50	25	25		13.3	86.7	0		14.3	71.4	14.3		
PHF	.000	.417	.000	.417	.250	.250	.250	.333	.500	.813	.000	.750	.250	.625	.250	.583	.775

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	3	0	3	0	1	0	1	1	4	0	5	0	1	0	1
+15 mins.	0	0	0	0	2	0	1	3	0	4	0	4	0	0	0	1
+30 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	2	0	2
+45 mins.	0	1	0	1	0	0	0	0	1	4	0	5	1	2	0	3
Total Volume	0	5	0	5	2	1	1	4	2	13	0	15	1	5	1	7
% App. Total	0	100	0		50	25	25		13.3	86.7	0		14.3	71.4	14.3	
PHF	.000	.417	.000	.417	.250	.250	.250	.333	.500	.813	.000	.750	.250	.625	.250	.583

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
 Page No : 1

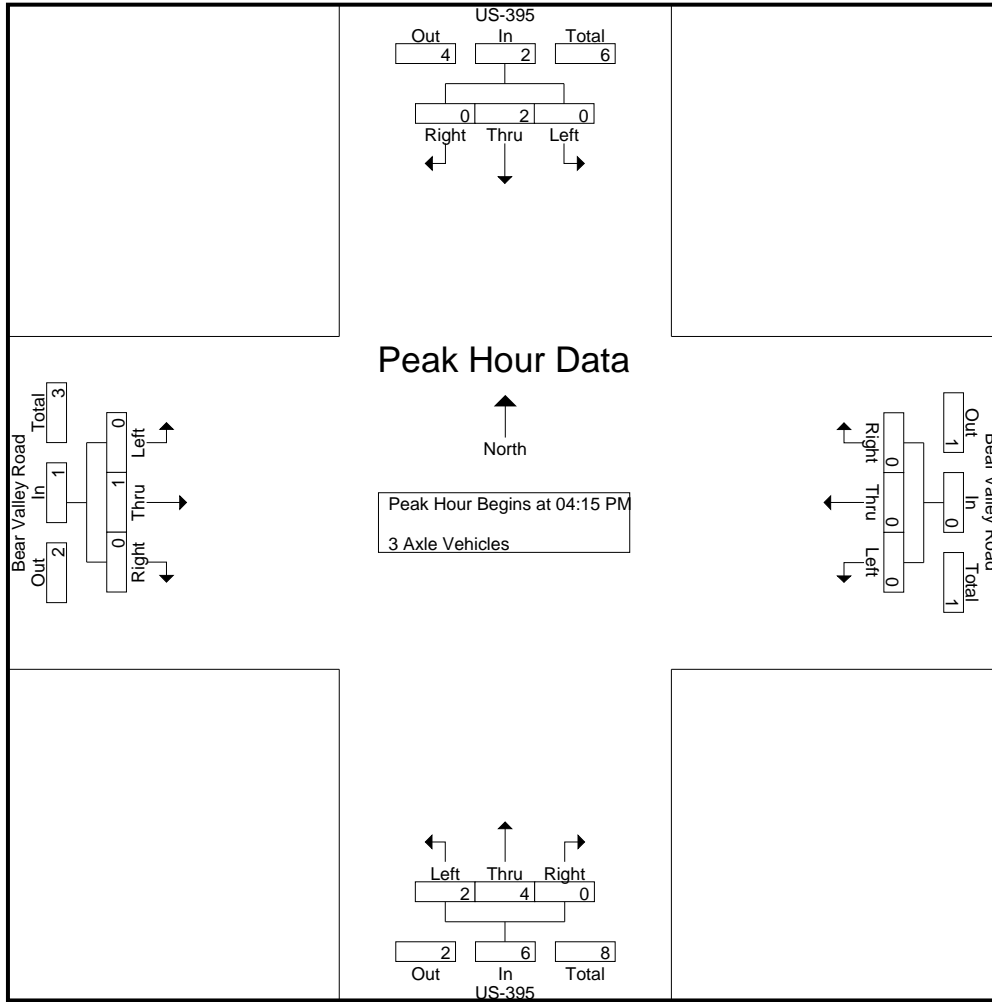
Groups Printed- 3 Axle Vehicles

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:30 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	1	0	1	4
04:45 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	3
Total	0	2	0	2	0	0	0	0	3	3	0	6	0	1	1	2	10
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:15 PM	2	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	1	1	1	0	0	1	0	0	1	1	3
05:45 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	2	2	0	4	1	0	1	2	1	1	0	2	0	0	1	1	9
Grand Total	2	4	0	6	1	0	1	2	4	4	0	8	0	1	2	3	19
Apprch %	33.3	66.7	0		50	0	50		50	50	0		0	33.3	66.7		
Total %	10.5	21.1	0	31.6	5.3	0	5.3	10.5	21.1	21.1	0	42.1	0	5.3	10.5	15.8	

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:30 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	1	0	1	4
04:45 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	2	4	0	6	0	1	0	1	9
% App. Total	0	100	0		0	0	0		33.3	66.7	0		0	100	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.500	1.00	.000	.750	.000	.250	.000	.250	.563

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
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Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	1	1	0	2	0	1	0	1
+30 mins.	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	2	4	0	6	0	1	0	1
% App. Total	0	100	0	0	0	0	0	0	33.3	66.7	0	0	0	100	0	0
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.500	1.000	.000	.750	.000	.250	.000	.250



City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
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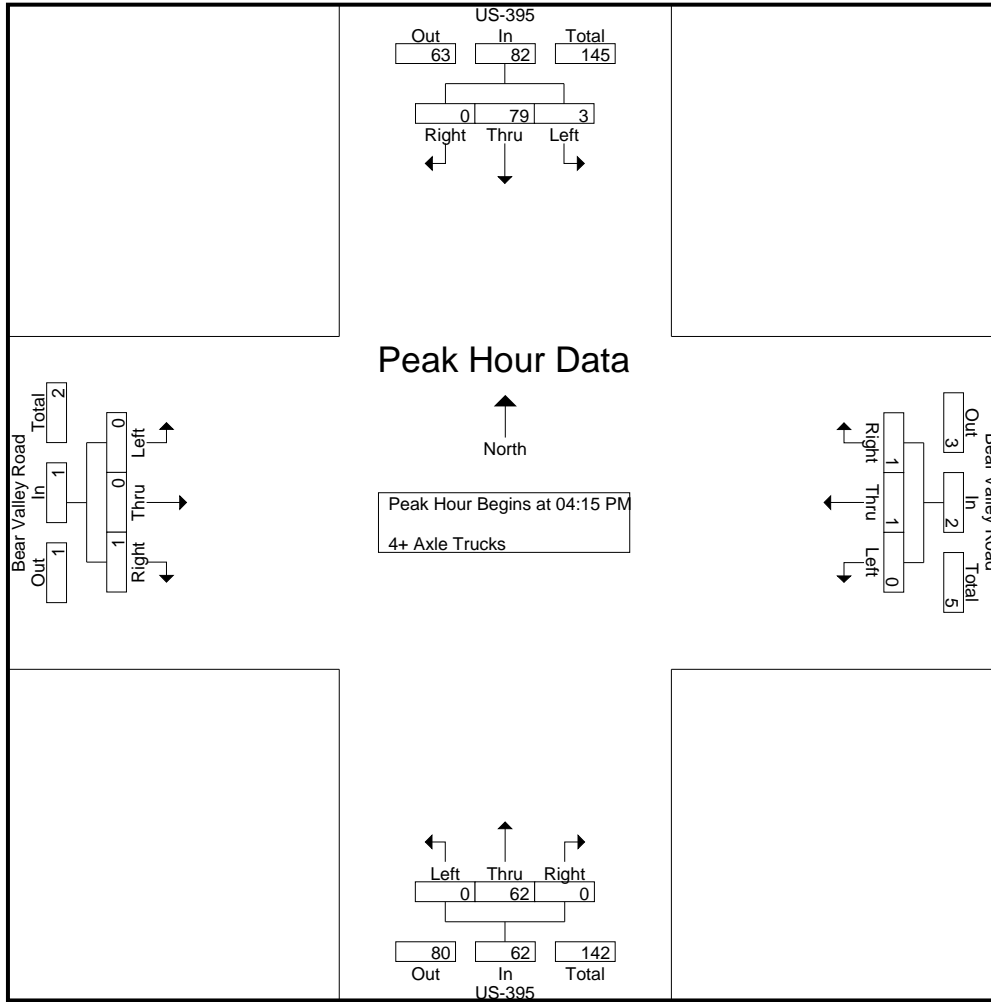
Groups Printed- 4+ Axle Trucks

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley 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	0	25	0	25	0	0	0	0	0	19	0	19	0	0	0	0	44
04:15 PM	0	26	0	26	0	0	1	1	0	19	0	19	0	0	0	0	46
04:30 PM	1	17	0	18	0	0	0	0	0	18	0	18	0	0	0	0	36
04:45 PM	0	13	0	13	0	1	0	1	0	13	0	13	0	0	0	0	27
Total	1	81	0	82	0	1	1	2	0	69	0	69	0	0	0	0	153
05:00 PM	2	23	0	25	0	0	0	0	0	12	0	12	0	0	1	1	38
05:15 PM	1	12	0	13	0	0	0	0	0	18	0	18	0	0	0	0	31
05:30 PM	2	16	0	18	0	0	0	0	0	21	0	21	0	0	0	0	39
05:45 PM	0	26	0	26	0	1	0	1	0	13	0	13	0	0	0	0	40
Total	5	77	0	82	0	1	0	1	0	64	0	64	0	0	1	1	148
Grand Total	6	158	0	164	0	2	1	3	0	133	0	133	0	0	1	1	301
Apprch %	3.7	96.3	0		0	66.7	33.3		0	100	0		0	0	100		
Total %	2	52.5	0	54.5	0	0.7	0.3	1	0	44.2	0	44.2	0	0	0.3	0.3	

Start Time	US-395 Southbound				Bear Valley Road Westbound				US-395 Northbound				Bear Valley Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	<b>26</b>	0	<b>26</b>	0	0	1	1	0	<b>19</b>	0	<b>19</b>	0	0	0	0	<b>46</b>
04:30 PM	1	17	0	18	0	0	0	0	0	18	0	18	0	0	0	0	36
04:45 PM	0	13	0	13	0	1	0	1	0	13	0	13	0	0	0	0	27
05:00 PM	<b>2</b>	23	0	25	0	0	0	0	0	12	0	12	0	0	<b>1</b>	<b>1</b>	38
Total Volume	3	79	0	82	0	1	1	2	0	62	0	62	0	0	1	1	147
% App. Total	3.7	96.3	0		0	50	50		0	100	0		0	0	100		
PHF	.375	.760	.000	.788	.000	.250	.250	.500	.000	.816	.000	.816	.000	.000	.250	.250	.799

City of Victorville  
 N/S: US-395  
 E/W: Bear Valley Road  
 Weather: Clear

File Name : 08\_VIC\_395\_Bear Valley PM  
 Site Code : 99918438  
 Start Date : 5/22/2018  
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Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	<b>26</b>	0	<b>26</b>	0	0	<b>1</b>	<b>1</b>	0	<b>19</b>	0	<b>19</b>	0	0	0	0
+15 mins.	1	17	0	18	0	0	0	0	0	18	0	18	0	0	0	0
+30 mins.	0	13	0	13	0	<b>1</b>	0	1	0	13	0	13	0	0	0	0
+45 mins.	<b>2</b>	23	0	25	0	0	0	0	0	12	0	12	0	0	<b>1</b>	<b>1</b>
Total Volume	3	79	0	82	0	1	1	2	0	62	0	62	0	0	1	1
% App. Total	3.7	96.3	0		0	50	50		0	100	0		0	0	100	
PHF	.375	.760	.000	.788	.000	.250	.250	.500	.000	.816	.000	.816	.000	.000	.250	.250

# APPENDIX B: VOLUME DEVELOPMENT WORKSHEETS

**Table B-1 - Existing Peak Hour Volumes  
(Intersections With Classification Counts)**

	AM Peak Hour					PM Peak Hour						
	Pass. Veh.	Trucks			Total PCE Volume	Pass. Veh.	Trucks			Total PCE Volume		
		2 Axle	3 Axle	4 Axle			PCE	2 Axle	3 Axle		4 Axle	PCE
<b>4 . US-395/Bear Valley Road</b>												
NBL	88	3	1	1	10	98	158	2	2	0	7	165
NBT	418	13	7	37	145	563	637	13	4	62	214	851
NBR	75	2	0	0	3	78	187	0	0	0	0	187
SBL	104	2	2	2	13	117	151	0	0	3	9	160
SBT	505	11	7	63	220	725	523	5	2	79	249	772
SBR	17	2	0	1	6	23	21	0	0	0	0	21
EBL	30	1	0	0	2	32	28	1	0	0	2	30
EBT	251	4	0	0	6	257	265	5	1	0	10	275
EBR	135	2	0	1	6	141	109	1	0	1	5	114
WBL	145	1	0	1	5	150	102	2	0	0	3	105
WBT	195	4	0	1	9	204	279	1	0	1	5	284
WBR	85	3	1	3	16	101	128	1	0	1	5	133
<b>North Leg</b>												
Approach	626	15	9	66	239	865	695	5	2	82	258	953
Departure	533	17	8	40	163	696	793	15	4	63	221	1,014
Total	1,159	32	17	106	402	1,561	1,488	20	6	145	479	1,967
<b>South Leg</b>												
Approach	581	18	8	38	158	739	982	15	6	62	221	1,203
Departure	785	14	7	65	231	1,016	734	8	2	80	257	991
Total	1,366	32	15	103	389	1,755	1,716	23	8	142	478	2,194
<b>East Leg</b>												
Approach	425	8	1	5	30	455	509	4	0	2	13	522
Departure	430	8	2	2	22	452	603	5	1	3	19	622
Total	855	16	3	7	52	907	1,112	9	1	5	32	1,144
<b>West Leg</b>												
Approach	416	7	0	1	14	430	402	7	1	1	17	419
Departure	300	9	1	3	25	325	458	3	2	1	12	470
Total	716	16	1	4	39	755	860	10	3	2	29	889
<b>Total Approaches</b>												
Approach	2,048	48	18	110	441	2,489	2,588	31	9	147	509	3,097
Departure	2,048	48	18	110	441	2,489	2,588	31	9	147	509	3,097
Total	4,096	96	36	220	882	4,978	5,176	62	18	294	1,018	6,194

Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
<b>4 . US-395/Bear Valley Road</b>								
NBL	88	5	93	5.4%	158	4	162	2.5%
NBT	418	57	475	12.0%	637	79	716	11.0%
NBR	75	2	77	2.6%	187	0	187	0.0%
SBL	104	6	110	5.5%	151	3	154	1.9%
SBT	505	81	586	13.8%	523	86	609	14.1%
SBR	17	3	20	15.0%	21	0	21	0.0%
EBL	30	1	31	3.2%	28	1	29	3.4%
EBT	251	4	255	1.6%	265	6	271	2.2%
EBR	135	3	138	2.2%	109	2	111	1.8%
WBL	145	2	147	1.4%	102	2	104	1.9%
WBT	195	5	200	2.5%	279	2	281	0.7%
WBR	85	7	92	7.6%	128	2	130	1.5%
North Leg								
Approach	626	90	716		695	89	784	
Departure	533	65	598		793	82	875	
Total	1,159	155	1,314	11.8%	1,488	171	1,659	10.3%
South Leg								
Approach	581	64	645		982	83	1,065	
Departure	785	86	871		734	90	824	
Total	1,366	150	1,516	9.9%	1,716	173	1,889	9.2%
East Leg								
Approach	425	14	439		509	6	515	
Departure	430	12	442		603	9	612	
Total	855	26	881	3.0%	1,112	15	1,127	1.3%
West Leg								
Approach	416	8	424		402	9	411	
Departure	300	13	313		458	6	464	
Total	716	21	737	2.8%	860	15	875	1.7%
Total Approaches								
Approach	2,048	176	2,224		2,588	187	2,775	
Departure	2,048	176	2,224		2,588	187	2,775	
Total	4,096	352	4,448	7.9%	5,176	374	5,550	6.7%

**Table B-3 - Existing Peak Hour Volumes  
(Intersections Without Classification Counts)**

	AM Peak Hour					PM Peak Hour						
	Total Veh.	Truck %	Pass. Veh.	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck PCE	Total PCE Vol		
<b>1 . Monte Vista Road/Olivine Road</b>												
NBL	1		1	0	0	1		1	0	0	1	
NBT	188	2.8%	183	5	9	192	173	1.7%	170	3	6	176
NBR	0		0	0	0	0		0	0	0	0	
NBL	0		0	0	0	0		0	0	0	0	
SBT	237	2.8%	230	7	13	243	203	1.7%	200	3	6	206
SBR	2		2	0	0	2	7		7	0	0	7
EBL	1		1	0	0	1	3		3	0	0	3
EBT	0		0	0	0	0		0	0	0	0	
EBR	7		7	0	0	7	7		7	0	0	7
WBL	0		0	0	0	0		0	0	0	0	
WBT	0		0	0	0	0		0	0	0	0	
WBR	0		0	0	0	0		0	0	0	0	
North Leg												
Approach	239		232	7	13	245	210		207	3	6	213
Departure	189		184	5	9	193	176		173	3	6	179
Total	428		416	12	22	438	386		380	6	12	392
South Leg												
Approach	189		184	5	9	193	174		171	3	6	177
Departure	244		237	7	13	250	210		207	3	6	213
Total	433		421	12	22	443	384		378	6	12	390
East Leg												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	0		0	0	0	0	0		0	0	0	0
Total	0		0	0	0	0	0		0	0	0	0
West Leg												
Approach	8		8	0	0	8	10		10	0	0	10
Departure	3		3	0	0	3	8		8	0	0	8
Total	11		11	0	0	11	18		18	0	0	18
Total Approaches												
Approach	436		424	12	22	446	394		388	6	12	400
Departure	436		424	12	22	446	394		388	6	12	400
Total	872		848	24	44	892	788		776	12	24	800



**Table B-3 - Existing Peak Hour Volumes  
(Intersections Without Classification Counts)**

	AM Peak Hour					PM Peak Hour						
	Total Veh.	Truck %	Pass. Veh.	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck PCE	Total PCE Vol		
<b>2 . Monte Vista Road/Lindero Road</b>												
NBL	0		0	0	0	1		1	0	0	1	
NBT	197	2.8%	191	6	11	202	180	1.7%	177	3	6	183
NBR	0		0	0	0	0		0	0	0	0	
NBL	0		0	0	0	0		0	0	0	0	
SBT	245	2.8%	238	7	13	251	221	1.7%	217	4	8	225
SBR	0		0	0	0	0	1		1	0	0	1
EBL	0		0	0	0	0		0	0	0	0	
EBT	0		0	0	0	0		0	0	0	0	
EBR	0		0	0	0	0	1		1	0	0	1
WBL	0		0	0	0	0		0	0	0	0	
WBT	0		0	0	0	0		0	0	0	0	
WBR	0		0	0	0	0		0	0	0	0	
<b>North Leg</b>												
Approach	245		238	7	13	251	222		218	4	8	226
Departure	197		191	6	11	202	180		177	3	6	183
Total	442		429	13	24	453	402		395	7	14	409
<b>South Leg</b>												
Approach	197		191	6	11	202	181		178	3	6	184
Departure	245		238	7	13	251	222		218	4	8	226
Total	442		429	13	24	453	403		396	7	14	410
<b>East Leg</b>												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	0		0	0	0	0	0		0	0	0	0
Total	0		0	0	0	0	0		0	0	0	0
<b>West Leg</b>												
Approach	0		0	0	0	0	1		1	0	0	1
Departure	0		0	0	0	0	2		2	0	0	2
Total	0		0	0	0	0	3		3	0	0	3
<b>Total Approaches</b>												
Approach	442		429	13	24	453	404		397	7	14	411
Departure	442		429	13	24	453	404		397	7	14	411
Total	884		858	26	48	906	808		794	14	28	822

**Table B-3 - Existing Peak Hour Volumes  
(Intersections Without Classification Counts)**

	AM Peak Hour					PM Peak Hour						
	Total Veh.	Truck %	Pass. Veh.	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck PCE	Total PCE Vol		
<b>3 . Monte Vista Road/Bear Valley Road</b>												
NBL	1		1	0	0	1		0	0	0	0	
NBT	0		0	0	0	0		0	0	0	0	
NBR	2		2	0	0	2		1	0	0	1	
SBL	167		167	0	0	167		163	0	0	163	
SBT	1		1	0	0	1		1	0	0	1	
SBR	74		74	0	0	74		65	0	0	65	
EBL	74		74	0	0	74		42	0	0	42	
EBT	214	2.8%	208	6	11	219	204	1.7%	201	3	6	207
EBR	1		1	0	0	1		1	0	0	1	
WBL	0		0	0	0	0		4	0	0	4	
WBT	222	2.8%	216	6	11	227	213	1.7%	209	4	8	217
WBR	124		124	0	0	124		121	0	0	121	
<b>North Leg</b>												
Approach	242		242	0	0	242	229		229	0	0	229
Departure	198		198	0	0	198	163		163	0	0	163
Total	440		440	0	0	440	392		392	0	0	392
<b>South Leg</b>												
Approach	3		3	0	0	3	1		1	0	0	1
Departure	2		2	0	0	2	6		6	0	0	6
Total	5		5	0	0	5	7		7	0	0	7
<b>East Leg</b>												
Approach	346		340	6	11	351	338		334	4	8	342
Departure	383		377	6	11	388	368		365	3	6	371
Total	729		717	12	22	739	706		699	7	14	713
<b>West Leg</b>												
Approach	289		283	6	11	294	247		244	3	6	250
Departure	297		291	6	11	302	278		274	4	8	282
Total	586		574	12	22	596	525		518	7	14	532
<b>Total Approaches</b>												
Approach	880		868	12	22	890	815		808	7	14	822
Departure	880		868	12	22	890	815		808	7	14	822
Total	1,760		1,736	24	44	1,780	1,630		1,616	14	28	1,644

**Table B-3 - Existing Peak Hour Volumes  
(Intersections Without Classification Counts)**

	AM Peak Hour					PM Peak Hour				
	Total	Truck	Pass.	Truck	Total	Total	Truck	Pass.	Truck	Total
	Veh.	%	Veh.	Truck PCE	PCE Vol	Veh.	%	Veh.	Truck PCE	PCE Vol
<b>4 . US-395/Bear Valley Road</b>										
NBL	0		0	0	0	0		0	0	0
NBT	0		0	0	0	0		0	0	0
NBR	0		0	0	0	0		0	0	0
SBL	0		0	0	0	0		0	0	0
SBT	0		0	0	0	0		0	0	0
SBR	0		0	0	0	0		0	0	0
EBL	0		0	0	0	0		0	0	0
EBT	0		0	0	0	0		0	0	0
EBR	0		0	0	0	0		0	0	0
WBL	0		0	0	0	0		0	0	0
WBT	0		0	0	0	0		0	0	0
WBR	0		0	0	0	0		0	0	0
North Leg										
Approach	0		0	0	0	0		0	0	0
Departure	0		0	0	0	0		0	0	0
Total	0		0	0	0	0		0	0	0
South Leg										
Approach	0		0	0	0	0		0	0	0
Departure	0		0	0	0	0		0	0	0
Total	0		0	0	0	0		0	0	0
East Leg										
Approach	0		0	0	0	0		0	0	0
Departure	0		0	0	0	0		0	0	0
Total	0		0	0	0	0		0	0	0
West Leg										
Approach	0		0	0	0	0		0	0	0
Departure	0		0	0	0	0		0	0	0
Total	0		0	0	0	0		0	0	0
Total Approaches										
Approach	0		0	0	0	0		0	0	0
Departure	0		0	0	0	0		0	0	0
Total	0		0	0	0	0		0	0	0

Table B-4 - Existing (2021) Peak Hour Volume Summary

	AM Peak Hour					PM Peak Hour				
	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP
<b>1 . Monte Vista Road/Olivine Road</b>										
NBL	1	0	1	0	1	1	0	1	0	1
NBT	192	12	204	16	220	176	11	187	11	198
NBR	0	0	0	14	14	0	0	0	48	48
SBL	0	0	0	4	4	0	0	0	15	15
SBT	243	15	258	5	263	206	12	218	18	236
SBR	2	0	2	0	2	7	0	7	0	7
EBL	1	0	1	0	1	3	0	3	0	3
EBT	0	0	0	0	0	0	0	0	0	0
EBR	7	0	7	0	7	7	0	7	0	7
WBL	0	0	0	43	43	0	0	0	28	28
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	13	13	0	0	0	9	9
North Leg										
Approach	245	15	260	9	269	213	12	225	33	258
Departure	193	12	205	29	234	179	11	190	20	210
Total	438	27	465	38	503	392	23	415	53	468
South Leg										
Approach	193	12	205	30	235	177	11	188	59	247
Departure	250	15	265	48	313	213	12	225	46	271
Total	443	27	470	78	548	390	23	413	105	518
East Leg										
Approach	0	0	0	56	56	0	0	0	37	37
Departure	0	0	0	18	18	0	0	0	63	63
Total	0	0	0	74	74	0	0	0	100	100
West Leg										
Approach	8	0	8	0	8	10	0	10	0	10
Departure	3	0	3	0	3	8	0	8	0	8
Total	11	0	11	0	11	18	0	18	0	18
Total Approaches										
Approach	446	27	473	95	568	400	23	423	129	552
Departure	446	27	473	95	568	400	23	423	129	552
Total	892	54	946	190	1,136	800	46	846	258	1,104

Table B-4 - Existing (2021) Peak Hour Volume Summary

	AM Peak Hour					PM Peak Hour				
	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP
<b>2 Monte Vista Road/Lindero Road</b>										
NBL	0	0	0	0	0	1	0	1	0	1
NBT	202	12	214	14	228	183	11	194	48	242
NBR	0	0	0	12	12	0	0	0	40	40
SBL	0	0	0	5	5	0	0	0	18	18
SBT	251	15	266	43	309	225	14	239	28	267
SBR	0	0	0	0	0	1	0	1	0	1
EBL	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	1	0	1	0	1
WBL	0	0	0	36	36	0	0	0	23	23
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	16	16	0	0	0	11	11
North Leg										
Approach	251	15	266	48	314	226	14	240	46	286
Departure	202	12	214	30	244	183	11	194	59	253
Total	453	27	480	78	558	409	25	434	105	539
South Leg										
Approach	202	12	214	26	240	184	11	195	88	283
Departure	251	15	266	79	345	226	14	240	51	291
Total	453	27	480	105	585	410	25	435	139	574
East Leg										
Approach	0	0	0	52	52	0	0	0	34	34
Departure	0	0	0	17	17	0	0	0	58	58
Total	0	0	0	69	69	0	0	0	92	92
West Leg										
Approach	0	0	0	0	0	1	0	1	0	1
Departure	0	0	0	0	0	2	0	2	0	2
Total	0	0	0	0	0	3	0	3	0	3
Total Approaches										
Approach	453	27	480	126	606	411	25	436	168	604
Departure	453	27	480	126	606	411	25	436	168	604
Total	906	54	960	252	1,212	822	50	872	336	1,208

Table B-4 - Existing (2021) Peak Hour Volume Summary

	AM Peak Hour					PM Peak Hour				
	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP
<b>3 Monte Vista Road/Bear Valley Road</b>										
NBL	1	0	1	0	1	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0
NBR	2	0	2	0	2	1	0	1	0	1
SBL	167	10	177	73	250	163	10	173	48	221
SBT	1	0	1	0	1	1	0	1	0	1
SBR	74	4	78	5	83	65	4	69	4	73
EBL	74	4	78	2	80	42	3	45	6	51
EBT	219	13	232	0	232	207	12	219	0	219
EBR	1	0	1	0	1	1	0	1	0	1
WBL	0	0	0	0	0	4	0	4	0	4
WBT	227	14	241	0	241	217	13	230	0	230
WBR	124	7	131	24	155	121	7	128	82	210
North Leg										
Approach	242	14	256	78	334	229	14	243	52	295
Departure	198	11	209	26	235	163	10	173	88	261
Total	440	25	465	104	569	392	24	416	140	556
South Leg										
Approach	3	0	3	0	3	1	0	1	0	1
Departure	2	0	2	0	2	6	0	6	0	6
Total	5	0	5	0	5	7	0	7	0	7
East Leg										
Approach	351	21	372	24	396	342	20	362	82	444
Departure	388	23	411	73	484	371	22	393	48	441
Total	739	44	783	97	880	713	42	755	130	885
West Leg										
Approach	294	17	311	2	313	250	15	265	6	271
Departure	302	18	320	5	325	282	17	299	4	303
Total	596	35	631	7	638	532	32	564	10	574
Total Approaches										
Approach	890	52	942	104	1,046	822	49	871	140	1,011
Departure	890	52	942	104	1,046	822	49	871	140	1,011
Total	1,780	104	1,884	208	2,092	1,644	98	1,742	280	2,022



Table B-4 - Existing (2021) Peak Hour Volume Summary

	AM Peak Hour					PM Peak Hour				
	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP	Exist Volumes	Growth	Exist W Growth	Project Trips	Exist WP
<b>4 US-395/Bear Valley Road</b>										
NBL	98	6	104	10	114	165	10	175	33	208
NBT	563	34	597	0	597	851	51	902	0	902
NBR	78	5	83	0	83	187	11	198	0	198
SBL	117	7	124	0	124	160	10	170	0	170
SBT	725	44	769	0	769	772	46	818	0	818
SBR	23	1	24	7	31	21	1	22	23	45
EBL	32	2	34	21	55	30	2	32	13	45
EBT	257	15	272	29	301	275	17	292	19	311
EBR	141	8	149	29	178	114	7	121	19	140
WBL	150	9	159	0	159	105	6	111	0	111
WBT	204	12	216	10	226	284	17	301	33	334
WBR	101	6	107	0	107	133	8	141	0	141
North Leg										
Approach	865	52	917	7	924	953	57	1,010	23	1,033
Departure	696	42	738	21	759	1,014	61	1,075	13	1,088
Total	1,561	94	1,655	28	1,683	1,967	118	2,085	36	2,121
South Leg										
Approach	739	45	784	10	794	1,203	72	1,275	33	1,308
Departure	1,016	61	1,077	29	1,106	991	59	1,050	19	1,069
Total	1,755	106	1,861	39	1,900	2,194	131	2,325	52	2,377
East Leg										
Approach	455	27	482	10	492	522	31	553	33	586
Departure	452	27	479	29	508	622	38	660	19	679
Total	907	54	961	39	1,000	1,144	69	1,213	52	1,265
West Leg										
Approach	430	25	455	79	534	419	26	445	51	496
Departure	325	19	344	27	371	470	28	498	89	587
Total	755	44	799	106	905	889	54	943	140	1,083
Total Approaches										
Approach	2,489	149	2,638	106	2,744	3,097	186	3,283	140	3,423
Departure	2,489	149	2,638	106	2,744	3,097	186	3,283	140	3,423
Total	4,978	298	5,276	212	5,488	6,194	372	6,566	280	6,846

Table B-5 - Opening Year (2023) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP
<b>1 . Monte Vista Road/Olivine Road</b>														
NBL	1	0	1	0	1	0	1	1	0	1	0	1	0	1
NBT	204	8	212	39	251	16	267	187	7	194	131	325	11	336
NBR	0	0	0	0	0	14	14	0	0	0	0	0	48	48
SBL	0	0	0	0	0	4	4	0	0	0	0	0	15	15
SBT	258	10	268	117	385	5	390	218	9	227	78	305	18	323
SBR	2	0	2	0	2	0	2	7	0	7	0	7	0	7
EBL	1	0	1	0	1	0	1	3	0	3	0	3	0	3
EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	7	0	7	0	7	0	7	7	0	7	0	7	0	7
WBL	0	0	0	0	0	43	43	0	0	0	0	0	28	28
WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	13	13	0	0	0	0	0	9	9
<b>North Leg</b>														
Approach	260	10	270	117	387	9	396	225	9	234	78	312	33	345
Departure	205	8	213	39	252	29	281	190	7	197	131	328	20	348
Total	465	18	483	156	639	38	677	415	16	431	209	640	53	693
<b>South Leg</b>														
Approach	205	8	213	39	252	30	282	188	7	195	131	326	59	385
Departure	265	10	275	117	392	48	440	225	9	234	78	312	46	358
Total	470	18	488	156	644	78	722	413	16	429	209	638	105	743
<b>East Leg</b>														
Approach	0	0	0	0	0	56	56	0	0	0	0	0	37	37
Departure	0	0	0	0	0	18	18	0	0	0	0	0	63	63
Total	0	0	0	0	0	74	74	0	0	0	0	0	100	100
<b>West Leg</b>														
Approach	8	0	8	0	8	0	8	10	0	10	0	10	0	10
Departure	3	0	3	0	3	0	3	8	0	8	0	8	0	8
Total	11	0	11	0	11	0	11	18	0	18	0	18	0	18
<b>Total Approaches</b>														
Approach	473	18	491	156	647	95	742	423	16	439	209	648	129	777
Departure	473	18	491	156	647	95	742	423	16	439	209	648	129	777
Total	946	36	982	312	1,294	190	1,484	846	32	878	418	1,296	258	1,554

Table B-5 - Opening Year (2023) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP
<b>2 Monte Vista Road/Lindero Road</b>														
NBL	0	0	0	0	0	0	0	1	0	1	0	1	0	1
NBT	214	9	223	39	262	14	276	194	8	202	131	333	48	381
NBR	0	0	0	0	0	12	12	0	0	0	0	0	40	40
SBL	0	0	0	0	0	5	5	0	0	0	0	0	18	18
SBT	266	11	277	117	394	43	437	239	10	249	78	327	28	355
SBR	0	0	0	0	0	0	0	1	0	1	0	1	0	1
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	1	0	1	0	1	0	1
WBL	0	0	0	0	0	36	36	0	0	0	0	0	23	23
WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	16	16	0	0	0	0	0	11	11
North Leg														
Approach	266	11	277	117	394	48	442	240	10	250	78	328	46	374
Departure	214	9	223	39	262	30	292	194	8	202	131	333	59	392
Total	480	20	500	156	656	78	734	434	18	452	209	661	105	766
South Leg														
Approach	214	9	223	39	262	26	288	195	8	203	131	334	88	422
Departure	266	11	277	117	394	79	473	240	10	250	78	328	51	379
Total	480	20	500	156	656	105	761	435	18	453	209	662	139	801
East Leg														
Approach	0	0	0	0	0	52	52	0	0	0	0	0	34	34
Departure	0	0	0	0	0	17	17	0	0	0	0	0	58	58
Total	0	0	0	0	0	69	69	0	0	0	0	0	92	92
West Leg														
Approach	0	0	0	0	0	0	0	1	0	1	0	1	0	1
Departure	0	0	0	0	0	0	0	2	0	2	0	2	0	2
Total	0	0	0	0	0	0	0	3	0	3	0	3	0	3
Total Approaches														
Approach	480	20	500	156	656	126	782	436	18	454	209	663	168	831
Departure	480	20	500	156	656	126	782	436	18	454	209	663	168	831
Total	960	40	1,000	312	1,312	252	1,564	872	36	908	418	1,326	336	1,662

Table B-5 - Opening Year (2023) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP
<b>3 Monte Vista Road/Bear Valley Road</b>														
NBL	1	0	1	0	1	0	1	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	2	0	2	0	2	0	2	1	0	1	0	1	0	1
SBL	177	7	184	117	301	73	374	173	7	180	78	258	48	306
SBT	1	0	1	0	1	0	1	1	0	1	0	1	0	1
SBR	78	3	81	0	81	5	86	69	3	72	0	72	4	76
EBL	78	3	81	0	81	2	83	45	2	47	0	47	6	53
EBT	232	9	241	0	241	0	241	219	9	228	0	228	0	228
EBR	1	0	1	0	1	0	1	1	0	1	0	1	0	1
WBL	0	0	0	0	0	0	0	4	0	4	0	4	0	4
WBT	241	10	251	0	251	0	251	230	9	239	0	239	0	239
WBR	131	5	136	39	175	24	199	128	5	133	131	264	82	346
North Leg														
Approach	256	10	266	117	383	78	461	243	10	253	78	331	52	383
Departure	209	8	217	39	256	26	282	173	7	180	131	311	88	399
Total	465	18	483	156	639	104	743	416	17	433	209	642	140	782
South Leg														
Approach	3	0	3	0	3	0	3	1	0	1	0	1	0	1
Departure	2	0	2	0	2	0	2	6	0	6	0	6	0	6
Total	5	0	5	0	5	0	5	7	0	7	0	7	0	7
East Leg														
Approach	372	15	387	39	426	24	450	362	14	376	131	507	82	589
Departure	411	16	427	117	544	73	617	393	16	409	78	487	48	535
Total	783	31	814	156	970	97	1,067	755	30	785	209	994	130	1,124
West Leg														
Approach	311	12	323	0	323	2	325	265	11	276	0	276	6	282
Departure	320	13	333	0	333	5	338	299	12	311	0	311	4	315
Total	631	25	656	0	656	7	663	564	23	587	0	587	10	597
Total Approaches														
Approach	942	37	979	156	1,135	104	1,239	871	35	906	209	1,115	140	1,255
Departure	942	37	979	156	1,135	104	1,239	871	35	906	209	1,115	140	1,255
Total	1,884	74	1,958	312	2,270	208	2,478	1,742	70	1,812	418	2,230	280	2,510

Table B-5 - Opening Year (2023) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP	Exist Volumes	Growth	OY Background	Cumul. Project Trips	OY NP	Project Trips	OY WP
<b>4 US-395/Bear Valley Road</b>														
NBL	104	4	108	70	178	10	188	175	7	182	237	419	33	452
NBT	597	24	621	65	686	0	686	902	36	938	83	1021	0	1021
NBR	83	3	86	73	159	0	159	198	8	206	48	254	0	254
SBL	124	5	129	7	136	0	136	170	7	177	5	182	0	182
SBT	769	31	800	60	860	0	860	818	33	851	87	938	0	938
SBR	24	1	25	48	73	7	80	22	1	23	165	188	23	211
EBL	34	1	35	146	181	21	202	32	1	33	98	131	13	144
EBT	272	11	283	77	360	29	389	292	12	304	51	355	19	374
EBR	149	6	155	211	366	29	395	121	5	126	140	266	19	285
WBL	159	6	165	24	189	0	189	111	4	115	81	196	0	196
WBT	216	9	225	26	251	10	261	301	12	313	87	400	33	433
WBR	107	4	111	3	114	0	114	141	6	147	9	156	0	156
<b>North Leg</b>														
Approach	917	37	954	115	1,069	7	1,076	1,010	41	1,051	257	1,308	23	1,331
Departure	738	29	767	214	981	21	1,002	1,075	43	1,118	190	1,308	13	1,321
Total	1,655	66	1,721	329	2,050	28	2,078	2,085	84	2,169	447	2,616	36	2,652
<b>South Leg</b>														
Approach	784	31	815	208	1,023	10	1,033	1,275	51	1,326	368	1,694	33	1,727
Departure	1,077	43	1,120	295	1,415	29	1,444	1,050	42	1,092	308	1,400	19	1,419
Total	1,861	74	1,935	503	2,438	39	2,477	2,325	93	2,418	676	3,094	52	3,146
<b>East Leg</b>														
Approach	482	19	501	53	554	10	564	553	22	575	177	752	33	785
Departure	479	19	498	157	655	29	684	660	27	687	104	791	19	810
Total	961	38	999	210	1,209	39	1,248	1,213	49	1,262	281	1,543	52	1,595
<b>West Leg</b>														
Approach	455	18	473	434	907	79	986	445	18	463	289	752	51	803
Departure	344	14	358	144	502	27	529	498	20	518	489	1,007	89	1,096
Total	799	32	831	578	1,409	106	1,515	943	38	981	778	1,759	140	1,899
<b>Total Approaches</b>														
Approach	2,638	105	2,743	810	3,553	106	3,659	3,283	132	3,415	1,091	4,506	140	4,646
Departure	2,638	105	2,743	810	3,553	106	3,659	3,283	132	3,415	1,091	4,506	140	4,646
Total	5,276	210	5,486	1,620	7,106	212	7,318	6,566	264	6,830	2,182	9,012	280	9,292

**Table B-6 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	OY NP Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>1 Monte Vista Road/Olivine Road</b>							
NBL	1	30	29	17	18	0	18
NBT	251	334	83	49	300	16	316
NBR	0	11	11	6	6	14	20
SBL	0	19	19	11	11	4	15
SBT	385	398	13	8	393	5	398
SBR	2	8	6	4	6	0	6
EBL	1	5	4	2	3	0	3
EBT	0	8	8	5	5	0	5
EBR	7	18	11	6	13	0	13
WBL	0	7	7	4	4	43	47
WBT	0	5	5	3	3	0	3
WBR	0	5	5	3	3	13	16
<b>North Leg</b>							
Approach	387	425	38	23	410	9	419
Departure	252	344	92	54	306	29	335
Total	639	769	130	77	716	38	754
<b>South Leg</b>							
Approach	252	375	123	72	324	30	354
Departure	392	423	31	18	410	48	458
Total	644	798	154	90	734	78	812
<b>East Leg</b>							
Approach	0	17	17	10	10	56	66
Departure	0	38	38	22	22	18	40
Total	0	55	55	32	32	74	106
<b>West Leg</b>							
Approach	8	31	23	13	21	0	21
Departure	3	43	40	24	27	0	27
Total	11	74	63	37	48	0	48
<b>Total Approaches</b>							
Approach	647	848	201	118	765	95	860
Departure	647	848	201	118	765	95	860
Total	1,294	1,696	402	236	1,530	190	1,720



**Table B-6 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	OY NP Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>2 Monte Vista Road/Lindero Road</b>							
NBL	0	10	10	6	6	0	6
NBT	262	380	118	69	331	14	345
NBR	0	0	0	0	0	12	12
SBL	0	0	0	0	0	5	5
SBT	394	406	12	7	401	43	444
SBR	0	3	3	2	2	0	2
EBL	0	2	2	1	1	0	1
EBT	0	0	0	0	0	0	0
EBR	0	5	5	3	3	0	3
WBL	0	0	0	0	0	36	36
WBT	0	0	0	0	0	0	0
WBR	0	0	0	0	0	16	16
<b>North Leg</b>							
Approach	394	409	15	9	403	48	451
Departure	262	382	120	70	332	30	362
Total	656	791	135	79	735	78	813
<b>South Leg</b>							
Approach	262	390	128	75	337	26	363
Departure	394	411	17	10	404	79	483
Total	656	801	145	85	741	105	846
<b>East Leg</b>							
Approach	0	0	0	0	0	52	52
Departure	0	0	0	0	0	17	17
Total	0	0	0	0	0	69	69
<b>West Leg</b>							
Approach	0	7	7	4	4	0	4
Departure	0	13	13	8	8	0	8
Total	0	20	20	12	12	0	12
<b>Total Approaches</b>							
Approach	656	806	150	88	744	126	870
Departure	656	806	150	88	744	126	870
Total	1,312	1,612	300	176	1,488	252	1,740

**Table B-6 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	OY NP Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>3</b>	<b>Monte Vista Road/Bear Valley Road</b>						
NBL	1	4	3	2	3	0	3
NBT	0	36	36	21	21	0	21
NBR	2	4	2	1	3	0	3
SBL	301	324	23	14	315	73	388
SBT	1	22	21	12	13	0	13
SBR	81	85	4	2	83	5	88
EBL	81	85	4	2	83	2	85
EBT	241	334	93	55	296	0	296
EBR	1	2	1	1	2	0	2
WBL	0	4	4	2	2	0	2
WBT	251	377	126	74	325	0	325
WBR	175	276	101	59	234	24	258
<b>North Leg</b>							
Approach	383	431	48	28	411	78	489
Departure	256	397	141	82	338	26	364
Total	639	828	189	110	749	104	853
<b>South Leg</b>							
Approach	3	44	41	24	27	0	27
Departure	2	28	26	15	17	0	17
Total	5	72	67	39	44	0	44
<b>East Leg</b>							
Approach	426	657	231	135	561	24	585
Departure	544	662	118	70	614	73	687
Total	970	1,319	349	205	1,175	97	1,272
<b>West Leg</b>							
Approach	323	421	98	58	381	2	383
Departure	333	466	133	78	411	5	416
Total	656	887	231	136	792	7	799
<b>Total Approaches</b>							
Approach	1,135	1,553	418	245	1,380	104	1,484
Departure	1,135	1,553	418	245	1,380	104	1,484
Total	2,270	3,106	836	490	2,760	208	2,968

**Table B-6 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	OY NP Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>4 US-395/Bear Valley Road</b>							
NBL	178	289	111	65	243	10	253
NBT	686	1,142	456	268	954	0	954
NBR	159	167	8	5	164	0	164
SBL	136	155	19	11	147	0	147
SBT	860	1,627	767	451	1,311	0	1,311
SBR	73	77	4	2	75	7	82
EBL	181	190	9	5	186	21	207
EBT	360	445	85	50	410	29	439
EBR	366	413	47	28	394	29	423
WBL	189	265	76	45	234	0	234
WBT	251	542	291	171	422	10	432
WBR	114	187	73	43	157	0	157
<b>North Leg</b>							
Approach	1,069	1,859	790	464	1,533	7	1,540
Departure	981	1,519	538	316	1,297	21	1,318
Total	2,050	3,378	1,328	780	2,830	28	2,858
<b>South Leg</b>							
Approach	1,023	1,598	575	338	1,361	10	1,371
Departure	1,415	2,305	890	524	1,939	29	1,968
Total	2,438	3,903	1,465	862	3,300	39	3,339
<b>East Leg</b>							
Approach	554	994	440	259	813	10	823
Departure	655	767	112	66	721	29	750
Total	1,209	1,761	552	325	1,534	39	1,573
<b>West Leg</b>							
Approach	907	1,048	141	83	990	79	1,069
Departure	502	908	406	238	740	27	767
Total	1,409	1,956	547	321	1,730	106	1,836
<b>Total Approaches</b>							
Approach	3,553	5,499	1,946	1,144	4,697	106	4,803
Departure	3,553	5,499	1,946	1,144	4,697	106	4,803
Total	7,106	10,998	3,892	2,288	9,394	212	9,606

**Table B-7 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	Existing Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>1 Monte Vista Road/Olivine Road</b>							
NBL	1	21	20	12	13	0	13
NBT	325	395	70	41	366	11	377
NBR	0	6	6	4	4	48	52
SBL	0	11	11	6	6	15	21
SBT	305	400	95	56	361	18	379
SBR	7	7	0	0	7	0	7
EBL	3	13	10	6	9	0	9
EBT	0	7	7	4	4	0	4
EBR	7	28	21	12	19	0	19
WBL	0	11	11	6	6	28	34
WBT	0	13	13	8	8	0	8
WBR	0	25	25	15	15	9	24
<b>North Leg</b>							
Approach	312	418	106	62	374	33	407
Departure	328	433	105	62	390	20	410
Total	640	851	211	124	764	53	817
<b>South Leg</b>							
Approach	326	422	96	57	383	59	442
Departure	312	439	127	74	386	46	432
Total	638	861	223	131	769	105	874
<b>East Leg</b>							
Approach	0	49	49	29	29	37	66
Departure	0	24	24	14	14	63	77
Total	0	73	73	43	43	100	143
<b>West Leg</b>							
Approach	10	48	38	22	32	0	32
Departure	8	41	33	20	28	0	28
Total	18	89	71	42	60	0	60
<b>Total Approaches</b>							
Approach	648	937	289	170	818	129	947
Departure	648	937	289	170	818	129	947
Total	1,296	1,875	579	340	1,636	258	1,894

**Table B-7 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	Existing Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>2 Monte Vista Road/Lindero Road</b>							
NBL	1	10	9	5	6	0	6
NBT	333	414	81	48	381	48	429
NBR	0	0	0	0	0	40	40
SBL	0	0	0	0	0	18	18
SBT	327	431	104	61	388	28	416
SBR	1	3	2	1	2	0	2
EBL	0	5	5	3	3	0	3
EBT	0	0	0	0	0	0	0
EBR	1	9	8	5	6	0	6
WBL	0	0	0	0	0	23	23
WBT	0	0	0	0	0	0	0
WBR	0	0	0	0	0	11	11
<b>North Leg</b>							
Approach	328	434	106	62	390	46	436
Departure	333	419	86	51	384	59	443
Total	661	853	192	113	774	105	879
<b>South Leg</b>							
Approach	334	424	90	53	387	88	475
Departure	328	440	112	66	394	51	445
Total	662	864	202	119	781	139	920
<b>East Leg</b>							
Approach	0	0	0	0	0	34	34
Departure	0	0	0	0	0	58	58
Total	0	0	0	0	0	92	92
<b>West Leg</b>							
Approach	1	14	13	8	9	0	9
Departure	2	13	11	6	8	0	8
Total	3	27	24	14	17	0	17
<b>Total Approaches</b>							
Approach	663	872	209	123	786	168	954
Departure	663	872	209	123	786	168	954
Total	1,326	1,744	418	246	1,572	336	1,908

**Table B-7 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	Existing Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>3 Monte Vista Road/Bear Valley Road</b>							
NBL	0	3	3	2	2	0	2
NBT	0	26	26	15	15	0	15
NBR	1	9	8	5	6	0	6
SBL	258	382	124	73	331	48	379
SBT	1	43	42	25	26	0	26
SBR	72	76	4	2	74	4	78
EBL	47	49	2	1	48	6	54
EBT	228	331	103	61	289	0	289
EBR	1	4	3	2	3	0	3
WBL	4	10	6	4	8	0	8
WBT	239	333	94	55	294	0	294
WBR	264	328	64	38	302	82	384
<b>North Leg</b>							
Approach	331	501	170	100	431	52	483
Departure	311	403	92	54	365	88	453
Total	642	904	262	154	796	140	936
<b>South Leg</b>							
Approach	1	38	37	22	23	0	23
Departure	6	57	51	31	37	0	37
Total	7	95	88	53	60	0	60
<b>East Leg</b>							
Approach	507	671	164	97	604	82	686
Departure	487	722	235	139	626	48	674
Total	994	1,393	399	236	1,230	130	1,360
<b>West Leg</b>							
Approach	276	384	108	64	340	6	346
Departure	311	412	101	59	370	4	374
Total	587	796	209	123	710	10	720
<b>Total Approaches</b>							
Approach	1,115	1,594	479	283	1,398	140	1,538
Departure	1,115	1,594	479	283	1,398	140	1,538
Total	2,230	3,188	958	566	2,796	280	3,076

**Table B-7 - Year 2033 With Project  
A.M. Peak Hour Volume Summary**

	Existing Total PCE	2,040 Total PCE	2,023 2,040 Growth	2023- 2,033 Growth	2033 Without Project	Project Trips	2033 With Project
<b>4 US-395/Bear Valley Road</b>							
NBL	419	475	56	33	452	33	485
NBT	1,021	1,839	818	481	1,502	0	1,502
NBR	254	263	9	5	259	0	259
SBL	182	246	64	38	220	0	220
SBT	938	1,564	626	368	1,306	0	1,306
SBR	188	197	9	6	194	23	217
EBL	131	138	7	4	135	13	148
EBT	355	628	273	161	516	19	535
EBR	266	345	79	46	312	19	331
WBL	196	206	10	6	202	0	202
WBT	400	544	144	85	485	33	518
WBR	156	193	37	22	178	0	178
<b>North Leg</b>							
Approach	1,308	2,007	699	412	1,720	23	1,743
Departure	1,308	2,170	862	507	1,815	13	1,828
Total	2,616	4,177	1,561	919	3,535	36	3,571
<b>South Leg</b>							
Approach	1,694	2,577	883	519	2,213	33	2,246
Departure	1,400	2,115	715	420	1,820	19	1,839
Total	3,094	4,692	1,598	939	4,033	52	4,085
<b>East Leg</b>							
Approach	752	943	191	113	865	33	898
Departure	791	1,137	346	204	995	19	1,014
Total	1,543	2,080	537	317	1,860	52	1,912
<b>West Leg</b>							
Approach	752	1,111	359	211	963	51	1,014
Departure	1,007	1,216	209	124	1,131	89	1,220
Total	1,759	2,327	568	335	2,094	140	2,234
<b>Total Approaches</b>							
Approach	4,506	6,638	2,132	1,255	5,761	140	5,901
Departure	4,506	6,638	2,132	1,255	5,761	140	5,901
Total	9,012	13,276	4,264	2,510	11,522	280	11,802



# APPENDIX C: LEVEL OF SERVICE WORKSHEETS

HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

06/24/2021

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	7	0	0	0	1	204	0	0	258	2
Future Vol, veh/h	1	0	7	0	0	0	1	204	0	0	258	2
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	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	0	8	0	0	0	1	243	0	0	307	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	553	553	308	557	554	243	309	0	0	243	0	0
Stage 1	308	308	-	245	245	-	-	-	-	-	-	-
Stage 2	245	245	-	312	309	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	447	444	737	444	443	801	1263	-	-	1335	-	-
Stage 1	706	664	-	763	707	-	-	-	-	-	-	-
Stage 2	763	707	-	703	663	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	447	444	737	439	443	801	1263	-	-	1335	-	-
Mov Cap-2 Maneuver	447	444	-	439	443	-	-	-	-	-	-	-
Stage 1	705	664	-	762	706	-	-	-	-	-	-	-
Stage 2	762	706	-	695	663	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1263	-	-	682	-	1335	-
HCM Lane V/C Ratio	0.001	-	-	0.014	-	-	-
HCM Control Delay (s)	7.9	0	-	10.4	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

06/24/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	214	0	0	266	0
Future Vol, veh/h	0	0	0	0	0	0	0	214	0	0	266	0
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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0	0	243	0	0	302	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	545	545	302	545	545	243	302	0	0	243	0	0
Stage 1	302	302	-	243	243	-	-	-	-	-	-	-
Stage 2	243	243	-	302	302	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	452	449	742	452	449	801	1270	-	-	1335	-	-
Stage 1	712	668	-	765	708	-	-	-	-	-	-	-
Stage 2	765	708	-	712	668	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	452	449	742	452	449	801	1270	-	-	1335	-	-
Mov Cap-2 Maneuver	452	449	-	452	449	-	-	-	-	-	-	-
Stage 1	712	668	-	765	708	-	-	-	-	-	-	-
Stage 2	765	708	-	712	668	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1270	-	-	-	1335	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	-	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

06/24/2021

Intersection												
Int Delay, s/veh	22.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	78	232	1	0	241	131	1	0	2	177	1	78
Future Vol, veh/h	78	232	1	0	241	131	1	0	2	177	1	78
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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	95	283	1	0	294	160	1	0	2	216	1	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	454	0	0	284	0	0	896	928	284	849	848	374
Stage 1	-	-	-	-	-	-	474	474	-	374	374	-
Stage 2	-	-	-	-	-	-	422	454	-	475	474	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1117	-	-	1290	-	-	263	270	760	283	301	677
Stage 1	-	-	-	-	-	-	575	561	-	651	621	-
Stage 2	-	-	-	-	-	-	613	573	-	574	561	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1117	-	-	1290	-	-	208	243	760	260	271	677
Mov Cap-2 Maneuver	-	-	-	-	-	-	208	243	-	260	271	-
Stage 1	-	-	-	-	-	-	517	504	-	585	621	-
Stage 2	-	-	-	-	-	-	526	573	-	514	504	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.1			0			14			81.3		
HCM LOS							B			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	1117	-	-	1290	-	-	320
HCM Lane V/C Ratio	0.009	0.085	-	-	-	-	-	0.976
HCM Control Delay (s)	14	8.5	0	-	0	-	-	81.3
HCM Lane LOS	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	10.3

# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

06/24/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	272	149	159	216	107	104	597	83	124	769	24
Future Volume (veh/h)	34	272	149	159	216	107	104	597	83	124	769	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	36	289	159	169	230	114	111	635	88	132	818	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	143	535	239	235	730	326	195	1696	757	198	1703	760
Arrive On Green	0.09	0.16	0.16	0.15	0.21	0.21	0.12	0.50	0.50	0.12	0.50	0.50
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	36	289	159	169	230	114	111	635	88	132	818	26
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	2.1	7.8	9.8	10.0	5.7	6.4	6.5	11.5	3.1	7.8	15.8	0.9
Cycle Q Clear(g_c), s	2.1	7.8	9.8	10.0	5.7	6.4	6.5	11.5	3.1	7.8	15.8	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	535	239	235	730	326	195	1696	757	198	1703	760
V/C Ratio(X)	0.25	0.54	0.67	0.72	0.32	0.35	0.57	0.37	0.12	0.67	0.48	0.03
Avail Cap(c_a), veh/h	210	718	320	308	923	412	227	1696	757	259	1703	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	38.9	39.7	40.8	33.2	33.4	41.5	15.6	13.5	41.9	16.6	12.8
Incr Delay (d2), s/veh	0.9	0.9	3.2	5.5	0.2	0.6	2.6	0.6	0.3	4.1	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.3	3.9	4.3	2.4	2.4	2.7	4.5	1.1	3.3	6.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	39.7	42.9	46.3	33.4	34.1	44.1	16.2	13.8	46.0	17.5	12.9
LnGrp LOS	D	D	D	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		484			513			834			976	
Approach Delay, s/veh		41.0			37.8			19.7			21.3	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	51.6	16.5	17.6	14.0	51.8	10.8	23.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	33.5	16.5	18.5	11.5	35.5	10.5	24.5				
Max Q Clear Time (g_c+I1), s	9.8	13.5	12.0	11.8	8.5	17.8	4.1	8.4				
Green Ext Time (p_c), s	0.1	4.6	0.2	1.3	0.1	5.6	0.0	1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				27.2								
HCM 6th LOS				C								



HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

06/24/2021

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	7	0	0	0	1	187	0	0	218	7
Future Vol, veh/h	3	0	7	0	0	0	1	187	0	0	218	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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	0	8	0	0	0	1	210	0	0	245	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	461	461	249	465	465	210	253	0	0	210	0	0
Stage 1	249	249	-	212	212	-	-	-	-	-	-	-
Stage 2	212	212	-	253	253	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	514	500	795	511	498	835	1324	-	-	1373	-	-
Stage 1	759	704	-	795	731	-	-	-	-	-	-	-
Stage 2	795	731	-	756	701	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	513	500	795	505	498	835	1324	-	-	1373	-	-
Mov Cap-2 Maneuver	513	500	-	505	498	-	-	-	-	-	-	-
Stage 1	758	704	-	794	730	-	-	-	-	-	-	-
Stage 2	794	730	-	749	701	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1324	-	-	682	-	1373	-
HCM Lane V/C Ratio	0.001	-	-	0.016	-	-	-
HCM Control Delay (s)	7.7	0	-	10.4	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-



HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

06/24/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	0	0	0	1	194	0	0	239	1
Future Vol, veh/h	0	0	1	0	0	0	1	194	0	0	239	1
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	1	0	0	0	1	206	0	0	254	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	463	463	255	463	463	206	255	0	0	206	0	0
Stage 1	255	255	-	208	208	-	-	-	-	-	-	-
Stage 2	208	208	-	255	255	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	513	499	789	513	499	840	1322	-	-	1377	-	-
Stage 1	754	700	-	799	734	-	-	-	-	-	-	-
Stage 2	799	734	-	754	700	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	512	499	789	512	499	840	1322	-	-	1377	-	-
Mov Cap-2 Maneuver	512	499	-	512	499	-	-	-	-	-	-	-
Stage 1	753	700	-	798	733	-	-	-	-	-	-	-
Stage 2	798	733	-	753	700	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1322	-	-	789	-	1377	-
HCM Lane V/C Ratio	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	7.7	0	-	9.6	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

06/24/2021

Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	219	1	4	230	128	0	0	1	173	1	69
Future Vol, veh/h	45	219	1	4	230	128	0	0	1	173	1	69
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	49	238	1	4	250	139	0	0	1	188	1	75

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	389	0	0	239	0	0	703	734	239	665	665	320
Stage 1	-	-	-	-	-	-	337	337	-	328	328	-
Stage 2	-	-	-	-	-	-	366	397	-	337	337	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1181	-	-	1340	-	-	355	350	805	376	383	725
Stage 1	-	-	-	-	-	-	681	645	-	689	651	-
Stage 2	-	-	-	-	-	-	657	607	-	681	645	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1181	-	-	1340	-	-	305	332	805	361	363	725
Mov Cap-2 Maneuver	-	-	-	-	-	-	305	332	-	361	363	-
Stage 1	-	-	-	-	-	-	648	614	-	656	648	-
Stage 2	-	-	-	-	-	-	586	605	-	647	614	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0.1			9.5			26.9		
HCM LOS							A			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	805	1181	-	-	1340	-	-	421
HCM Lane V/C Ratio	0.001	0.041	-	-	0.003	-	-	0.627
HCM Control Delay (s)	9.5	8.2	0	-	7.7	0	-	26.9
HCM Lane LOS	A	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	4.2

# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

06/24/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	32	292	121	111	301	141	175	902	198	170	818	22
Future Volume (veh/h)	32	292	121	111	301	141	175	902	198	170	818	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	34	314	130	119	324	152	188	970	213	183	880	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	505	225	185	612	273	253	1790	798	227	1735	774
Arrive On Green	0.08	0.15	0.15	0.11	0.18	0.18	0.16	0.52	0.52	0.14	0.51	0.51
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	34	314	130	119	324	152	188	970	213	183	880	24
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	2.1	9.2	6.1	7.5	9.2	9.7	11.9	20.2	4.8	11.7	18.3	0.8
Cycle Q Clear(g_c), s	2.1	9.2	6.1	7.5	9.2	9.7	11.9	20.2	4.8	11.7	18.3	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	505	225	185	612	273	253	1790	798	227	1735	774
V/C Ratio(X)	0.25	0.62	0.58	0.64	0.53	0.56	0.74	0.54	0.27	0.81	0.51	0.03
Avail Cap(c_a), veh/h	221	895	399	197	844	376	424	1790	798	227	1735	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	42.8	21.9	45.3	39.8	40.1	43.1	17.0	4.8	44.6	17.5	13.2
Incr Delay (d2), s/veh	1.0	1.3	2.3	6.5	0.7	1.8	4.3	1.2	0.8	18.9	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.0	3.2	3.3	3.9	3.8	5.0	7.9	2.8	5.9	7.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	44.0	24.2	51.8	40.6	41.8	47.4	18.2	5.6	63.5	18.5	13.3
LnGrp LOS	D	D	C	D	D	D	D	B	A	E	B	B
Approach Vol, veh/h		478			595			1371			1087	
Approach Delay, s/veh		38.9			43.1			20.2			26.0	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	58.0	14.2	17.8	18.7	56.3	10.9	21.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	53.5	10.5	25.5	25.5	40.5	12.1	23.9				
Max Q Clear Time (g_c+I1), s	13.7	22.2	9.5	11.2	13.9	20.3	4.1	11.7				
Green Ext Time (p_c), s	0.0	9.3	0.0	2.1	0.4	6.4	0.0	2.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									



HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

07/17/2021

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	1	0	7	43	0	13	1	220	14	4	263	2
Future Vol, veh/h	1	0	7	43	0	13	1	220	14	4	263	2
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	-	-	-	-	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	0	8	51	0	15	1	262	17	5	313	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	604	605	314	601	598	271	315	0	0	279	0	0
Stage 1	324	324	-	273	273	-	-	-	-	-	-	-
Stage 2	280	281	-	328	325	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	413	415	731	415	418	773	1257	-	-	1295	-	-
Stage 1	692	653	-	737	688	-	-	-	-	-	-	-
Stage 2	731	682	-	689	653	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	403	413	731	409	416	773	1257	-	-	1295	-	-
Mov Cap-2 Maneuver	403	413	-	409	416	-	-	-	-	-	-	-
Stage 1	691	650	-	736	687	-	-	-	-	-	-	-
Stage 2	716	681	-	679	650	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.5		14.2		0		0.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1257	-	-	663	459	1295	-
HCM Lane V/C Ratio	0.001	-	-	0.014	0.145	0.004	-
HCM Control Delay (s)	7.9	0	-	10.5	14.2	7.8	-
HCM Lane LOS	A	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/17/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	36	0	16	0	228	12	5	309	0
Future Vol, veh/h	0	0	0	36	0	16	0	228	12	5	309	0
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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	41	0	18	0	259	14	6	351	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	638	636	351	629	629	266	351	0	0	273	0	0
Stage 1	363	363	-	266	266	-	-	-	-	-	-	-
Stage 2	275	273	-	363	363	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	392	398	697	398	402	778	1219	-	-	1302	-	-
Stage 1	660	628	-	744	692	-	-	-	-	-	-	-
Stage 2	736	688	-	660	628	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	381	396	697	396	400	778	1219	-	-	1302	-	-
Mov Cap-2 Maneuver	381	396	-	396	400	-	-	-	-	-	-	-
Stage 1	660	624	-	744	692	-	-	-	-	-	-	-
Stage 2	719	688	-	656	624	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		13.8		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1219	-	-	-	466	1302	-
HCM Lane V/C Ratio	-	-	-	-	0.127	0.004	-
HCM Control Delay (s)	0	-	-	0	13.8	7.8	0
HCM Lane LOS	A	-	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/17/2021

Intersection												
Int Delay, s/veh	71.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	80	232	1	0	241	155	1	0	2	250	1	83
Future Vol, veh/h	80	232	1	0	241	155	1	0	2	250	1	83
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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	98	283	1	0	294	189	1	0	2	305	1	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	483	0	0	284	0	0	920	963	284	870	869	389
Stage 1	-	-	-	-	-	-	480	480	-	389	389	-
Stage 2	-	-	-	-	-	-	440	483	-	481	480	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1090	-	-	1290	-	-	254	258	760	~ 274	292	664
Stage 1	-	-	-	-	-	-	571	558	-	639	612	-
Stage 2	-	-	-	-	-	-	600	556	-	570	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1090	-	-	1290	-	-	197	230	760	~ 251	261	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	197	230	-	~ 251	261	-
Stage 1	-	-	-	-	-	-	510	498	-	571	612	-
Stage 2	-	-	-	-	-	-	508	556	-	507	498	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	14.3	221
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	389	1090	-	-	1290	-	-	297
HCM Lane V/C Ratio	0.009	0.09	-	-	-	-	-	1.371
HCM Control Delay (s)	14.3	8.6	0	-	0	-	-	221
HCM Lane LOS	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	21

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



HCM 6th Signalized Intersection Summary  
 4: US-395 & Bear Valley Road

07/17/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	55	301	178	159	226	107	114	597	83	124	769	31
Future Volume (veh/h)	55	301	178	159	226	107	114	597	83	124	769	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	59	320	189	169	240	114	121	635	88	132	818	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	171	594	265	235	730	326	197	1637	730	198	1640	731
Arrive On Green	0.11	0.17	0.17	0.15	0.21	0.21	0.12	0.48	0.48	0.12	0.48	0.48
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	59	320	189	169	240	114	121	635	88	132	818	33
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	3.4	8.5	11.7	10.0	5.9	6.4	7.1	11.9	3.2	7.8	16.4	1.2
Cycle Q Clear(g_c), s	3.4	8.5	11.7	10.0	5.9	6.4	7.1	11.9	3.2	7.8	16.4	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	594	265	235	730	326	197	1637	730	198	1640	731
V/C Ratio(X)	0.35	0.54	0.71	0.72	0.33	0.35	0.61	0.39	0.12	0.67	0.50	0.05
Avail Cap(c_a), veh/h	210	718	320	308	923	412	243	1637	730	259	1640	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	37.7	39.0	40.8	33.3	33.4	41.7	16.7	14.4	41.9	17.8	13.8
Incr Delay (d2), s/veh	1.2	0.8	5.8	5.5	0.3	0.6	3.1	0.7	0.3	4.1	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.6	4.8	4.3	2.5	2.4	3.0	4.7	1.1	3.3	6.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	38.4	44.7	46.3	33.5	34.1	44.8	17.4	14.8	46.0	18.9	14.0
LnGrp LOS	D	D	D	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		568			523			844			983	
Approach Delay, s/veh		41.0			37.8			21.0			22.4	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	49.9	16.5	19.4	14.2	49.9	12.6	23.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	33.5	16.5	18.5	12.5	34.5	10.5	24.5				
Max Q Clear Time (g_c+I1), s	9.8	13.9	12.0	13.7	9.1	18.4	5.4	8.4				
Green Ext Time (p_c), s	0.1	4.6	0.2	1.2	0.1	5.3	0.0	1.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									

HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

07/17/2021

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	3	0	7	28	0	9	1	198	48	15	236	7
Future Vol, veh/h	3	0	7	28	0	9	1	198	48	15	236	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	-	-	-	-	-	-	-	-	-	150	-	-
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	0	8	31	0	10	1	222	54	17	265	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	559	581	269	558	558	249	273	0	0	276	0	0
Stage 1	303	303	-	251	251	-	-	-	-	-	-	-
Stage 2	256	278	-	307	307	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	443	428	775	443	441	795	1302	-	-	1299	-	-
Stage 1	711	667	-	758	703	-	-	-	-	-	-	-
Stage 2	753	684	-	707	665	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	433	422	775	434	435	795	1302	-	-	1299	-	-
Mov Cap-2 Maneuver	433	422	-	434	435	-	-	-	-	-	-	-
Stage 1	710	658	-	757	702	-	-	-	-	-	-	-
Stage 2	743	683	-	691	656	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	10.8		13.1		0		0.5			
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1302	-	-	627	488	1299	-	-
HCM Lane V/C Ratio	0.001	-	-	0.018	0.085	0.013	-	-
HCM Control Delay (s)	7.8	0	-	10.8	13.1	7.8	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/17/2021

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	23	0	11	1	242	40	18	267	1
Future Vol, veh/h	0	0	1	23	0	11	1	242	40	18	267	1
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	1	24	0	12	1	257	43	19	284	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	610	625	285	604	604	279	285	0	0	300	0	0
Stage 1	323	323	-	281	281	-	-	-	-	-	-	-
Stage 2	287	302	-	323	323	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	409	404	759	413	415	765	1289	-	-	1273	-	-
Stage 1	693	654	-	730	682	-	-	-	-	-	-	-
Stage 2	725	668	-	693	654	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	397	396	759	406	407	765	1289	-	-	1273	-	-
Mov Cap-2 Maneuver	397	396	-	406	407	-	-	-	-	-	-	-
Stage 1	692	642	-	729	681	-	-	-	-	-	-	-
Stage 2	713	667	-	680	642	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	13.1	0	0.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1289	-	-	759	479	1273	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.076	0.015	-
HCM Control Delay (s)	7.8	0	-	9.8	13.1	7.9	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/17/2021

Intersection												
Int Delay, s/veh	15.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	219	1	4	230	210	0	0	1	221	1	73
Future Vol, veh/h	51	219	1	4	230	210	0	0	1	221	1	73
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	55	238	1	4	250	228	0	0	1	240	1	79

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	478	0	0	239	0	0	761	835	239	721	721	364
Stage 1	-	-	-	-	-	-	349	349	-	372	372	-
Stage 2	-	-	-	-	-	-	412	486	-	349	349	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1095	-	-	1340	-	-	325	306	805	345	356	685
Stage 1	-	-	-	-	-	-	671	637	-	653	622	-
Stage 2	-	-	-	-	-	-	621	554	-	671	637	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1095	-	-	1340	-	-	273	287	805	328	334	685
Mov Cap-2 Maneuver	-	-	-	-	-	-	273	287	-	328	334	-
Stage 1	-	-	-	-	-	-	632	600	-	615	620	-
Stage 2	-	-	-	-	-	-	546	552	-	631	600	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.6			0.1			9.5			50.1		
HCM LOS							A			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	805	1095	-	-	1340	-	-	377
HCM Lane V/C Ratio	0.001	0.051	-	-	0.003	-	-	0.851
HCM Control Delay (s)	9.5	8.5	0	-	7.7	0	-	50.1
HCM Lane LOS	A	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	8

HCM 6th Signalized Intersection Summary  
 4: US-395 & Bear Valley Road

07/17/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	311	140	111	334	141	208	902	198	170	818	45
Future Volume (veh/h)	45	311	140	111	334	141	208	902	198	170	818	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	48	334	151	119	359	152	224	970	213	183	880	48
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	527	235	183	593	265	287	1776	792	225	1645	734
Arrive On Green	0.09	0.15	0.15	0.11	0.17	0.17	0.18	0.52	0.52	0.14	0.48	0.48
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	48	334	151	119	359	152	224	970	213	183	880	48
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	3.0	9.9	6.9	7.6	10.5	9.9	14.2	20.5	5.0	11.8	19.4	1.8
Cycle Q Clear(g_c), s	3.0	9.9	6.9	7.6	10.5	9.9	14.2	20.5	5.0	11.8	19.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	527	235	183	593	265	287	1776	792	225	1645	734
V/C Ratio(X)	0.32	0.63	0.64	0.65	0.61	0.57	0.78	0.55	0.27	0.81	0.54	0.07
Avail Cap(c_a), veh/h	219	888	396	195	837	373	420	1776	792	225	1645	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	42.8	20.5	45.8	41.2	40.9	42.3	17.4	5.1	45.1	19.6	15.0
Incr Delay (d2), s/veh	1.2	1.3	2.9	6.7	1.0	2.0	5.6	1.2	0.8	19.8	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.2	2.6	3.4	4.5	3.8	6.1	8.1	2.8	6.0	7.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	44.0	23.4	52.5	42.2	42.9	47.9	18.6	5.9	64.9	20.8	15.2
LnGrp LOS	D	D	C	D	D	D	D	B	A	E	C	B
Approach Vol, veh/h		533			630			1407			1111	
Approach Delay, s/veh		38.4			44.3			21.3			27.8	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	58.0	14.2	18.6	21.1	53.9	12.1	20.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	53.5	10.5	25.5	25.5	40.5	12.1	23.9				
Max Q Clear Time (g_c+I1), s	13.8	22.5	9.6	11.9	16.2	21.4	5.0	12.5				
Green Ext Time (p_c), s	0.0	9.2	0.0	2.2	0.4	6.3	0.0	2.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									

HCM 6th TWSC  
 1: Monte Vista Road & Olivine Road

07/23/2021

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	7	0	0	0	1	251	0	0	385	2
Future Vol, veh/h	1	0	7	0	0	0	1	251	0	0	385	2
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	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	0	8	0	0	0	1	299	0	0	458	2

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	760	760	459	764	761	299	460	0	0	299	0	0
Stage 1	459	459	-	301	301	-	-	-	-	-	-	-
Stage 2	301	301	-	463	460	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	325	338	606	323	337	745	1112	-	-	1274	-	-
Stage 1	586	570	-	712	669	-	-	-	-	-	-	-
Stage 2	712	669	-	583	569	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	325	338	606	318	337	745	1112	-	-	1274	-	-
Mov Cap-2 Maneuver	325	338	-	318	337	-	-	-	-	-	-	-
Stage 1	585	570	-	711	668	-	-	-	-	-	-	-
Stage 2	711	668	-	575	569	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1112	-	-	547	-	1274	-
HCM Lane V/C Ratio	0.001	-	-	0.017	-	-	-
HCM Control Delay (s)	8.2	0	-	11.7	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/23/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	262	0	0	394	0
Future Vol, veh/h	0	0	0	0	0	0	0	262	0	0	394	0
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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0	0	298	0	0	448	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	746	746	448	746	746	298	448	0	0	298	0	0
Stage 1	448	448	-	298	298	-	-	-	-	-	-	-
Stage 2	298	298	-	448	448	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	332	344	615	332	344	746	1123	-	-	1275	-	-
Stage 1	594	576	-	715	671	-	-	-	-	-	-	-
Stage 2	715	671	-	594	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	332	344	615	332	344	746	1123	-	-	1275	-	-
Mov Cap-2 Maneuver	332	344	-	332	344	-	-	-	-	-	-	-
Stage 1	594	576	-	715	671	-	-	-	-	-	-	-
Stage 2	715	671	-	594	576	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	-	-	1275	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-



HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection												
Int Delay, s/veh	124.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	81	241	1	0	251	175	1	0	2	301	1	81
Future Vol, veh/h	81	241	1	0	251	175	1	0	2	301	1	81
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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	294	1	0	306	213	1	0	2	367	1	99

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	519	0	0	295	0	0	956	1012	295	907	906	413
Stage 1	-	-	-	-	-	-	493	493	-	413	413	-
Stage 2	-	-	-	-	-	-	463	519	-	494	493	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1057	-	-	1278	-	-	240	241	749	~ 259	278	643
Stage 1	-	-	-	-	-	-	562	550	-	620	597	-
Stage 2	-	-	-	-	-	-	583	536	-	561	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1057	-	-	1278	-	-	185	214	749	~ 236	247	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	214	-	~ 236	247	-
Stage 1	-	-	-	-	-	-	499	488	-	551	597	-
Stage 2	-	-	-	-	-	-	492	536	-	497	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	14.8	\$ 367.2
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	371	1057	-	-	1278	-	-	273
HCM Lane V/C Ratio	0.01	0.093	-	-	-	-	-	1.711
HCM Control Delay (s)	14.8	8.8	0	-	0	-	-	\$ 367.2
HCM Lane LOS	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	30.1

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

# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	181	360	366	189	251	114	178	686	159	136	860	73
Future Volume (veh/h)	181	360	366	189	251	114	178	686	159	136	860	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	193	383	389	201	267	121	189	730	169	145	915	78
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	257	787	351	265	804	359	253	1355	605	210	1264	564
Arrive On Green	0.16	0.23	0.23	0.16	0.24	0.24	0.16	0.40	0.40	0.13	0.37	0.37
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	193	383	389	201	267	121	189	730	169	145	915	78
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	11.4	9.7	23.0	11.9	6.5	6.6	11.1	16.4	7.5	8.6	23.0	3.4
Cycle Q Clear(g_c), s	11.4	9.7	23.0	11.9	6.5	6.6	11.1	16.4	7.5	8.6	23.0	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	787	351	265	804	359	253	1355	605	210	1264	564
V/C Ratio(X)	0.75	0.49	1.11	0.76	0.33	0.34	0.75	0.54	0.28	0.69	0.72	0.14
Avail Cap(c_a), veh/h	275	787	351	291	821	366	275	1355	605	269	1264	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	33.4	38.5	39.9	31.7	31.8	40.3	23.2	20.5	41.6	27.1	20.9
Incr Delay (d2), s/veh	10.3	0.5	80.7	10.0	0.2	0.6	9.8	1.5	1.2	5.1	3.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	4.0	16.3	5.4	2.7	2.5	5.1	6.7	2.8	3.7	9.8	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	33.9	119.2	49.9	32.0	32.3	50.1	24.7	21.6	46.7	30.8	21.5
LnGrp LOS	D	C	F	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		965			589			1088			1138	
Approach Delay, s/veh		71.6			38.2			28.6			32.1	
Approach LOS		E			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	41.6	18.4	25.0	17.6	39.0	17.9	25.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.1	31.9	15.5	20.5	14.5	31.5	14.5	21.5				
Max Q Clear Time (g_c+I1), s	10.6	18.4	13.9	25.0	13.1	25.0	13.4	8.6				
Green Ext Time (p_c), s	0.1	4.7	0.1	0.0	0.1	3.4	0.1	1.7				

### Intersection Summary

HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

HCM 6th TWSC  
 1: Monte Vista Road & Olivine Road

07/23/2021

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	7	0	0	0	1	325	0	0	305	7
Future Vol, veh/h	3	0	7	0	0	0	1	325	0	0	305	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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	0	8	0	0	0	1	365	0	0	343	8

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	714	714	347	718	718	365	351	0	0	365	0	0
Stage 1	347	347	-	367	367	-	-	-	-	-	-	-
Stage 2	367	367	-	351	351	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	349	359	701	347	357	685	1219	-	-	1205	-	-
Stage 1	673	638	-	657	626	-	-	-	-	-	-	-
Stage 2	657	626	-	670	636	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	349	359	701	343	357	685	1219	-	-	1205	-	-
Mov Cap-2 Maneuver	349	359	-	343	357	-	-	-	-	-	-	-
Stage 1	672	638	-	656	625	-	-	-	-	-	-	-
Stage 2	656	625	-	662	636	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	11.8		0			0		0		
HCM LOS	B		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1219	-	-	538	-	1205	-
HCM Lane V/C Ratio	0.001	-	-	0.021	-	-	-
HCM Control Delay (s)	8	0	-	11.8	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/23/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	0	0	0	1	333	0	0	327	1
Future Vol, veh/h	0	0	1	0	0	0	1	333	0	0	327	1
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	1	0	0	0	1	354	0	0	348	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	705	705	349	705	705	354	349	0	0	354	0	0
Stage 1	349	349	-	356	356	-	-	-	-	-	-	-
Stage 2	356	356	-	349	349	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	354	363	699	354	363	694	1221	-	-	1216	-	-
Stage 1	671	637	-	666	633	-	-	-	-	-	-	-
Stage 2	666	633	-	671	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	354	363	699	353	363	694	1221	-	-	1216	-	-
Mov Cap-2 Maneuver	354	363	-	353	363	-	-	-	-	-	-	-
Stage 1	670	637	-	665	632	-	-	-	-	-	-	-
Stage 2	665	632	-	670	637	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1221	-	-	699	-	1216	-
HCM Lane V/C Ratio	0.001	-	-	0.002	-	-	-
HCM Control Delay (s)	8	0	-	10.2	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection												
Int Delay, s/veh	28											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	228	1	4	239	264	0	0	1	258	1	72
Future Vol, veh/h	47	228	1	4	239	264	0	0	1	258	1	72
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	51	248	1	4	260	287	0	0	1	280	1	78

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	547	0	0	249	0	0	802	906	249	763	763	404
Stage 1	-	-	-	-	-	-	351	351	-	412	412	-
Stage 2	-	-	-	-	-	-	451	555	-	351	351	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1033	-	-	1328	-	-	305	278	795	324	337	651
Stage 1	-	-	-	-	-	-	670	636	-	621	598	-
Stage 2	-	-	-	-	-	-	592	516	-	670	636	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1033	-	-	1328	-	-	255	261	795	308	316	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	255	261	-	308	316	-
Stage 1	-	-	-	-	-	-	632	600	-	586	595	-
Stage 2	-	-	-	-	-	-	517	513	-	631	600	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			0.1			9.5			92.8		
HCM LOS							A			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	1033	-	-	1328	-	-	348
HCM Lane V/C Ratio	0.001	0.049	-	-	0.003	-	-	1.034
HCM Control Delay (s)	9.5	8.7	0	-	7.7	0	-	92.8
HCM Lane LOS	A	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	12.4

HCM 6th Signalized Intersection Summary  
 4: US-395 & Bear Valley Road

07/23/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	355	266	196	400	156	419	1021	254	182	938	188
Future Volume (veh/h)	131	355	266	196	400	156	419	1021	254	182	938	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	141	382	286	211	430	168	451	1098	273	196	1009	202
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	198	578	258	213	608	271	401	1696	756	215	1302	581
Arrive On Green	0.12	0.17	0.17	0.13	0.18	0.18	0.25	0.50	0.50	0.13	0.38	0.38
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	141	382	286	211	430	168	451	1098	273	196	1009	202
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	9.5	11.8	11.6	14.7	13.4	11.5	28.0	26.9	7.2	13.5	29.3	10.7
Cycle Q Clear(g_c), s	9.5	11.8	11.6	14.7	13.4	11.5	28.0	26.9	7.2	13.5	29.3	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	578	258	213	608	271	401	1696	756	215	1302	581
V/C Ratio(X)	0.71	0.66	1.11	0.99	0.71	0.62	1.12	0.65	0.36	0.91	0.77	0.35
Avail Cap(c_a), veh/h	209	848	378	213	800	357	401	1696	756	215	1302	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	43.9	17.2	49.0	43.6	42.9	42.5	21.1	5.9	48.3	30.7	25.0
Incr Delay (d2), s/veh	10.1	1.3	76.9	59.5	1.9	2.3	82.9	1.9	1.3	38.0	4.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	5.1	9.5	9.4	5.8	4.5	20.3	10.9	4.2	7.7	12.7	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	45.2	94.1	108.5	45.6	45.2	125.3	23.1	7.2	86.3	35.3	26.6
LnGrp LOS	E	D	F	F	D	D	F	C	A	F	D	C
Approach Vol, veh/h		809			809			1822			1407	
Approach Delay, s/veh		64.7			61.9			46.0			41.1	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	58.0	16.8	21.1	30.0	45.0	15.8	22.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	53.5	10.5	25.5	25.5	40.5	12.1	23.9				
Max Q Clear Time (g_c+I1), s	15.5	28.9	16.7	13.8	30.0	31.3	11.5	15.4				
Green Ext Time (p_c), s	0.0	10.2	0.0	2.8	0.0	5.1	0.0	2.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			50.4									
HCM 6th LOS			D									





HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

07/23/2021

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	1	0	7	43	0	13	1	267	14	4	390	2
Future Vol, veh/h	1	0	7	43	0	13	1	267	14	4	390	2
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	-	-	-	-	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	0	8	51	0	15	1	318	17	5	464	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	811	812	465	808	805	327	466	0	0	335	0	0
Stage 1	475	475	-	329	329	-	-	-	-	-	-	-
Stage 2	336	337	-	479	476	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	300	315	602	302	318	719	1106	-	-	1236	-	-
Stage 1	574	561	-	688	650	-	-	-	-	-	-	-
Stage 2	682	645	-	571	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	293	313	602	297	316	719	1106	-	-	1236	-	-
Mov Cap-2 Maneuver	293	313	-	297	316	-	-	-	-	-	-	-
Stage 1	573	559	-	687	649	-	-	-	-	-	-	-
Stage 2	667	644	-	561	558	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	11.9		18		0		0.1			
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1106	-	-	532	344	1236	-
HCM Lane V/C Ratio	0.001	-	-	0.018	0.194	0.004	-
HCM Control Delay (s)	8.3	0	-	11.9	18	7.9	-
HCM Lane LOS	A	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/23/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	36	0	16	0	276	12	5	437	0
Future Vol, veh/h	0	0	0	36	0	16	0	276	12	5	437	0
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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	41	0	18	0	314	14	6	497	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	839	837	497	830	830	321	497	0	0	328	0	0
Stage 1	509	509	-	321	321	-	-	-	-	-	-	-
Stage 2	330	328	-	509	509	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	288	305	577	292	308	724	1077	-	-	1243	-	-
Stage 1	550	541	-	695	655	-	-	-	-	-	-	-
Stage 2	687	651	-	550	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	279	303	577	291	306	724	1077	-	-	1243	-	-
Mov Cap-2 Maneuver	279	303	-	291	306	-	-	-	-	-	-	-
Stage 1	550	537	-	695	655	-	-	-	-	-	-	-
Stage 2	670	651	-	546	537	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			17.1			0			0.1		
HCM LOS	A			C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1077	-	-	-	357	1243	-
HCM Lane V/C Ratio	-	-	-	-	0.166	0.005	-
HCM Control Delay (s)	0	-	-	0	17.1	7.9	0
HCM Lane LOS	A	-	-	A	C	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection												
Int Delay, s/veh	212.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	83	241	1	0	251	199	1	0	2	374	1	86
Future Vol, veh/h	83	241	1	0	251	199	1	0	2	374	1	86
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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	101	294	1	0	306	243	1	0	2	456	1	105

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	549	0	0	295	0	0	978	1046	295	926	925	428
Stage 1	-	-	-	-	-	-	497	497	-	428	428	-
Stage 2	-	-	-	-	-	-	481	549	-	498	497	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1031	-	-	1278	-	-	232	230	749	~ 251	271	631
Stage 1	-	-	-	-	-	-	559	548	-	609	588	-
Stage 2	-	-	-	-	-	-	570	520	-	558	548	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1031	-	-	1278	-	-	175	203	749	~ 228	239	631
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	203	-	~ 228	239	-
Stage 1	-	-	-	-	-	-	494	484	-	538	588	-
Stage 2	-	-	-	-	-	-	474	520	-	491	484	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	15.2	\$ 570.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	358	1031	-	-	1278	-	-	259
HCM Lane V/C Ratio	0.01	0.098	-	-	-	-	-	2.171
HCM Control Delay (s)	15.2	8.9	0	-	0	-	-	\$ 570.3
HCM Lane LOS	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	42.8

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

# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	389	395	189	261	114	188	686	159	136	860	80
Future Volume (veh/h)	202	389	395	189	261	114	188	686	159	136	860	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	215	414	420	201	278	121	200	730	169	145	915	85
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	855	381	265	824	368	264	1289	575	210	1175	524
Arrive On Green	0.17	0.25	0.25	0.16	0.24	0.24	0.16	0.38	0.38	0.13	0.34	0.34
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	215	414	420	201	278	121	200	730	169	145	915	85
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	12.7	10.3	25.0	11.9	6.7	6.5	11.8	16.9	7.8	8.6	24.0	3.9
Cycle Q Clear(g_c), s	12.7	10.3	25.0	11.9	6.7	6.5	11.8	16.9	7.8	8.6	24.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	855	381	265	824	368	264	1289	575	210	1175	524
V/C Ratio(X)	0.77	0.48	1.10	0.76	0.34	0.33	0.76	0.57	0.29	0.69	0.78	0.16
Avail Cap(c_a), veh/h	308	855	381	275	824	368	275	1289	575	269	1175	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	32.0	37.5	40.0	31.4	31.3	40.0	24.7	21.8	41.6	29.4	22.8
Incr Delay (d2), s/veh	10.4	0.4	76.3	11.2	0.2	0.5	11.1	1.8	1.3	5.1	5.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	4.3	17.2	5.5	2.8	2.4	5.5	7.0	2.9	3.7	10.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	32.4	113.8	51.2	31.6	31.8	51.1	26.5	23.1	46.7	34.5	23.5
LnGrp LOS	D	C	F	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1049			600			1099			1145	
Approach Delay, s/veh		68.6			38.2			30.5			35.2	
Approach LOS		E			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	39.7	18.3	27.0	18.3	36.4	19.2	26.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.1	30.9	14.5	22.5	14.5	30.5	16.5	20.5				
Max Q Clear Time (g_c+I1), s	10.6	18.9	13.9	27.0	13.8	26.0	14.7	8.7				
Green Ext Time (p_c), s	0.1	4.4	0.0	0.0	0.0	2.5	0.1	1.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			43.3									
HCM 6th LOS			D									



HCM 6th TWSC  
 1: Monte Vista Road & Olivine Road

07/17/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	3	0	7	28	0	9	1	336	48	15	323	7
Future Vol, veh/h	3	0	7	28	0	9	1	336	48	15	323	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	-	-	-	-	-	-	-	-	-	150	-	-
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	0	8	31	0	10	1	378	54	17	363	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	813	835	367	812	812	405	371	0	0	432	0	0
Stage 1	401	401	-	407	407	-	-	-	-	-	-	-
Stage 2	412	434	-	405	405	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	299	306	683	300	315	650	1199	-	-	1138	-	-
Stage 1	630	604	-	625	601	-	-	-	-	-	-	-
Stage 2	621	585	-	626	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	291	301	683	293	310	650	1199	-	-	1138	-	-
Mov Cap-2 Maneuver	291	301	-	293	310	-	-	-	-	-	-	-
Stage 1	629	595	-	624	600	-	-	-	-	-	-	-
Stage 2	611	584	-	610	593	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.6		17.1		0		0.4	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1199	-	-	486	338	1138	-
HCM Lane V/C Ratio	0.001	-	-	0.023	0.123	0.015	-
HCM Control Delay (s)	8	0	-	12.6	17.1	8.2	-
HCM Lane LOS	A	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/17/2021

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	23	0	11	1	381	40	18	355	1
Future Vol, veh/h	0	0	1	23	0	11	1	381	40	18	355	1
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	1	24	0	12	1	405	43	19	378	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	852	867	379	846	846	427	379	0	0	448	0	0
Stage 1	417	417	-	429	429	-	-	-	-	-	-	-
Stage 2	435	450	-	417	417	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	282	293	672	284	301	632	1191	-	-	1123	-	-
Stage 1	617	595	-	608	587	-	-	-	-	-	-	-
Stage 2	604	575	-	617	595	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	272	287	672	279	294	632	1191	-	-	1123	-	-
Mov Cap-2 Maneuver	272	287	-	279	294	-	-	-	-	-	-	-
Stage 1	616	583	-	607	586	-	-	-	-	-	-	-
Stage 2	592	574	-	603	583	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.4		16.8		0		0.4	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1191	-	-	672	341	1123	-
HCM Lane V/C Ratio	0.001	-	-	0.002	0.106	0.017	-
HCM Control Delay (s)	8	0	-	10.4	16.8	8.3	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0.1	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/17/2021

Intersection												
Int Delay, s/veh	62.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	53	228	1	4	239	346	0	0	1	306	1	76
Future Vol, veh/h	53	228	1	4	239	346	0	0	1	306	1	76
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	58	248	1	4	260	376	0	0	1	333	1	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	636	0	0	249	0	0	863	1009	249	821	821	448
Stage 1	-	-	-	-	-	-	365	365	-	456	456	-
Stage 2	-	-	-	-	-	-	498	644	-	365	365	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	957	-	-	1328	-	-	277	242	795	~ 296	312	615
Stage 1	-	-	-	-	-	-	658	627	-	588	572	-
Stage 2	-	-	-	-	-	-	558	471	-	658	627	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	957	-	-	1328	-	-	225	224	795	~ 279	289	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	225	224	-	~ 279	289	-
Stage 1	-	-	-	-	-	-	612	583	-	547	569	-
Stage 2	-	-	-	-	-	-	480	469	-	611	583	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.1			9.5			202.1		
HCM LOS							A			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	957	-	-	1328	-	-	313
HCM Lane V/C Ratio	0.001	0.06	-	-	0.003	-	-	1.33
HCM Control Delay (s)	9.5	9	0	-	7.7	0	-	202.1
HCM Lane LOS	A	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	20.5

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



# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

07/17/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	374	285	196	433	156	452	1021	254	182	938	211
Future Volume (veh/h)	144	374	285	196	433	156	452	1021	254	182	938	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	155	402	306	211	466	168	486	1098	273	196	1009	227
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	210	543	242	234	595	266	505	1623	724	250	1086	484
Arrive On Green	0.13	0.16	0.16	0.14	0.17	0.17	0.31	0.47	0.47	0.15	0.32	0.32
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	155	402	306	211	466	168	486	1098	273	196	1009	227
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	10.9	13.3	10.2	15.2	15.5	12.1	35.1	29.5	7.9	13.8	33.9	14.2
Cycle Q Clear(g_c), s	10.9	13.3	10.2	15.2	15.5	12.1	35.1	29.5	7.9	13.8	33.9	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	543	242	234	595	266	505	1623	724	250	1086	484
V/C Ratio(X)	0.74	0.74	1.26	0.90	0.78	0.63	0.96	0.68	0.38	0.78	0.93	0.47
Avail Cap(c_a), veh/h	211	590	263	234	628	280	505	1623	724	260	1086	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	47.6	14.5	49.9	46.9	45.5	40.2	24.1	6.7	48.3	39.2	32.5
Incr Delay (d2), s/veh	12.8	4.6	147.5	33.4	6.1	4.2	30.8	2.3	1.5	13.9	14.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	6.0	13.4	8.3	7.1	4.9	18.1	12.2	2.7	6.5	16.3	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	52.2	162.0	83.3	53.0	49.8	71.0	26.4	8.2	62.2	54.1	35.7
LnGrp LOS	E	D	F	F	D	D	E	C	A	E	D	D
Approach Vol, veh/h		863			845			1857			1432	
Approach Delay, s/veh		93.0			59.9			35.4			52.3	
Approach LOS		F			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.3	58.4	19.2	20.8	39.0	39.7	17.4	22.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.6	53.1	14.3	18.0	34.5	35.2	13.0	19.3				
Max Q Clear Time (g_c+I1), s	15.8	31.5	17.2	15.3	37.1	35.9	12.9	17.5				
Green Ext Time (p_c), s	0.0	9.6	0.0	1.0	0.0	0.0	0.0	0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.3									
HCM 6th LOS			D									

HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

07/23/2021

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	5	13	4	3	3	18	300	6	11	393	6
Future Vol, veh/h	3	5	13	4	3	3	18	300	6	11	393	6
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	5	14	4	3	3	19	316	6	12	414	6

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	801	801	417	808	801	319	420	0	0	322	0	0
Stage 1	441	441	-	357	357	-	-	-	-	-	-	-
Stage 2	360	360	-	451	444	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	305	320	640	302	320	726	1150	-	-	1249	-	-
Stage 1	599	580	-	665	632	-	-	-	-	-	-	-
Stage 2	662	630	-	592	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	294	309	640	284	309	726	1150	-	-	1249	-	-
Mov Cap-2 Maneuver	294	309	-	284	309	-	-	-	-	-	-	-
Stage 1	587	572	-	652	619	-	-	-	-	-	-	-
Stage 2	643	617	-	567	571	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.4		15.4		0.5		0.2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1150	-	-	450	358	1249	-
HCM Lane V/C Ratio	0.016	-	-	0.049	0.029	0.009	-
HCM Control Delay (s)	8.2	0	-	13.4	15.4	7.9	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/23/2021

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	3	0	0	0	6	331	0	0	401	2
Future Vol, veh/h	1	0	3	0	0	0	6	331	0	0	401	2
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	0	3	0	0	0	6	348	0	0	422	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	783	783	423	785	784	348	424	0	0	348	0	0
Stage 1	423	423	-	360	360	-	-	-	-	-	-	-
Stage 2	360	360	-	425	424	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	314	328	635	313	327	700	1146	-	-	1222	-	-
Stage 1	613	591	-	662	630	-	-	-	-	-	-	-
Stage 2	662	630	-	611	590	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	312	326	635	310	325	700	1146	-	-	1222	-	-
Mov Cap-2 Maneuver	312	326	-	310	325	-	-	-	-	-	-	-
Stage 1	609	591	-	658	626	-	-	-	-	-	-	-
Stage 2	658	626	-	608	590	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	0	0.1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1146	-	-	504	-	1222	-
HCM Lane V/C Ratio	0.006	-	-	0.008	-	-	-
HCM Control Delay (s)	8.2	0	-	12.2	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection

Int Delay, s/veh 136.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	83	296	2	2	325	234	3	21	3	315	13	83
Future Vol, veh/h	83	296	2	2	325	234	3	21	3	315	13	83
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	87	312	2	2	342	246	3	22	3	332	14	87

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	588	0	0	314
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	997	-	-	1258
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	997	-	-	1258
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	24.9	\$ 455.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	209	997	-	-	1258	-	-	228
HCM Lane V/C Ratio	0.136	0.088	-	-	0.002	-	-	1.898
HCM Control Delay (s)	24.9	9	0	-	7.9	0	-	\$ 455.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0	-	-	30.8

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

HCM 6th Signalized Intersection Summary  
 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	186	410	394	234	422	157	243	954	164	147	1311	75
Future Volume (veh/h)	186	410	394	234	422	157	243	954	164	147	1311	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	196	432	415	246	444	165	256	1004	173	155	1380	79
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	240	700	312	262	748	334	280	1598	713	220	1473	657
Arrive On Green	0.14	0.19	0.19	0.15	0.21	0.21	0.16	0.44	0.44	0.13	0.41	0.41
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	196	432	415	246	444	165	256	1004	173	155	1380	79
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	10.9	10.7	13.0	13.9	10.9	6.4	14.4	21.0	6.6	8.5	35.9	3.0
Cycle Q Clear(g_c), s	10.9	10.7	13.0	13.9	10.9	6.4	14.4	21.0	6.6	8.5	35.9	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	700	312	262	748	334	280	1598	713	220	1473	657
V/C Ratio(X)	0.82	0.62	1.33	0.94	0.59	0.49	0.91	0.63	0.24	0.70	0.94	0.12
Avail Cap(c_a), veh/h	240	773	345	262	821	366	280	1598	713	220	1473	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	36.2	18.5	41.0	35.1	17.9	40.3	21.1	17.0	40.9	27.8	18.1
Incr Delay (d2), s/veh	19.5	1.3	168.3	39.0	1.0	1.1	32.4	1.9	0.8	9.7	12.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	4.8	19.3	8.6	4.8	0.1	8.5	9.0	2.5	4.1	17.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	37.4	186.8	80.0	36.1	19.0	72.8	23.0	17.9	50.6	40.3	18.4
LnGrp LOS	E	D	F	F	D	B	E	C	B	D	D	B
Approach Vol, veh/h		1043			855			1433			1614	
Approach Delay, s/veh		101.2			45.4			31.2			40.3	
Approach LOS		F			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	45.4	17.0	21.0	18.0	42.0	15.7	22.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.1	40.9	12.5	18.5	13.5	37.5	11.2	19.8				
Max Q Clear Time (g_c+I1), s	10.5	23.0	15.9	15.0	16.4	37.9	12.9	12.9				
Green Ext Time (p_c), s	0.0	7.5	0.0	1.5	0.0	0.0	0.0	2.0				

Intersection Summary

HCM 6th Ctrl Delay	51.4
HCM 6th LOS	D

HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

07/23/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	4	19	6	8	15	13	366	4	6	361	7
Future Vol, veh/h	9	4	19	6	8	15	13	366	4	6	361	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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	4	20	6	8	16	14	385	4	6	380	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	823	813	384	823	814	387	387	0	0	389	0	0
Stage 1	396	396	-	415	415	-	-	-	-	-	-	-
Stage 2	427	417	-	408	399	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	295	315	668	295	315	665	1183	-	-	1181	-	-
Stage 1	633	607	-	619	596	-	-	-	-	-	-	-
Stage 2	610	595	-	624	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	278	308	668	279	308	665	1183	-	-	1181	-	-
Mov Cap-2 Maneuver	278	308	-	279	308	-	-	-	-	-	-	-
Stage 1	624	603	-	610	587	-	-	-	-	-	-	-
Stage 2	578	586	-	597	602	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14		14.4		0.3		0.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1183	-	-	434	414	1181	-
HCM Lane V/C Ratio	0.012	-	-	0.078	0.074	0.005	-
HCM Control Delay (s)	8.1	0	-	14	14.4	8.1	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/23/2021

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	6	0	0	0	6	381	0	0	388	2
Future Vol, veh/h	3	0	6	0	0	0	6	381	0	0	388	2
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	0	6	0	0	0	6	401	0	0	408	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	822	822	409	825	823	401	410	0	0	401	0	0
Stage 1	409	409	-	413	413	-	-	-	-	-	-	-
Stage 2	413	413	-	412	410	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	295	311	647	294	311	653	1160	-	-	1169	-	-
Stage 1	623	600	-	620	597	-	-	-	-	-	-	-
Stage 2	620	597	-	621	599	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	294	309	647	290	309	653	1160	-	-	1169	-	-
Mov Cap-2 Maneuver	294	309	-	290	309	-	-	-	-	-	-	-
Stage 1	619	600	-	616	593	-	-	-	-	-	-	-
Stage 2	616	593	-	615	599	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13		0		0.1		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1160	-	-	462	-	1169	-
HCM Lane V/C Ratio	0.005	-	-	0.021	-	-	-
HCM Control Delay (s)	8.1	0	-	13	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection												
Int Delay, s/veh	120											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	48	289	3	8	294	302	2	15	6	331	26	74
Future Vol, veh/h	48	289	3	8	294	302	2	15	6	331	26	74
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	51	304	3	8	309	318	2	16	6	348	27	78

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	627	0	0	307	0	0	945	1051	306	903	893	468
Stage 1	-	-	-	-	-	-	408	408	-	484	484	-
Stage 2	-	-	-	-	-	-	537	643	-	419	409	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	965	-	-	1265	-	-	244	229	739	~ 260	283	599
Stage 1	-	-	-	-	-	-	624	600	-	568	555	-
Stage 2	-	-	-	-	-	-	532	472	-	616	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	965	-	-	1265	-	-	184	212	739	~ 230	262	599
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	212	-	~ 230	262	-
Stage 1	-	-	-	-	-	-	584	562	-	532	549	-
Stage 2	-	-	-	-	-	-	435	467	-	556	562	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	20.5	\$ 386.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	256	965	-	-	1265	-	-	259
HCM Lane V/C Ratio	0.095	0.052	-	-	0.007	-	-	1.752
HCM Control Delay (s)	20.5	8.9	0	-	7.9	0	-	\$ 386.9
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0	-	-	30

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



# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	516	312	202	485	178	452	1502	259	220	1306	194
Future Volume (veh/h)	135	516	312	202	485	178	452	1502	259	220	1306	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	142	543	328	213	511	187	476	1581	273	232	1375	204
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	617	275	214	653	291	457	1781	794	247	1339	597
Arrive On Green	0.12	0.17	0.17	0.13	0.18	0.18	0.27	0.49	0.49	0.14	0.37	0.37
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	142	543	328	213	511	187	476	1581	273	232	1375	204
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	9.6	17.6	12.1	14.9	16.2	12.9	32.0	47.4	7.5	16.1	44.5	11.0
Cycle Q Clear(g_c), s	9.6	17.6	12.1	14.9	16.2	12.9	32.0	47.4	7.5	16.1	44.5	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	617	275	214	653	291	457	1781	794	247	1339	597
V/C Ratio(X)	0.72	0.88	1.19	0.99	0.78	0.64	1.04	0.89	0.34	0.94	1.03	0.34
Avail Cap(c_a), veh/h	197	617	275	214	653	291	457	1781	794	247	1339	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	48.6	17.2	52.5	46.9	45.6	44.0	27.4	6.8	50.8	37.8	27.2
Incr Delay (d2), s/veh	12.0	13.9	116.7	59.7	6.2	4.7	53.2	7.0	1.2	40.7	31.8	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	9.1	13.3	9.9	7.8	5.5	20.2	21.4	2.7	9.7	25.1	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.3	62.4	133.9	112.1	53.1	50.3	97.2	34.4	8.0	91.5	69.5	28.8
LnGrp LOS	E	E	F	F	D	D	F	C	A	F	F	C
Approach Vol, veh/h		1013			911			2330			1811	
Approach Delay, s/veh		85.7			66.3			44.2			67.7	
Approach LOS		F			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.3	61.2	17.0	22.5	34.0	46.5	15.8	23.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.8	56.7	12.5	18.0	29.5	42.0	11.3	19.2				
Max Q Clear Time (g_c+I1), s	18.1	49.4	16.9	19.6	34.0	46.5	11.6	18.2				
Green Ext Time (p_c), s	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			61.5									
HCM 6th LOS			E									



HCM 6th TWSC  
1: Monte Vista Road & Olivine Road

07/23/2021

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	3	5	13	47	3	16	18	316	20	15	398	6
Future Vol, veh/h	3	5	13	47	3	16	18	316	20	15	398	6
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	-	-	-	-	-	-	-	-	-	150	-	-
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	5	14	49	3	17	19	333	21	16	419	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	846	846	422	846	839	344	425	0	0	354	0	0
Stage 1	454	454	-	382	382	-	-	-	-	-	-	-
Stage 2	392	392	-	464	457	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	284	301	636	284	304	703	1145	-	-	1216	-	-
Stage 1	589	573	-	645	616	-	-	-	-	-	-	-
Stage 2	637	610	-	582	571	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	268	291	636	267	294	703	1145	-	-	1216	-	-
Mov Cap-2 Maneuver	268	291	-	267	294	-	-	-	-	-	-	-
Stage 1	577	566	-	631	603	-	-	-	-	-	-	-
Stage 2	605	597	-	557	564	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.8		19.6		0.4		0.3	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1145	-	-	430	316	1216	-
HCM Lane V/C Ratio	0.017	-	-	0.051	0.22	0.013	-
HCM Control Delay (s)	8.2	0	-	13.8	19.6	8	-
HCM Lane LOS	A	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.8	0	-

HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/23/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	3	36	0	16	6	345	12	5	444	2
Future Vol, veh/h	1	0	3	36	0	16	6	345	12	5	444	2
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	0	3	38	0	17	6	363	13	5	467	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	868	866	468	862	861	370	469	0	0	376	0	0
Stage 1	478	478	-	382	382	-	-	-	-	-	-	-
Stage 2	390	388	-	480	479	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	275	293	599	277	295	680	1103	-	-	1194	-	-
Stage 1	572	559	-	645	616	-	-	-	-	-	-	-
Stage 2	638	612	-	571	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	266	289	599	273	291	680	1103	-	-	1194	-	-
Mov Cap-2 Maneuver	266	289	-	273	291	-	-	-	-	-	-	-
Stage 1	568	556	-	640	612	-	-	-	-	-	-	-
Stage 2	618	608	-	565	555	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13		17.8		0.1		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1103	-	-	456	335	1194	-	-
HCM Lane V/C Ratio	0.006	-	-	0.009	0.163	0.004	-	-
HCM Control Delay (s)	8.3	0	-	13	17.8	8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection

Int Delay, s/veh 220.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	85	296	2	2	325	258	3	21	3	388	13	88
Future Vol, veh/h	85	296	2	2	325	258	3	21	3	388	13	88
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	89	312	2	2	342	272	3	22	3	408	14	93

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	614	0	0	314
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	975	-	-	1258
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	975	-	-	1258
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	26.1	\$ 666.5
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	199	975	-	-	1258	-	-	217
HCM Lane V/C Ratio	0.143	0.092	-	-	0.002	-	-	2.372
HCM Control Delay (s)	26.1	9.1	0	-	7.9	0	-	\$ 666.5
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0	-	-	41.8

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

# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	439	423	234	432	157	253	954	164	147	1311	82
Future Volume (veh/h)	207	439	423	234	432	157	253	954	164	147	1311	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	218	462	445	246	455	165	266	1004	173	155	1380	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	273	753	336	270	745	332	263	1514	675	228	1440	642
Arrive On Green	0.16	0.21	0.21	0.16	0.21	0.21	0.15	0.42	0.42	0.13	0.40	0.40
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	218	462	445	246	455	165	266	1004	173	155	1380	86
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	12.0	11.4	14.1	13.8	11.2	6.3	15.0	21.9	6.8	8.4	36.4	3.3
Cycle Q Clear(g_c), s	12.0	11.4	14.1	13.8	11.2	6.3	15.0	21.9	6.8	8.4	36.4	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	753	336	270	745	332	263	1514	675	228	1440	642
V/C Ratio(X)	0.80	0.61	1.33	0.91	0.61	0.50	1.01	0.66	0.26	0.68	0.96	0.13
Avail Cap(c_a), veh/h	273	834	372	270	827	369	263	1514	675	228	1440	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	35.1	18.4	40.5	35.2	17.6	41.4	22.8	18.5	40.4	28.6	18.7
Incr Delay (d2), s/veh	15.1	1.1	165.8	32.5	1.1	1.1	58.5	2.3	0.9	7.9	15.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	5.1	20.5	8.2	5.0	3.4	10.5	9.4	2.7	4.0	18.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	36.3	184.2	73.0	36.3	18.8	99.9	25.1	19.4	48.3	44.3	19.1
LnGrp LOS	D	D	F	E	D	B	F	C	B	D	D	B
Approach Vol, veh/h		1125			866			1443			1621	
Approach Delay, s/veh		98.4			43.4			38.2			43.3	
Approach LOS		F			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	43.0	17.4	22.4	17.0	41.0	17.6	22.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	38.5	12.9	20.1	12.5	36.5	13.1	19.9				
Max Q Clear Time (g_c+I1), s	10.4	23.9	15.8	16.1	17.0	38.4	14.0	13.2				
Green Ext Time (p_c), s	0.0	6.8	0.0	1.8	0.0	0.0	0.0	2.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.1									
HCM 6th LOS			D									



HCM 6th TWSC  
 1: Monte Vista Road & Olivine Road

07/23/2021

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	9	4	19	34	8	24	13	377	52	21	379	7
Future Vol, veh/h	9	4	19	34	8	24	13	377	52	21	379	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	-	-	-	-	-	-	-	-	-	150	-	-
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	4	20	36	8	25	14	397	55	22	399	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	916	927	403	912	903	425	406	0	0	452	0	0
Stage 1	447	447	-	453	453	-	-	-	-	-	-	-
Stage 2	469	480	-	459	450	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	255	270	652	257	279	634	1164	-	-	1119	-	-
Stage 1	595	577	-	590	573	-	-	-	-	-	-	-
Stage 2	579	558	-	586	575	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	233	260	652	240	269	634	1164	-	-	1119	-	-
Mov Cap-2 Maneuver	233	260	-	240	269	-	-	-	-	-	-	-
Stage 1	585	565	-	581	564	-	-	-	-	-	-	-
Stage 2	539	549	-	553	564	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.2		19.6		0.2		0.4	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	385	315	1119	-
HCM Lane V/C Ratio	0.012	-	-	0.087	0.221	0.02	-
HCM Control Delay (s)	8.1	0	-	15.2	19.6	8.3	-
HCM Lane LOS	A	A	-	C	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.8	0.1	-



HCM 6th TWSC  
 2: Monte Vista Road & Lindero Road /Lindero Road

07/23/2021

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	6	23	0	11	6	429	40	18	416	2
Future Vol, veh/h	3	0	6	23	0	11	6	429	40	18	416	2
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	0	6	24	0	12	6	452	42	19	438	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	968	983	439	965	963	473	440	0	0	494	0	0
Stage 1	477	477	-	485	485	-	-	-	-	-	-	-
Stage 2	491	506	-	480	478	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	235	251	622	236	258	595	1131	-	-	1080	-	-
Stage 1	573	559	-	567	555	-	-	-	-	-	-	-
Stage 2	563	543	-	571	559	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	225	243	622	228	250	595	1131	-	-	1080	-	-
Mov Cap-2 Maneuver	225	243	-	228	250	-	-	-	-	-	-	-
Stage 1	569	546	-	563	551	-	-	-	-	-	-	-
Stage 2	548	539	-	552	546	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.4		19.4		0.1		0.3	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1131	-	-	392	285	1080	-
HCM Lane V/C Ratio	0.006	-	-	0.024	0.126	0.018	-
HCM Control Delay (s)	8.2	0	-	14.4	19.4	8.4	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0.1	-

HCM 6th TWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection

Int Delay, s/veh 182.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	54	289	3	8	294	384	2	15	6	379	26	78
Future Vol, veh/h	54	289	3	8	294	384	2	15	6	379	26	78
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	57	304	3	8	309	404	2	16	6	399	27	82

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	713	0	0	307
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	896	-	-	1265
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	896	-	-	1265
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.1	22.9	\$ 579.5
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	225	896	-	-	1265	-	-	233
HCM Lane V/C Ratio	0.108	0.063	-	-	0.007	-	-	2.182
HCM Control Delay (s)	22.9	9.3	0	-	7.9	0	-	\$ 579.5
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0	-	-	39.3

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

HCM 6th Signalized Intersection Summary  
 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	148	535	331	202	518	178	485	1502	259	220	1306	217
Future Volume (veh/h)	148	535	331	202	518	178	485	1502	259	220	1306	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	156	563	348	213	545	187	511	1581	273	232	1375	228
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	752	335	197	715	319	411	1732	772	220	1330	593
Arrive On Green	0.13	0.21	0.21	0.12	0.20	0.20	0.24	0.48	0.48	0.13	0.37	0.37
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	156	563	348	213	545	187	511	1581	273	232	1375	228
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	10.2	17.1	14.6	13.4	16.6	12.3	28.0	47.3	7.8	15.0	43.0	12.2
Cycle Q Clear(g_c), s	10.2	17.1	14.6	13.4	16.6	12.3	28.0	47.3	7.8	15.0	43.0	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	752	335	197	715	319	411	1732	772	220	1330	593
V/C Ratio(X)	0.73	0.75	1.04	1.08	0.76	0.59	1.24	0.91	0.35	1.05	1.03	0.38
Avail Cap(c_a), veh/h	214	866	386	197	816	364	411	1732	772	220	1330	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	43.4	16.6	51.7	44.2	42.5	44.4	28.1	7.6	50.9	36.9	27.1
Incr Delay (d2), s/veh	11.7	3.1	55.4	86.9	3.7	1.9	128.3	8.9	1.3	75.3	33.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.9	10.5	10.5	7.8	5.1	26.4	21.8	2.8	11.0	24.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.9	46.5	72.0	138.6	47.9	44.3	172.7	37.0	8.8	126.2	70.8	29.0
LnGrp LOS	E	D	F	F	D	D	F	D	A	F	F	C
Approach Vol, veh/h		1067			945			2365			1835	
Approach Delay, s/veh		56.9			67.6			63.1			72.6	
Approach LOS		E			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	58.0	15.4	26.3	30.0	45.0	16.6	25.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	53.5	10.5	25.5	25.5	40.5	12.1	23.9				
Max Q Clear Time (g_c+I1), s	17.0	49.3	15.4	19.1	30.0	45.0	12.2	18.6				
Green Ext Time (p_c), s	0.0	3.5	0.0	2.7	0.0	0.0	0.0	2.0				

Intersection Summary

HCM 6th Ctrl Delay	65.5
HCM 6th LOS	E



HCM 6th AWSC  
 3: Monte Vista Road & Bear Valley Road

07/17/2021

Intersection	
Intersection Delay, s/veh	23.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	80	232	1	0	241	155	1	0	2	250	1	83
Future Vol, veh/h	80	232	1	0	241	155	1	0	2	250	1	83
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	98	283	1	0	294	189	1	0	2	305	1	101
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20.6	26.3	10.5	24.2
HCM LOS	C	D	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	26%	0%	75%
Vol Thru, %	0%	74%	61%	0%
Vol Right, %	67%	0%	39%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	313	396	334
LT Vol	1	80	0	250
Through Vol	0	232	241	1
RT Vol	2	1	155	83
Lane Flow Rate	4	382	483	407
Geometry Grp	1	1	1	1
Degree of Util (X)	0.007	0.66	0.778	0.722
Departure Headway (Hd)	7.339	6.222	5.799	6.378
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	485	580	623	570
Service Time	5.428	4.275	3.849	4.378
HCM Lane V/C Ratio	0.008	0.659	0.775	0.714
HCM Control Delay	10.5	20.6	26.3	24.2
HCM Lane LOS	B	C	D	C
HCM 95th-tile Q	0	4.9	7.4	6

HCM 6th AWSC  
 3: Monte Vista Road & Bear Valley Road

07/17/2021

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	219	1	4	230	210	0	0	1	221	1	73
Future Vol, veh/h	51	219	1	4	230	210	0	0	1	221	1	73
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
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	55	238	1	4	250	228	0	0	1	240	1	79
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.5	18.4	9.2	15.2
HCM LOS	B	C	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	19%	1%	75%
Vol Thru, %	0%	81%	52%	0%
Vol Right, %	100%	0%	47%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	271	444	295
LT Vol	0	51	4	221
Through Vol	0	219	230	1
RT Vol	1	1	210	73
Lane Flow Rate	1	295	483	321
Geometry Grp	1	1	1	1
Degree of Util (X)	0.002	0.461	0.681	0.523
Departure Headway (Hd)	6.063	5.632	5.082	5.873
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	585	636	709	612
Service Time	4.159	3.688	3.132	3.926
HCM Lane V/C Ratio	0.002	0.464	0.681	0.525
HCM Control Delay	9.2	13.5	18.4	15.2
HCM Lane LOS	A	B	C	C
HCM 95th-tile Q	0	2.4	5.4	3

HCM 6th AWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection	
Intersection Delay, s/veh	26.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕		↕	↕	
Traffic Vol, veh/h	83	241	1	0	251	199	1	0	2	374	1	86
Future Vol, veh/h	83	241	1	0	251	199	1	0	2	374	1	86
Peak Hour Factor	0.95	0.82	0.82	0.82	0.82	0.95	0.82	0.82	0.82	0.95	0.82	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	87	294	1	0	306	209	1	0	2	394	1	91
Number of Lanes	0	1	0	0	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	29.5	17.2	11.6	33.6
HCM LOS	D	C	B	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	26%	0%	0%	100%	0%
Vol Thru, %	0%	74%	100%	0%	0%	1%
Vol Right, %	67%	0%	0%	100%	0%	99%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	325	251	199	374	87
LT Vol	1	83	0	0	374	0
Through Vol	0	241	251	0	0	1
RT Vol	2	1	0	199	0	86
Lane Flow Rate	4	382	306	209	394	92
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.009	0.76	0.605	0.372	0.839	0.165
Departure Headway (Hd)	8.458	7.152	7.114	6.397	7.676	6.456
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	422	505	508	561	476	559
Service Time	6.531	5.192	4.859	4.142	5.376	4.156
HCM Lane V/C Ratio	0.009	0.756	0.602	0.373	0.828	0.165
HCM Control Delay	11.6	29.5	20.2	12.9	39	10.4
HCM Lane LOS	B	D	C	B	E	B
HCM 95th-tile Q	0	6.6	4	1.7	8.3	0.6

HCM 6th AWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕		↕	↕	
Traffic Vol, veh/h	53	228	1	4	239	346	0	0	1	306	1	76
Future Vol, veh/h	53	228	1	4	239	346	0	0	1	306	1	76
Peak Hour Factor	0.95	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.95	0.92	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	56	248	1	4	260	364	0	0	1	322	1	80
Number of Lanes	0	1	0	0	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	18.6	15.8	10.6	20.9
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	19%	2%	0%	100%	0%
Vol Thru, %	0%	81%	98%	0%	0%	1%
Vol Right, %	100%	0%	0%	100%	0%	99%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	282	243	346	306	77
LT Vol	0	53	4	0	306	0
Through Vol	0	228	239	0	0	1
RT Vol	1	1	0	346	0	76
Lane Flow Rate	1	305	264	364	322	81
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.002	0.572	0.475	0.582	0.664	0.14
Departure Headway (Hd)	7.569	6.763	6.478	5.757	7.418	6.203
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	476	530	552	623	486	576
Service Time	5.569	4.837	4.254	3.533	5.181	3.965
HCM Lane V/C Ratio	0.002	0.575	0.478	0.584	0.663	0.141
HCM Control Delay	10.6	18.6	15	16.3	23.7	10
HCM Lane LOS	B	C	B	C	C	A
HCM 95th-tile Q	0	3.6	2.5	3.7	4.8	0.5



HCM 6th AWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection	
Intersection Delay, s/veh	34.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕		↕	↕	
Traffic Vol, veh/h	85	296	2	2	325	258	3	21	3	388	13	88
Future Vol, veh/h	85	296	2	2	325	258	3	21	3	388	13	88
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
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	89	312	2	2	342	272	3	22	3	408	14	93
Number of Lanes	0	1	0	0	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	40.8	22.7	13.3	44.3
HCM LOS	E	C	B	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	11%	22%	1%	0%	100%	0%
Vol Thru, %	78%	77%	99%	0%	0%	13%
Vol Right, %	11%	1%	0%	100%	0%	87%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	27	383	327	258	388	101
LT Vol	3	85	2	0	388	0
Through Vol	21	296	325	0	0	13
RT Vol	3	2	0	258	0	88
Lane Flow Rate	28	403	344	272	408	106
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.074	0.851	0.72	0.514	0.916	0.205
Departure Headway (Hd)	9.398	7.598	7.533	6.809	8.073	6.932
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	379	476	478	530	449	518
Service Time	7.496	5.646	5.287	4.563	5.819	4.677
HCM Lane V/C Ratio	0.074	0.847	0.72	0.513	0.909	0.205
HCM Control Delay	13.3	40.8	27.5	16.6	52.8	11.5
HCM Lane LOS	B	E	D	C	F	B
HCM 95th-tile Q	0.2	8.6	5.7	2.9	10.2	0.8

# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	439	423	234	432	157	253	954	164	147	1311	82
Future Volume (veh/h)	207	439	423	234	432	157	253	954	164	147	1311	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	218	462	445	246	455	165	266	1004	173	155	1380	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	242	731	326	277	803	358	420	1545	689	218	1549	691
Arrive On Green	0.14	0.20	0.20	0.16	0.22	0.22	0.13	0.43	0.43	0.13	0.43	0.43
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	3326	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	218	462	445	246	455	165	266	1004	173	155	1380	86
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1663	1805	1610	1714	1805	1610
Q Serve(g_s), s	12.4	11.6	14.6	13.9	11.1	6.3	7.5	21.8	6.8	8.6	35.0	3.2
Cycle Q Clear(g_c), s	12.4	11.6	14.6	13.9	11.1	6.3	7.5	21.8	6.8	8.6	35.0	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	731	326	277	803	358	420	1545	689	218	1549	691
V/C Ratio(X)	0.90	0.63	1.37	0.89	0.57	0.46	0.63	0.65	0.25	0.71	0.89	0.12
Avail Cap(c_a), veh/h	242	765	341	277	838	374	420	1545	689	218	1549	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	36.1	20.9	40.6	34.2	17.3	41.1	22.4	18.1	41.5	26.1	17.0
Incr Delay (d2), s/veh	32.6	1.6	183.1	27.5	0.8	0.9	3.1	2.1	0.9	10.3	8.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	5.2	21.9	7.9	4.9	3.4	3.2	9.4	2.7	4.2	16.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	37.7	204.0	68.2	35.1	18.2	44.2	24.6	19.0	51.7	34.2	17.4
LnGrp LOS	E	D	F	E	D	B	D	C	B	D	C	B
Approach Vol, veh/h	1125			866			1443			1621		
Approach Delay, s/veh	110.6			41.3			27.5			35.0		
Approach LOS	F			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	44.6	44.4	18.0	22.0	14.5	44.5	16.0	24.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	39.9	39.9	13.5	18.5	10.0	40.0	11.5	20.5				
Max Q Clear Time (g_c+10), s	23.8	23.8	15.9	16.6	9.5	37.0	14.4	13.1				
Green Ext Time (p_c), s	0.0	7.1	0.0	1.0	0.0	2.4	0.0	2.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	50.8											
HCM 6th LOS	D											

HCM 6th AWSC  
 3: Monte Vista Road & Bear Valley Road

07/23/2021

Intersection	
Intersection Delay, s/veh	31.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕		↕	↕	
Traffic Vol, veh/h	54	289	3	8	294	384	2	15	6	379	26	78
Future Vol, veh/h	54	289	3	8	294	384	2	15	6	379	26	78
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
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	57	304	3	8	309	404	2	16	6	399	27	82
Number of Lanes	0	1	0	0	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	31.5	25	12.9	40.8
HCM LOS	D	C	B	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	9%	16%	3%	0%	100%	0%
Vol Thru, %	65%	84%	97%	0%	0%	25%
Vol Right, %	26%	1%	0%	100%	0%	75%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	346	302	384	379	104
LT Vol	2	54	8	0	379	0
Through Vol	15	289	294	0	0	26
RT Vol	6	3	0	384	0	78
Lane Flow Rate	24	364	318	404	399	109
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.062	0.767	0.652	0.747	0.894	0.213
Departure Headway (Hd)	9.186	7.585	7.386	6.654	8.064	7.011
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	389	477	490	542	451	512
Service Time	7.265	5.625	5.132	4.399	5.803	4.749
HCM Lane V/C Ratio	0.062	0.763	0.649	0.745	0.885	0.213
HCM Control Delay	12.9	31.5	23	26.6	48.8	11.6
HCM Lane LOS	B	D	C	D	E	B
HCM 95th-tile Q	0.2	6.7	4.6	6.4	9.6	0.8

# HCM 6th Signalized Intersection Summary

## 4: US-395 & Bear Valley Road

07/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	535	331	202	518	178	485	1502	259	220	1306	217
Future Volume (veh/h)	148	535	331	202	518	178	485	1502	259	220	1306	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	156	563	348	213	545	187	511	1581	273	232	1375	228
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	638	284	229	674	301	554	1709	762	257	1649	735
Arrive On Green	0.12	0.18	0.18	0.13	0.19	0.19	0.17	0.47	0.47	0.15	0.46	0.46
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	3326	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	156	563	348	213	545	187	511	1581	273	232	1375	228
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1663	1805	1610	1714	1805	1610
Q Serve(g_s), s	10.5	18.3	15.0	14.8	17.4	12.8	18.2	49.2	7.8	16.0	40.1	10.8
Cycle Q Clear(g_c), s	10.5	18.3	15.0	14.8	17.4	12.8	18.2	49.2	7.8	16.0	40.1	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	638	284	229	674	301	554	1709	762	257	1649	735
V/C Ratio(X)	0.74	0.88	1.22	0.93	0.81	0.62	0.92	0.93	0.36	0.90	0.83	0.31
Avail Cap(c_a), veh/h	211	638	284	229	674	301	554	1709	762	257	1649	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	48.2	24.7	51.5	46.7	44.9	49.2	29.6	7.3	50.1	28.6	20.6
Incr Delay (d2), s/veh	12.7	13.8	127.8	41.1	7.3	3.9	21.0	10.0	1.3	31.8	5.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	9.4	15.8	8.9	8.5	5.4	9.1	23.0	2.8	9.1	18.1	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	61.9	152.4	92.6	54.0	48.8	70.3	39.7	8.6	81.9	33.7	21.7
LnGrp LOS	E	E	F	F	D	D	E	D	A	F	C	C
Approach Vol, veh/h		1067			945			2365			1835	
Approach Delay, s/veh		91.7			61.7			42.7			38.3	
Approach LOS		F			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	58.8	18.0	23.2	22.0	56.8	16.8	24.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	54.3	13.5	18.7	17.5	52.3	12.3	19.9				
Max Q Clear Time (g_c+110), s	110.0	51.2	16.8	20.3	20.2	42.1	12.5	19.4				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	7.0	0.0	0.3				

### Intersection Summary

HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

# APPENDIX D: FAIR SHARE CALCULATIONS

D-1 - Project Fair Share Calculation

Intersection	AM Peak Hour					PM Peak Hour					Project Fair Share %
	Total Volume		Total Growth	Project Trips	Project %	Total Volume		Total Growth	Project Trips	Project %	
	2021	2023 With Project				2021	2023 With Project				
3 . Monte Vista Road/Bear Valley Road	259	464	205	78	38.05%	244	384	140	52	37.143%	38.05%