Desert Valley Hospital Emergency Department Expansion
Victorville, CA

Traffic Study Final Report

February 2025

APPROVED
CITY OF VICTORVILLE
ENGINEERING DEPARTMENT
02/24/2025

Prepared For:
Desert Valley Hospital
16850 Bear Valley Road
Victorville, CA 92395

Prepared By:
STC Traffic, Inc.
5973 Avenida Encinas, Suite 218
Carlsbad, CA 92008

REGISTERED PROFESSIONAL ENGINEER
MYLES A. BAIDY
TR 3094
EXP. 03/31/26
TRAFFIC
STATE OF CALIFORNIA

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1

1.1 Intersection Level of Service Analysis Summary 1
1.2 Traffic Signal Warrant Analysis Results 2
1.3 Recommended Off-Site Intersection Improvements 3
1.4 Fair Share Calculations 4
1.5 Parking Analysis Results 4

2 INTRODUCTION 5

2.1 Project Description 5
2.2 Study Area 6
2.3 Analysis Scenarios 6

3 EXISTING CONDITIONS 10

3.1 Roadway Network 10
3.2 Transit Service 10
3.3 Pedestrian and Bicycle Facilities 10
3.4 Existing Traffic Volumes 11

4 SITE ACCESS AND CIRCULATION 14

5 FUTURE VOLUME FORECAST 16

5.1 Project Trip Generation 16
5.2 Project Trip Distribution and Assignment 16
5.3 Opening Year 2027 Volumes 16
5.4 Horizon Year 2037 Volumes 17

6 LEVEL OF SERVICE METHODOLOGY 30

6.1 Intersection Level of Service Analysis 30
6.2 Level of Service Performance Standards and Effects of Project Traffic 31

7 INTERSECTION LEVEL OF SERVICE ANALYSIS 32

7.1 Existing Intersection LOS Analysis 32
7.2 Opening Year 2027 Without and With Project Intersection LOS Analysis 33
7.3 Horizon Year 2037 Without and With Project Intersection LOS Analysis 34

8 TRAFFIC SIGNAL WARRANT ANALYSIS 35

9 ON-SITE PARKING ANALYSIS 36

10 FINDINGS AND RECOMMENDATIONS 37

10.1 Intersection LOS Analysis Summary 37
10.2 Traffic Signal Warrant Analysis 38
10.3 Recommended Off-Site Intersection Improvements 38
10.4 Fair Share Calculations 39
10.5 Parking Analysis Results 40
10.6 Conclusion 40

LIST OF FIGURES

Figure 2-1: Project Location 7
Figure 2-2: Project Site Plan 8
Figure 2-3: Project Study Area 9
Figure 3-1: Existing Intersection Geometry and Control 12
Figure 3-2: Existing Intersection Volumes 13
Figure 4-1: Intersection Geometry and Control with Project Improvements 15
Figure 5-1: Project Trip Distribution 19
Figure 5-2: Project Trip Assignment 20
Figure 5-3: Opening Year 2027 Without Project Volumes 21
Figure 5-4: Opening Year 2027 With Project Volumes 22
Figure 5-5: Cumulative Development Locations 23
Figure 5-6: CS Cumulative Project Trip Distribution 24
Figure 5-7: CS Cumulative Project Trip Assignment 25
Figure 5-8: CU Cumulative Project Trip Distribution 26
Figure 5-9: CU Cumulative Project Trip Assignment 27
Figure 5-10: Horizon Year 2037 Without Project Volumes 28
Figure 5-11: Horizon Year 2037 With Project Volumes 29

LIST OF TABLES

Table 1-1: Intersection LOS Analysis Summary 1
Table 1-2: Intersection LOS Analysis with Improvements Summary 3
Table 1-3: Bear Valley Road & Second Avenue Fair Share Calculations 4
Table 1-4: Bear Valley Road & First Avenue Fair Share Calculations 4
Table 5-1: Project Trip Generation Calculation 16
Table 5-2: Cumulative Project Land Use and Trip Generation Summary 17
Table 6-1: HCM Level of Service Threshold 30
Table 7-1: Existing Intersection LOS Analysis Summary 32
Table 7-2: Opening Year 2027 Without and With Project Intersection LOS Analysis Summary 33
Table 7-3: Horizon Year 2037 Without and With Project Intersection LOS Analysis Summary 34
Table 8-1: Peak Hour Signal Warrant Analsysis Results 35
Table 9-1: Parking Requirement Summary 36
Table 10-1: Intersection LOS Analysis Summary 37
Table 10-2: Intersection LOS Analysis with Improvements Summary 39
Table 10-3: Bear Valley Road & Second Avenue Fair Share Calculations 39
Table 10-4: Bear Valley Road & First Avenue Fair Share Calculations 40

APPENDICES

Appendix A: Scoping Agreement
Appendix B: Traffic Count Data
Appendix C: Existing Intersection LOS Analysis Worksheets
Appendix D: Opening Year 2027 Intersection LOS Analysis Worksheets
Appendix E: Horizon Year 2037 Intersection LOS Analysis Worksheets
Appendix F: Signal Warrant Analysis Worksheets, Volumes, and Distribution
Appendix G: With Improvements Intersection LOS Analysis Worksheets

1 EXECUTIVE SUMMARY

The existing Desert Valley Hospital located at 16850 Bear Valley Road in the City of Victorville, CA is proposing an 80,000 square foot expansion of the Emergency Department (ED) consisting of a new two-story building adjacent to the existing hospital with direct connections on both floors. The transportation study assesses the effects of the proposed project on the surrounding circulation network, in addition to evaluating parking needs, site access and circulation. The proposed project is anticipated to generate 862 daily trips with 66 trips during the AM peak hour and 69 trips during the PM peak hour.

1.1 Intersection Level of Service Analysis Summary

Study area intersection operations for all analysis scenarios are summarized in **Table 1-1** below.

Table 1-1: Intersection LOS Analysis Summary

Study Intersection		Peak Hour	Existing Conditions	Opening Year 2027		Project Impact?	Horizon Year 2037		Project Impact?
				Without Project	With Project		Without Project	With Project	
1	Bear Valley Rd & Second Ave	AM	C	D	D	No	**F**	**F**	**Yes**
		PM	D	**E**	**E**	No	**F**	**F**	**Yes**
2	Bear Valley Rd & Bornite Ave / Project Driveway #1 (Existing)	AM	D	D	C	No	**E**[1]	D	No
		PM	**F**[1]	**F**[1]	C	No	**F**[1]	**E**[2]	No
3	Bear Valley Rd & Project Driveway #2 (Proposed)	AM	N/A	N/A	B	N/A	N/A	C	No
		PM			C	N/A		D	No
4	Bear Valley Rd & First Ave	AM	C	C	C	No	**F**	**F**	**Yes**
		PM	D	D	D	No	**F**	**E**	**Yes**
5	Bear Valley Rd & Hesperia Rd	AM	**E**	**E**	**E**	No	**E**	**E**	No
		PM	D	D	D	No	**E**	**E**	No
6	Frist Ave & Jasmine St	AM	B	B	B	No	B	B	No
		PM	B	B	B	No	C	C	No
7	Hesperia Rd & Jasmine St	AM	C	C	C	No	C	C	No
		PM	C	C	C	No	**E**	**E**	**Yes**

*Deficient LOS indicated in **Bold***

[1] Indicates delay and LOS for worst movement (left turns exiting project driveway)

[2] Indicates delay and LOS for worst movement (right turns exiting Bornite Avenue)

As shown in Table 1-1, the following intersections operate at a deficient LOS E or F with and without the project:

- 1 – Bear Valley Road & Second Avenue
- 2 – Bear Valley Rd & Bornite Ave / Project Driveway #1
- 4 – Bear Valley Road & First Avenue
- 5 – Bear Valley Road & Hesperia Road
- 7 – Hesperia Road & Jasmine Street

The Bear Valley Road & Bornite Avenue / Project Driveway #1 intersection operates at a deficient LOS E during the PM peak hour in the Horizon 2037 with Project Scenario. As indicated in the HCM analysis worksheets included in the Appendices, northbound right turns exiting Bornite Avenue represent the worst-case movement. Ingress and egress of project traffic at the Project Driveway #1 does not impact the flow of traffic on Bear Valley Road. In addition, the proposed project improvements include extending a median across the intersection, thereby prohibiting left-turn movements into and out of Bornite Avenue/ Project Driveway #1. This measure enhances safety by minimizing potential conflicts and optimizing traffic flow to the best extent possible.

The intersection of Bear Valley Road & Hesperia Road also operates at a deficient LOS E during the Horizon Year 2037 with and without Project Scenarios. However, the intersection is anticipated to incur a minor increase in delay, and therefore, minimal impacts are expected due to project related trips.

The following intersections are anticipated to experience an impact due to project related trips during the Horizon Year and recommendations are provided in Section 1.3:

- 1 – Bear Valley Road & Second Avenue
- 4 – Bear Valley Road & First Avenue
- 7 – Hesperia Road & Jasmine Street

1.2 Traffic Signal Warrant Analysis Results

A traffic signal warrant analysis was conducted for the intersection of Bear Valley Road / First Avenue for the AM and PM peak hours under Existing conditions, Opening Year 2027 and Horizon Year 2037 with project scenarios, consistent with CA-MUTCD procedures. The results indicate a traffic signal is warranted under the Horizon Year 2037 conditions.

1.3 Recommended Off-Site Intersection Improvements

The following improvements are recommended for the Horizon Year 2037 with project conditions. A summary of the LOS results with the recommended off-site improvements are provided in **Table 1-2** below.

- **Bear Valley Road & Second Avenue** – Improve intersection to accommodate dual left-turn lanes for the eastbound Bear Valley Road approach and make appropriate adjustments to the signal timing.
- **Bear Valley Road & First Avenue –** Install a traffic signal at the intersection and allow full access to and from the intersection. Allowing full access at the intersection will facilitate the redistribution of traffic exiting the Project Site and cumulative developments in the immediate vicinity. This redistribution of traffic reduces traffic volume from the eastbound right turn movement at Hesperia Road & Jasmine Street, relieving deficient operations at this intersection.

Table 1-2: Intersection LOS Analysis with Improvements Summary

Study Intersection		Peak Hour	Horizon Year 2037 Conditions					
			Without Project		With Project		With Project with Improvements	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Bear Valley Road / Second Avenue	AM	**108.7**	**F**	**112.9**	**F**	**65.6**	**E**
		PM	**127.7**	**F**	**131.9**	**F**	**97.0**	**F**
4	Bear Valley Road / First Avenue	AM	**67.4**	**F**	**127**	**F**	9.2	A
		PM	**104.3**	**F**	**126.5**	**F**	26.7	C
7	Hesperia Road & Jasmine Street	AM	31.6	C	31.7	C	32.1	C
		PM	**61.3**	**E**	**64.6**	**E**	30.7	C

*Deficient LOS indicated in **Bold**.*
Delay in seconds.

1.4 Fair Share Calculations

Transportation improvements within the City of Victorville are financed through various means, including direct project mitigation, fair share contributions, or development impact fee programs. The project's financial contribution to these transportation improvement funding mechanisms, or as a fair share contribution towards facilities impacted cumulatively, should be deemed adequate to address the project's proportional responsibility for mitigating its traffic impacts. STC has calculated the project's fair share for Bear Valley Road & Second Avenue to be 3%, which is based on the PM peak hour project trips that are associated with this intersection, as shown in **Table 1-3**.

Table 1-3: Bear Valley Road & Second Avenue Fair Share Calculations

#	Intersection	Peak Hour	Existing Peak Hour Volume (A)	Horizon Year 2037 Volume with Project (B)	Project Volume (C)	Fair Share Percentage (C)/(B-A)
1	Bear Valley Road & Second Avenue	PM	3,538	5,150	48	3%

The fair share calculation formula for Bear Valley Road & First Avenue was based on direction from City transportation staff using the highest peak hour volume (AM) for the 2027 Opening Year With Project Volume and the 2037 Horizon Year With Project Volume. This equates to a 14.4% fair share contribution, however, the City agreed to a recommended fair share of 10%, as shown in **Table 1-4.**

Table 1-4: Bear Valley Road & First Avenue Fair Share Calculations

#	Intersection	Peak Hour	Opening Year 2027 Volume with Project (A)	Horizon Year 2037 Volume with Project (B)	Fair Share Percentage (A)/(B)	Recommended Fair Share
4	Bear Valley Road & First Avenue	AM	65	450	14.4%	10%

1.5 Parking Analysis Results

A parking analysis was performed to evaluate the number of parking spaces required for the proposed Project in accordance with the City of Victorville Municipal Code. A minimum of 183 parking spaces are necessary to adequately support the operations of the proposed Emergency Department expansion. As part of the Project, 162 parking spaces are proposed to be developed on-site, which falls short of the parking requirements by 21 spaces. However, the hospital currently has a surplus of 228 parking spaces based on the requirements for the entire site, and therefore, the 21 spaces will reduce the overall surplus of parking provided by the site to 207. In total, 997 parking spaces will be provided.

2 INTRODUCTION

This report summarizes the findings of the traffic study for the Desert Valley Hospital Emergency Department Expansion project located at 16850 Bear Valley Road in the City of Victorville, CA. The purpose of the study is to assess the operating condition of nearby intersections without and with the proposed project (Project), and to evaluate the site access, internal site circulation, parking and pedestrian accessibility and connectivity. This study was conducted in accordance with the *City of Victorville General Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service and Improvement Needs (January 20, 2005), Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County (June 2016)* and in consultation with City of Victorville Engineering Department staff during the scoping agreement process. The approved scoping agreement letter is provided in **Appendix A**.

2.1 Project Description

The project is proposing an 80,000 square foot expansion of the Emergency Department (ED) consisting of a new two-story building adjacent to the existing hospital with direct connections on both floors. The new building will include offices, medical/surgical patient rooms, treatment bays, waiting rooms, conference rooms, break rooms and other amenities. Site access will be provided through two restricted-access (right-in, right-out) driveways along Bear Valley Road and one full-access driveway along First Avenue. Additionally, internal circulation will allow access to the project site via the main hospital entrance along Second Avenue.

The existing hospital driveway along Bear Valley Road, which currently aligns with Bornite Avenue, will be relocated east by approximately 60', to accommodate the expansion building footprint and required setbacks. Due to the realigned intersection, left turns into and out of the driveway and Bornite Avenue will be restricted with the construction of a raised median.

First Avenue, which currently terminates at the existing hospital east side driveway, will be extended to intersect Bear Valley Road. The existing roadway segment, west of the shopping center parking lot, and which extends from the shopping center west side driveway to Bear Valley Road will be removed. A new access point to the shopping center will be provided via First Avenue. At the intersection of Bear Valley Road & First Avenue, all movements will be permitted except for the southbound left turn movement from First Avenue onto Bear Valley Road, which will be restricted with a raised median extending from the driveway on the west. A raised median will extend from along Bear Valley Road from First Avenue to Second Avenue. The project site location map is shown in **Figure 2-1**. The proposed project site plan is shown in **Figure 2-2**.

2.2 Study Area

The intersections included in the traffic study are listed below and shown in **Figure 2-3:**

1. Bear Valley Road & Second Avenue (Signal)
2. Bear Valley Road & Bornite Avenue / Project Driveway #1 (Side street stop control. Realigned in the future with restricted access)
3. Bear Valley Road & Project Driveway #2 (Proposed) (Side street stop control)
4. Bear Valley Road & First Avenue (Side street stop control. Realigned in the future)
5. Bear Valley Road & Hesperia Road (signal)
6. First Avenue & Jasmine Street (Side street stop control)
7. Hesperia Road & Jasmine Street (Signal)

2.3 Analysis Scenarios

The following scenarios were evaluated in this traffic study:

- **Existing Traffic Conditions** (reflects existing roadway conditions at the time traffic volume data was collected in September 2023)
- **Opening Year 2027 Without Project Conditions** (existing conditions + 2% per year ambient growth)
- **Opening Year 2027 With Project Conditions** (Opening Year 2027 without Project conditions + Project trips)
- **Horizon Year 2037 Without Project Conditions** (Opening Year 2027 without Project conditions + 2% per year ambient growth + Cumulative development project trips))
- **Horizon Year 2037 With Project Conditions** (Horizon Year 2037 without Project conditions + Project trips)

Desert Valley Hospital Emergency Department Expansion

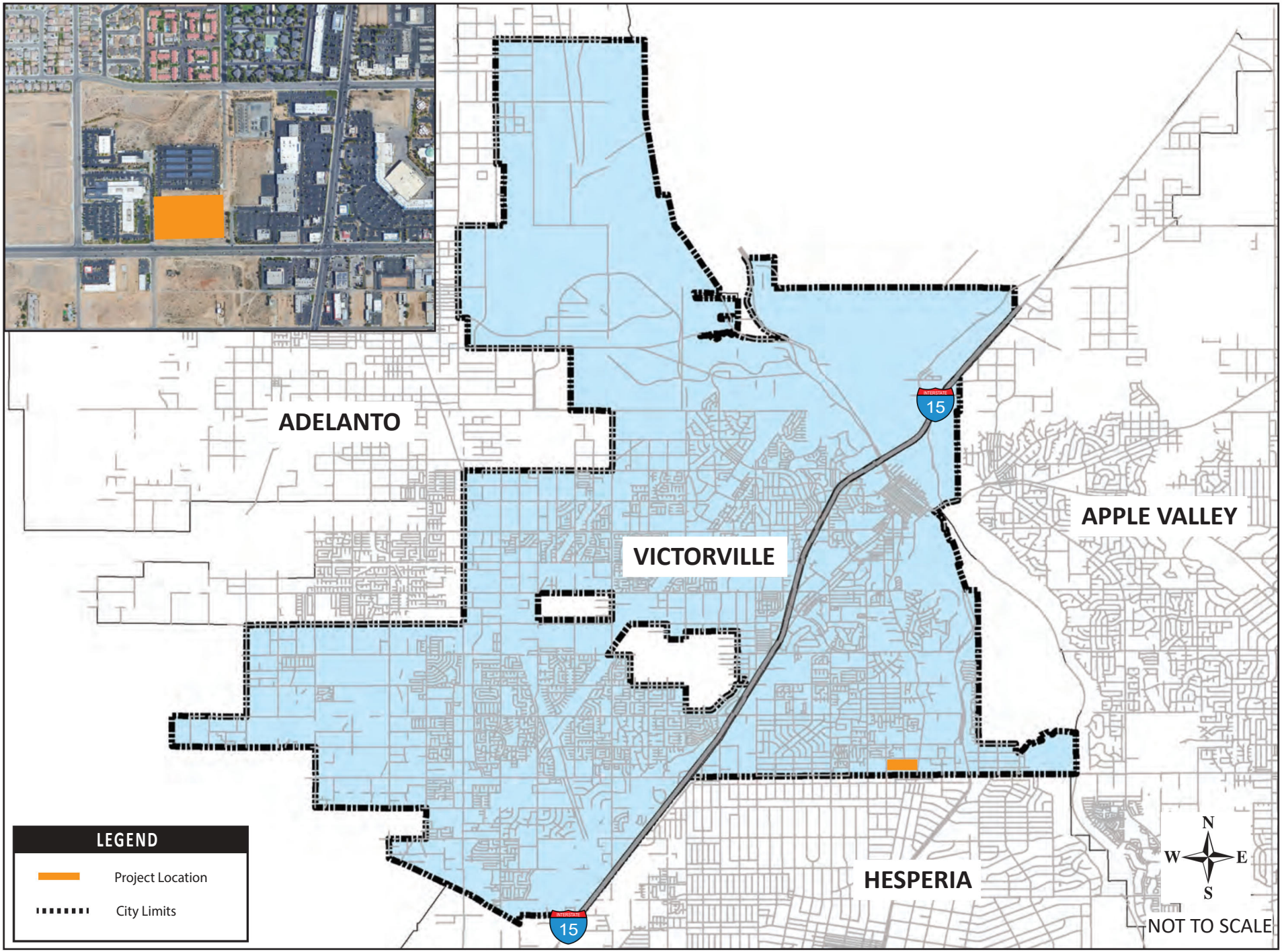
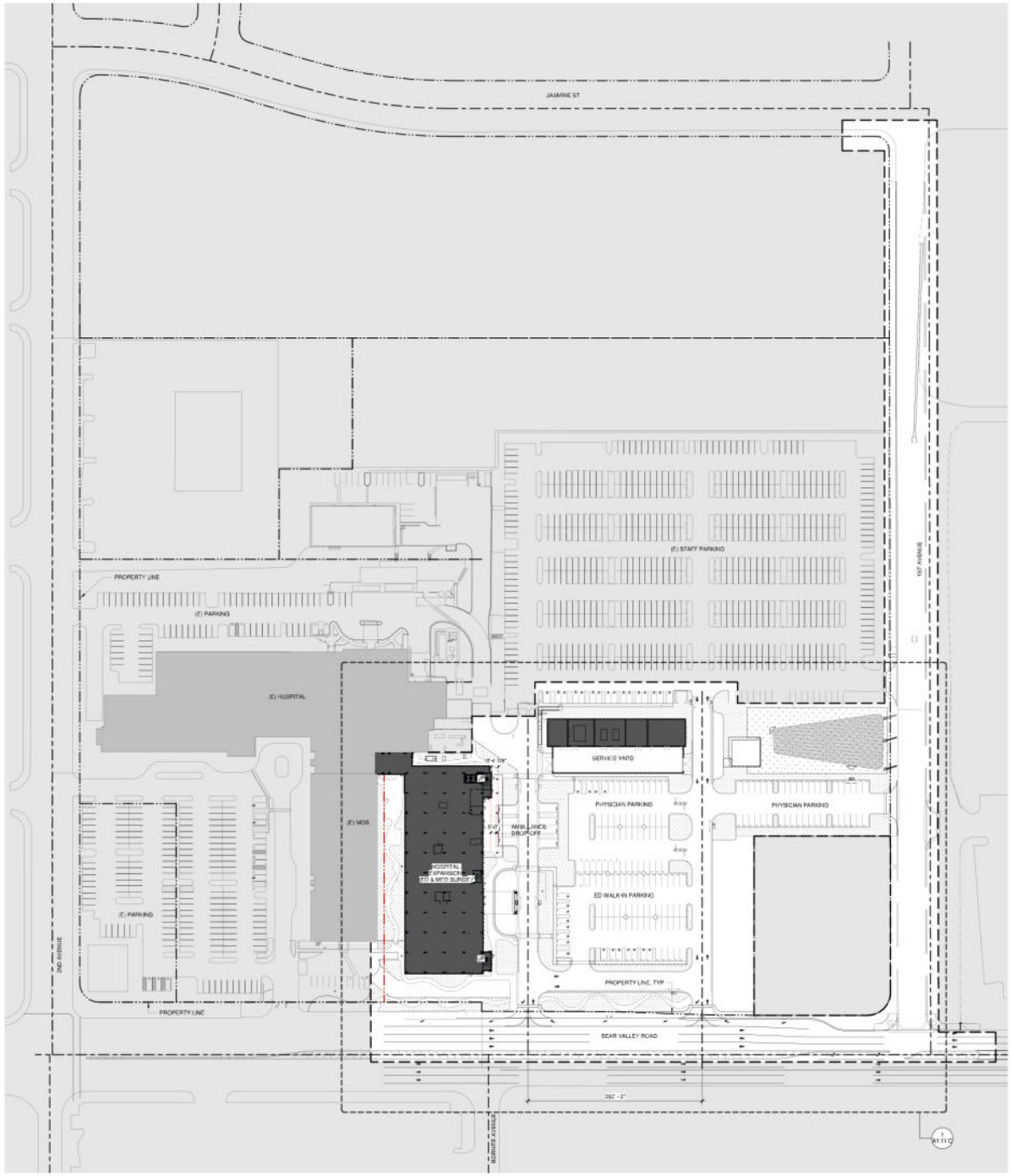


Figure 2-1
Project Loca! on



LEGEND

- CENTERLINE OF STREET
- PROPERTY LINE
- EASEMENT
- AREA OF WORK
- EXISTING BUILDING
- EXISTING SITE AREA - (NOT IN SCOPE)
- NEW BUILDING - UNDER HCAI JURISDICTION

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL ABOVE GRADE AND BELOW GRADE ITEMS REQUIRED FOR CONSTRUCTION OF NEW BUILDINGS.
2. ALL PAVING, VEGETATION, UTILITIES, ETC OUTSIDE SCOPE OF DEMOLITION BOUNDARY SHALL BE PROTECTED IN PLACE.
3. REFER TO CIVIL, LANDSCAPE, AND MEP DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

OVERALL CAMPUS SITE PLAN - PROPOSED CONDITIONS 1
1/64" = 1'-0"

Prime Healthcare

HMC Architects
1309-003-000
3546 CONCOURS STREET
ONTARIO, CA 91764
909.989.9779 / www.hmcarchitects.com

ISSUE

#	DESCRIPTION	DATE
1	CITY SUBMITTAL - 100% DD	06/06/2024

AGENCY APPROVAL:

The type of approval to be issued by The Agency Having Jurisdiction for this project is

CITY OF VICTORVILLE PERMIT # XXXXXXXX

FACILITY:
DESERT VALLEY HOSPITAL

16850 BEAR VALLEY ROAD
VICTORVILLE, CA 92395

PROJECT:
PRIME DESERT VALLEY HOSPITAL - ED & MED SURGE BUILDING ADDITION STREET & B PERMIT MAKE-READY

SHEET NAME:
OVERALL CAMPUS SITE PLAN - PROPOSED CONDITIONS

CITY SUBMITTAL

DATE: 06/06/2024 | CLIENT PROJ NO:

SHEET:

A1.01.C

Figure 2-2
Site Plan

Desert Valley Hospital Emergency Department Expansion

List of Intersections

1. Bear Valley Road & Second Avenue
2. Bear Valley Road & Bornite Avenue / Project Driveway #1
3. Bear Valley Road & Project Driveway #2 (Proposed)
4. Bear Valley Road & First Avenue
5. Bear Valley Road & Hesperia Road
6. First Avenue & Jasmine Street
7. Hesperia Road & Jasmine Street



Figure 2-3
Project Study Area

3 EXISTING CONDITIONS

The following section summarizes the existing conditions of the study area transportation system. Intersection geometries are shown in **Figure 3-1.**

3.1 Roadway Network

Bear Valley Road within the project study limits runs east-west and is classified as a Super Arterial and designated as truck route in the City's General Plan. The roadway has six lanes and a center two-way-left-turn-lane. Parking is restricted on both sides of the roadway. The posted speed limit is 50 mph.

Hesperia Road within the project study area runs north-south and is classified as a Super Arterial and designated as truck route in the City's General Plan. The roadway has four lanes and a center two-way-left-turn-lane. Parking is restricted on both sides of the roadway. The posted speed limit is 50 mph.

Jasmine Street within the project study limits runs east-west and is classified as an Arterial in the City's General Plan. The roadway has four lanes and has no center median. Parking is permitted on both sides of the roadway. The posted speed limit is 40 mph.

Second Avenue within the project study limits runs north-south and is classified as an Arterial in the City's General Plan. The roadway has four lanes and a center two-way-left-turn-lane. Parking is restricted on both sides of the roadway. The posted speed limit is 45 mph.

First Avenue within the project study limits runs north-south and is classified as a Collector in the City's General Plan. The roadway has two lanes and has no center median. The roadway, south of Jasmine Street currently does not have curb and gutter or a posted speed limit sign and dead ends at the hospital's driveway.

3.2 Transit Service

Bus service in the City of Victorville is provided by Victor Valley Transit Authority (VVTA). The closest bus stop is located at the intersection of Bear Valley Road / Second Avenue which is approximately 400 feet from the project site and is served by Route 50. In addition, Route 53 serves bus stops along Jasmine Street and Second Avenue in the vicinity of the project site.

3.3 Pedestrian and Bicycle Facilities

Sidewalk exists along most parts of the study area roadway segments with gaps at intermittent locations. There is no sidewalk along the project frontage on Bear Valley Road. Within the project study limits, Class II bike lanes exist on Hesperia Road. There is no bike facility along other study roadway segments.

3.4 Existing Traffic Volumes

Intersection turning movement counts (vehicle, bicycle and pedestrian) were collected on Wednesday, September 6, 2023, for the AM peak period (06:00 AM to 09:00 AM) and PM peak period (3:00 PM to 7:00 PM). The AM and PM peak hour intersection volumes are shown in **Figure 3-2**. The traffic count data are included in **Appendix B**.

Desert Valley Hospital Emergency Department Expansion

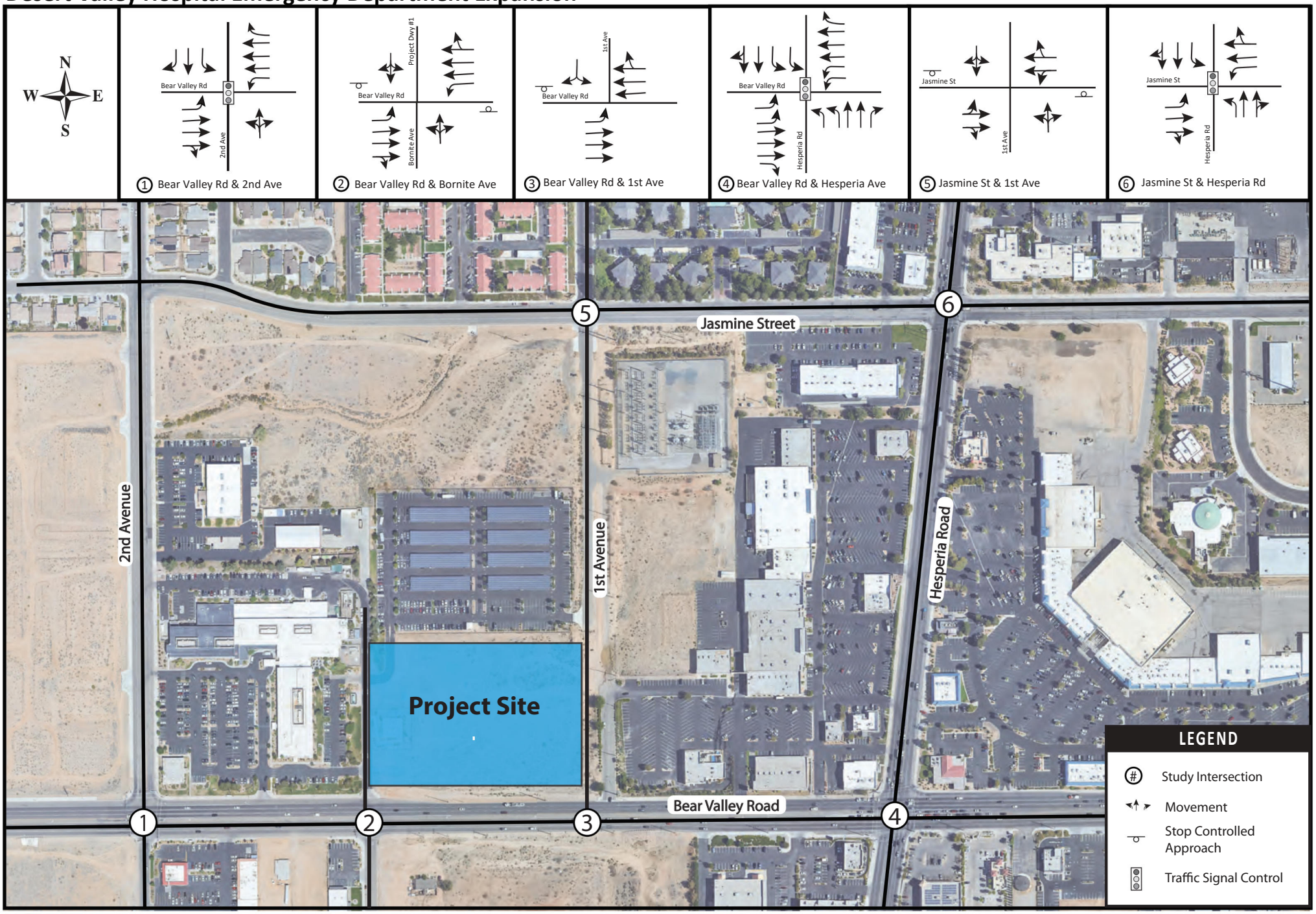


Figure 3-1
Exisng InĀtersection Geometry and Control

Desert Valley Hospital Emergency Department Expansion

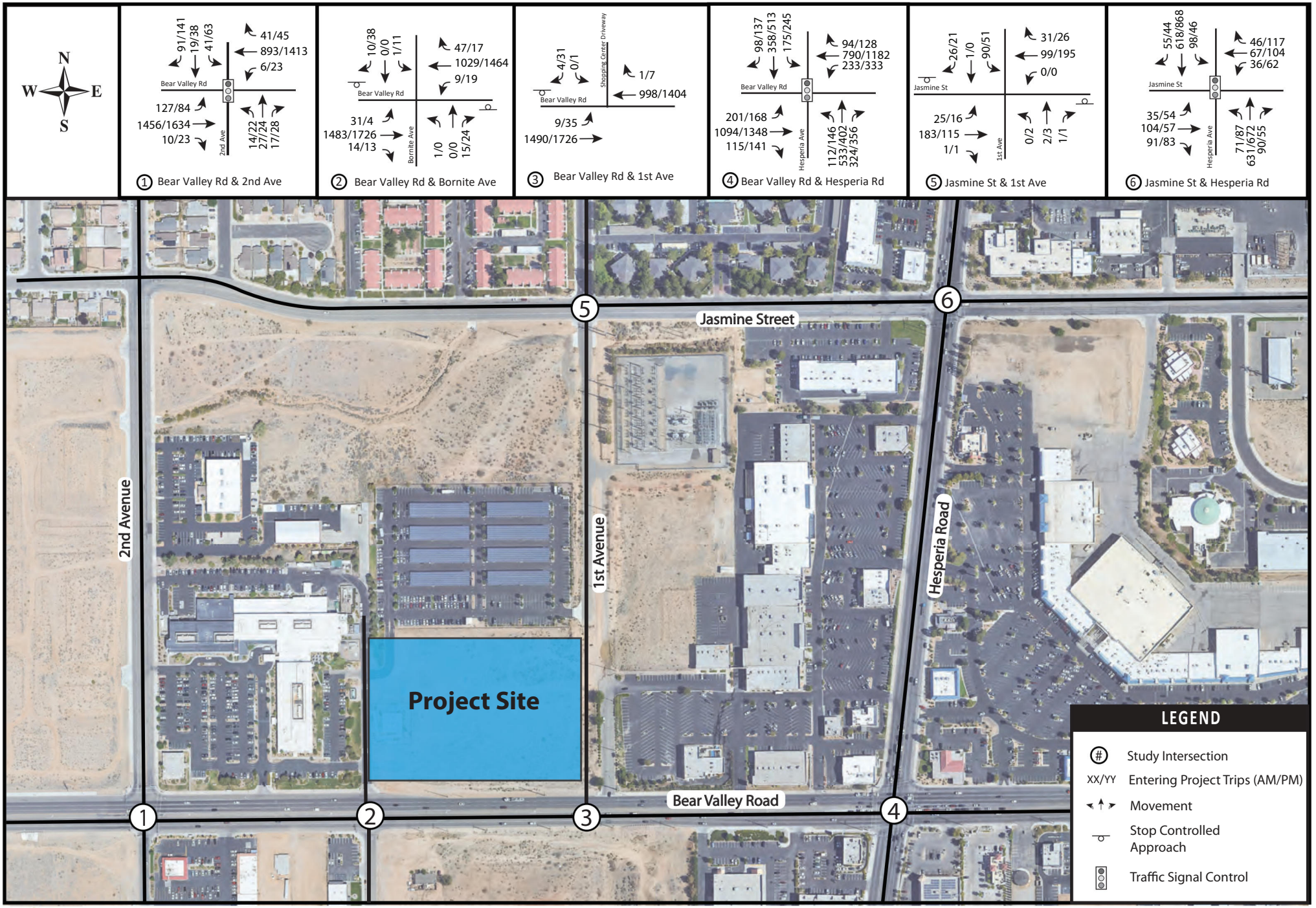


Figure 3-2
Exisng InĀtersection Volumes

4 SITE ACCESS AND CIRCULATION

Access to the proposed ED expansion Project site will be provided through the driveways on Bear Valley Road and the existing driveways on First Avenue and Second Avenue. The existing driveway on Bear Valley Road, which currently aligns with Bornite Avenue will be shifted east and will be restricted to a right-in right-out movement only. An additional driveway along Bear Valley Road will be provided west of First Avenue and will be restricted to a right-in right-out movement only. A raised median will be constructed along Bear Valley Road from First Avenue to Second Avenue to restrict left turn movement into and out of the driveways. The driveways on First Avenue and Second Avenue will be full access driveways. The internal circulation lanes provide access through the site connecting all four driveways. **Figure 4-1** depicts the future intersection geometry with the project improvements.

The project proposes to construct a sidewalk along the project frontage on Bear Valley Road. Within the project site, the project includes Americans with Disabilities Act (ADA) compliant pedestrian accessways to connect the parking lots with the hospital buildings.

Desert Valley Hospital Emergency Department Expansion

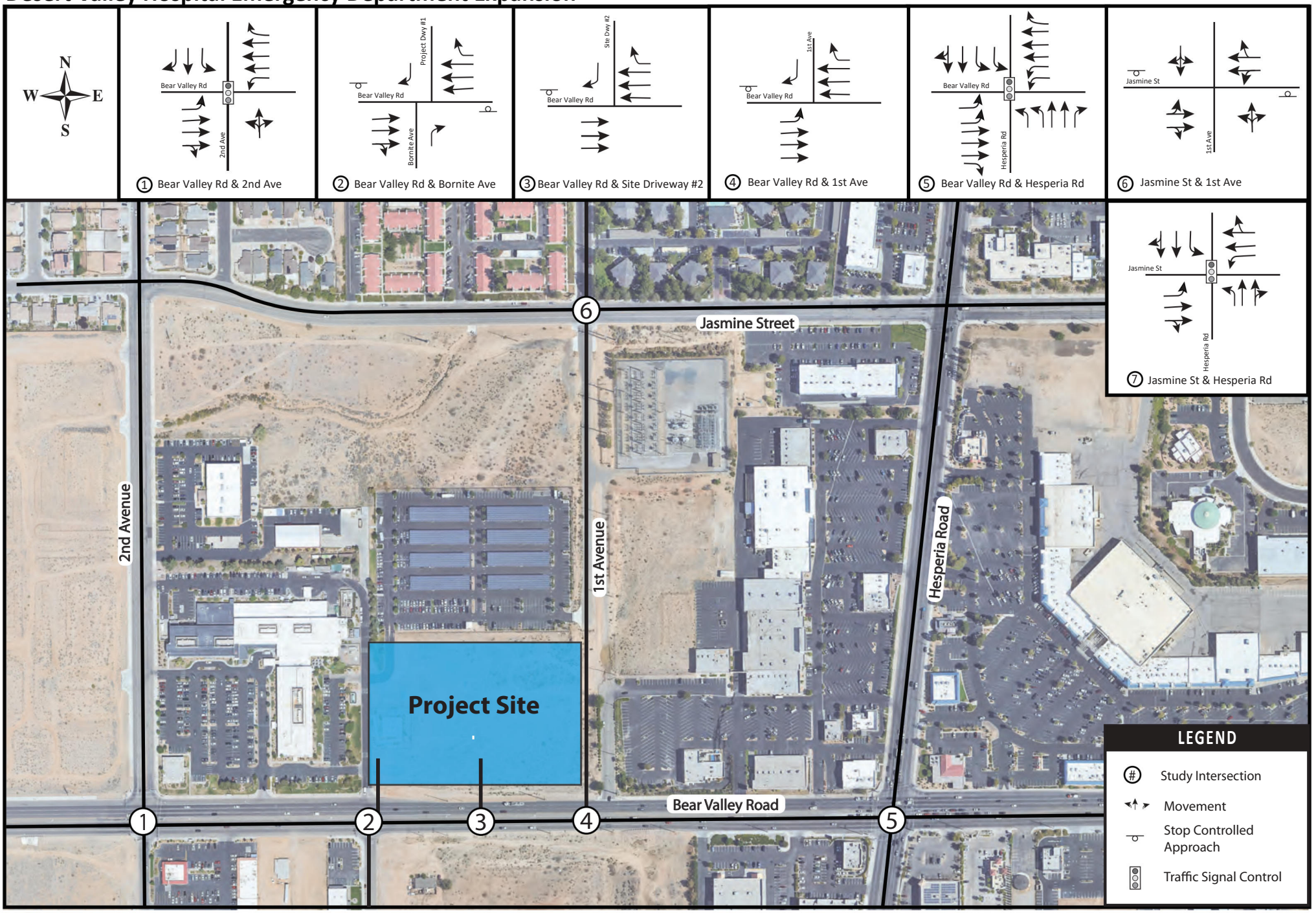


Figure 4-1
Intersection Geometry and Control with Project Improvements

5 FUTURE VOLUME FORECAST

This section provides details on the future volume forecast methodology, project trip generation, distribution and assignment.

5.1 Project Trip Generation

The *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition* was used to perform the preliminary trip generation analysis for the project. Trip generation rates provided for ITE Land Use Code 610 – Hospital, were applied to the building square footage (gross floor area) of the proposed ED Expansion to calculate project trips. The trip rates and trip generation calculations are shown in **Table 5-1.**

Table 5-1: Project Trip Generation Calculation

Description	Quantity (KSF)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Trip Rates (ITE 610 – Hospital)		10.77	67%	33%	0.82	35%	65%	0.86
Proposed Project Trips (GFA)	80.00	**862**	**44**	**22**	**66**	**24**	**45**	**69**

KSF – Thousand Square Feet
GFA – Gross Floor Area

As shown in Table 5-1, the proposed project is anticipated to generate 862 daily trips with 66 trips during the AM peak hour and 69 trips during the PM peak hour.

5.2 Project Trip Distribution and Assignment

The project trips were distributed within the study area based on existing traffic patterns and roadway network in the vicinity of the project site. The project trips were assigned to each project driveway based on the location and access restriction of the respective driveways. The anticipated project trip distribution is shown in **Figure 5-1**.

The AM and PM peak hour volumes generated by the project site were applied to the trip distribution percentages and assigned to the study area intersections as shown in **Figure 5-2**.

5.3 Opening Year 2027 Volumes

The Opening Year 2027 Without project volumes were developed by applying an ambient growth rate of 2% per year to the existing traffic volumes. Trips generated by the proposed project were added to the Opening Year 2027 Without project volumes to develop the Opening Year 2027 With project volumes. The Opening Year 2027 Without and With project volumes are shown in **Figure 5-3** and **Figure 5-4** respectively.

5.4 Horizon Year 2037 Volumes

Coordination with the City was conducted to determine approved projects within the surrounding area. Based on discussions with City Staff, two empty parcels, located directly to the north and east of the Project Site, were identified as future developments to be included as part of background growth. Since these parcels do not have any current plans to be developed, City Staff agreed to include these parcels in the Horizon Year 2037 volumes. Project trips for the undeveloped parcels were generated based on the parcels' land use codes and were confirmed with City Staff. The cumulative project trips were distributed within the study area based on existing traffic patterns and anticipated roadway network. **Figure 5-5** shows the location of nearby cumulative developments, while **Figure 5-6** through **Figure 5-9** shows the trip distribution and trip assignment of each cumulative development. A summary of cumulative projects land uses and anticipated trip generation is shown in **Table 5-2**.

Table 5-2: Cumulative Project Land Use and Trip Generation Summary

Land Use and Size	Trip Rate and Credits	Daily	AM Peak Hour					PM Peak Hour				
			Rate	Split	In	Out	Total	Rate	Split	In	Out	Total
CA[1] (4 MOBs[2]) Medical Office Building (LU 720) 56.250 KSF	Trip Rate: 31.86 /KSF	1792	2.68	81:19	122	29	151	2.84	25:75	40	120	160
Medical Office Building (LU 720) 56.250 KSF	Trip Rate: 31.86 /KSF	1792	2.68	81:19	122	29	151	2.84	25:75	40	120	160
Medical Office Building (LU 720) 56.250 KSF	Trip Rate: 31.86 /KSF	1792	2.68	81:19	122	29	151	2.84	25:75	40	120	160
Medical Office Building (LU 720) 56.250 KSF	Trip Rate: 31.86 /KSF	1792	2.68	81:19	122	29	151	2.84	25:75	40	120	160
Total CA Trips (4 MOBs)					**488**	**116**	**604**			**160**	**480**	**640**
C2[3] (1 MOB) Medical Office Building (LU 720) 60.000 KSF	Trip Rate: 31.86/ KSF	1912	2.68	81:19	130	31	161	2.84	25:75	43	128	171
Total C2 Trips (1 MOB)					**130**	**31**	**161**			**43**	**128**	**171**

1 – CA = Administrative Professional Offices, per City direction land use was assumed to be Medical Office.
2 – MOB = Medical Office Building
3 – C2 = General Commercial, per City direction land use was assumed to be Medical Office.

The Horizon Year 2037 Without Project volumes were developed by applying an ambient growth rate of 2% per year to the Opening Year 2027 Without Project volumes. Vehicle trips from the undeveloped parcels near the Project site were then added to derive the final Horizon Year 2037 Without Project volumes. Trips generated by the proposed Project were added to the Horizon Year 2037 Without Project volumes to develop the Horizon Year 2037 With Project volumes. The Horizon Year 2037 Without and With Project volumes are shown in **Figure 5-10** and **Figure 5-11**, respectively.

Desert Valley Hospital Emergency Department Expansion

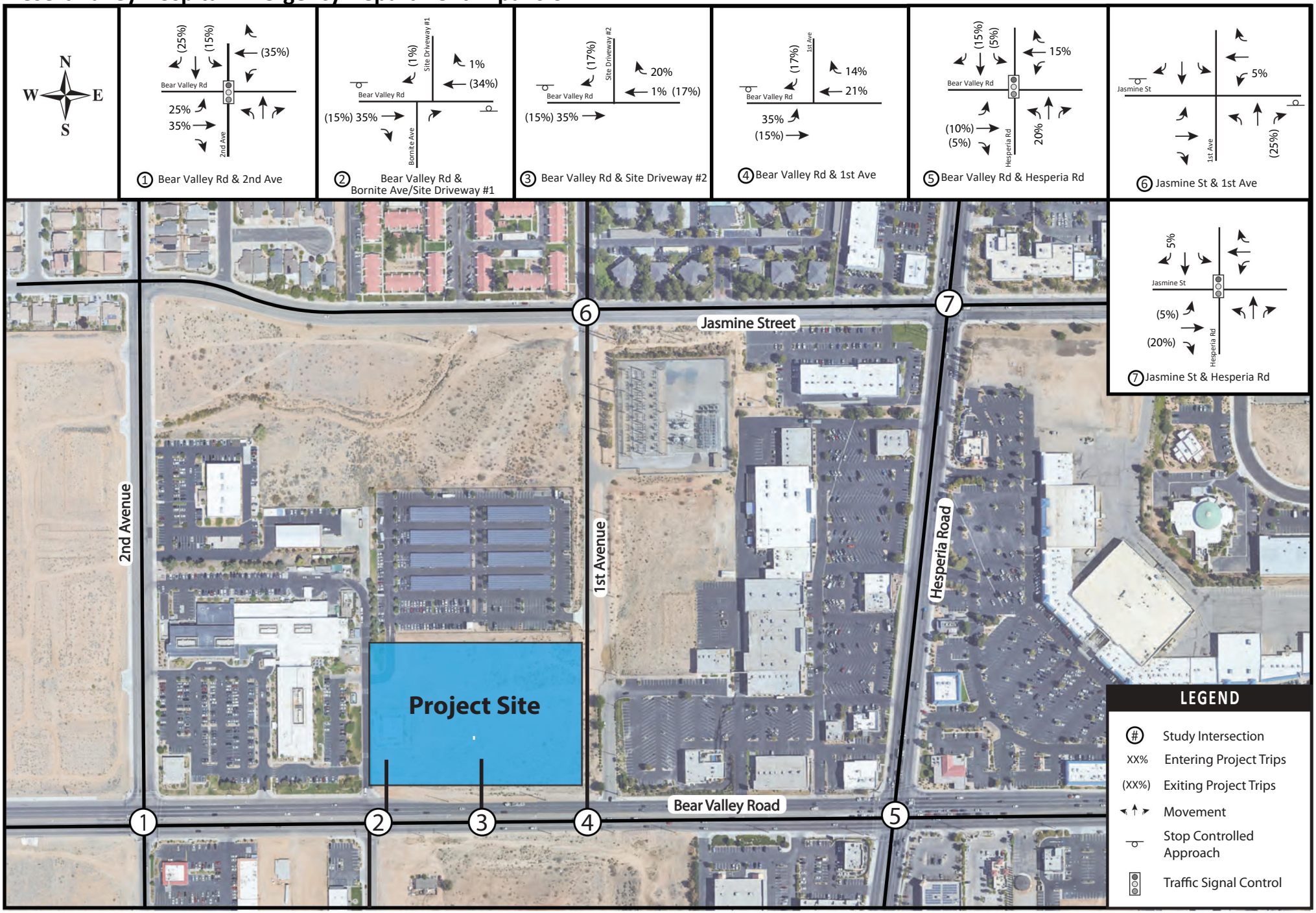


Figure 5-1
Project Trip Distribution

Desert Valley Hospital Emergency Department Expansion

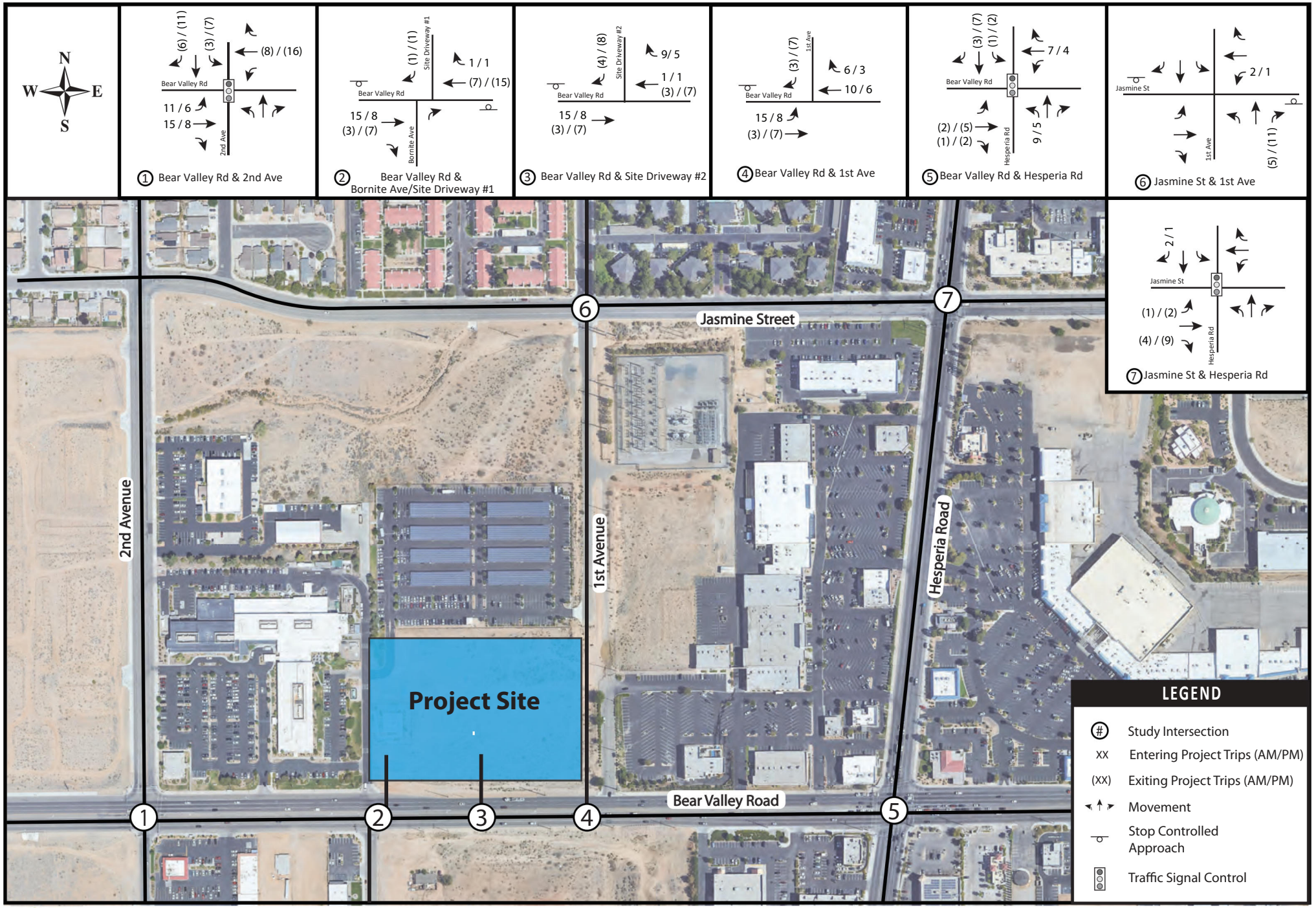


Figure 5-2
Project Trip Assignment

Desert Valley Hospital Emergency Department Expansion

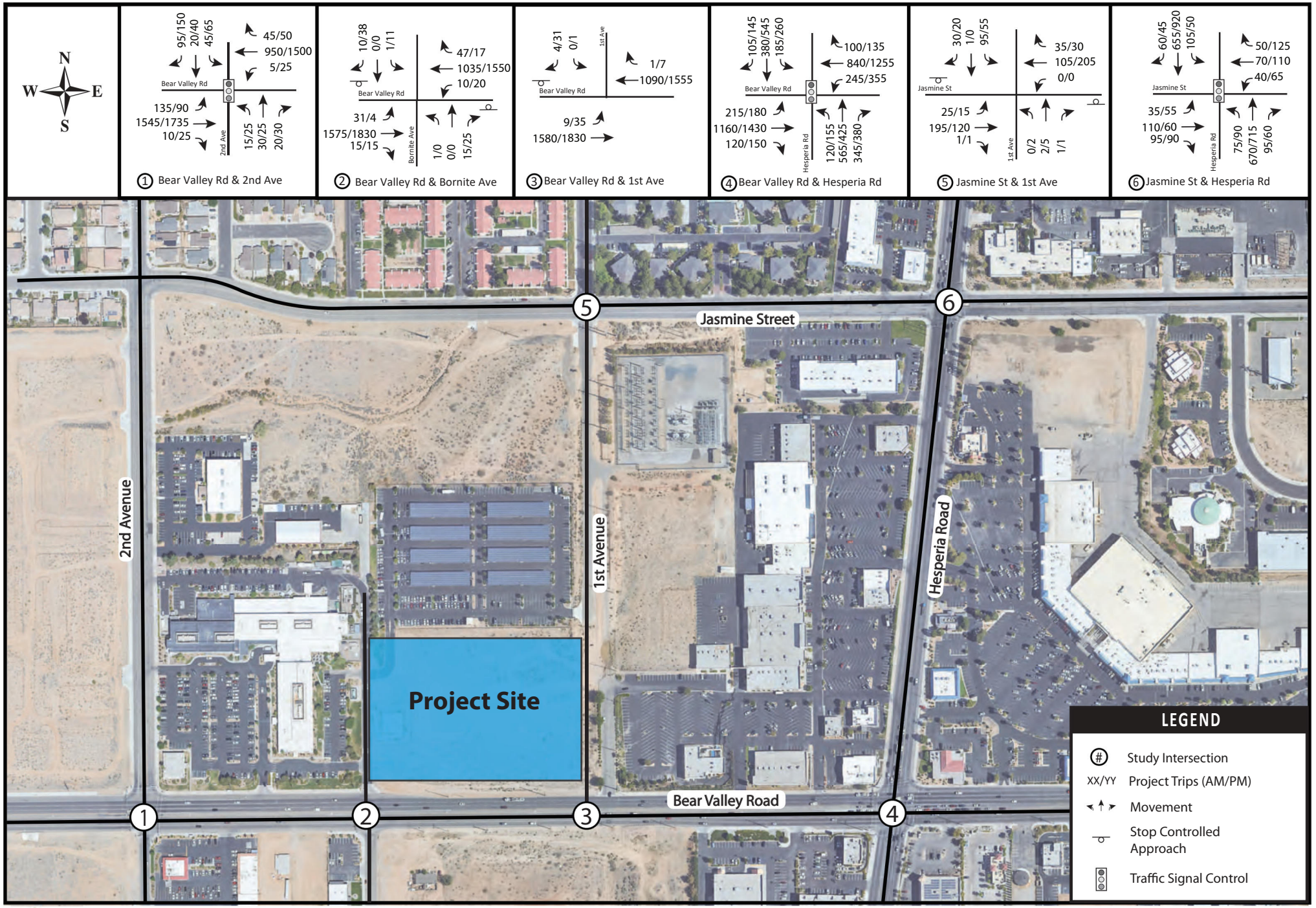


Figure 5-3
2027 Opening Year Without Project

Desert Valley Hospital Emergency Department Expansion

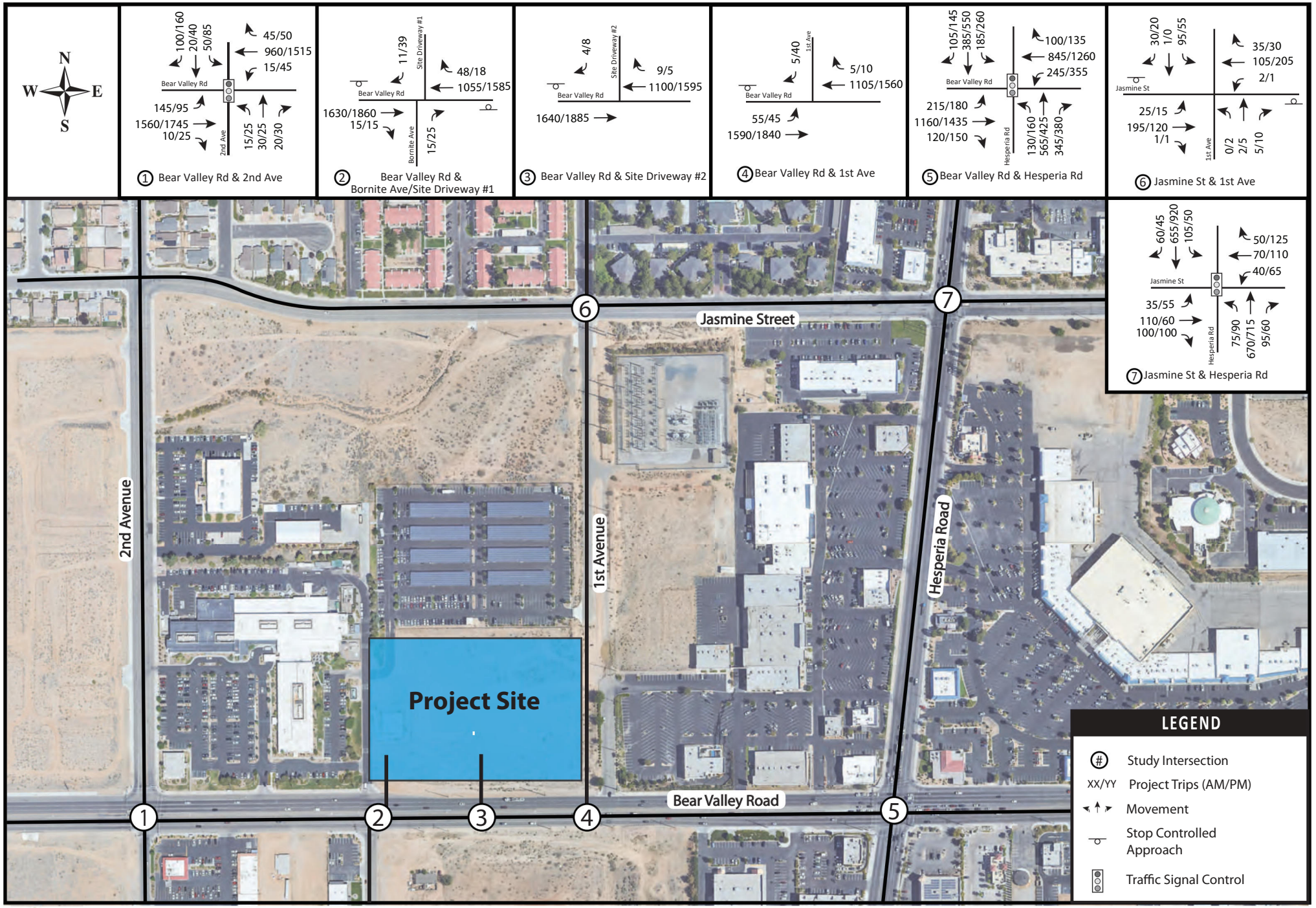


Figure 5-4
2027 Opening Year With Project

Desert Valley Hospital Emergency Department Expansion

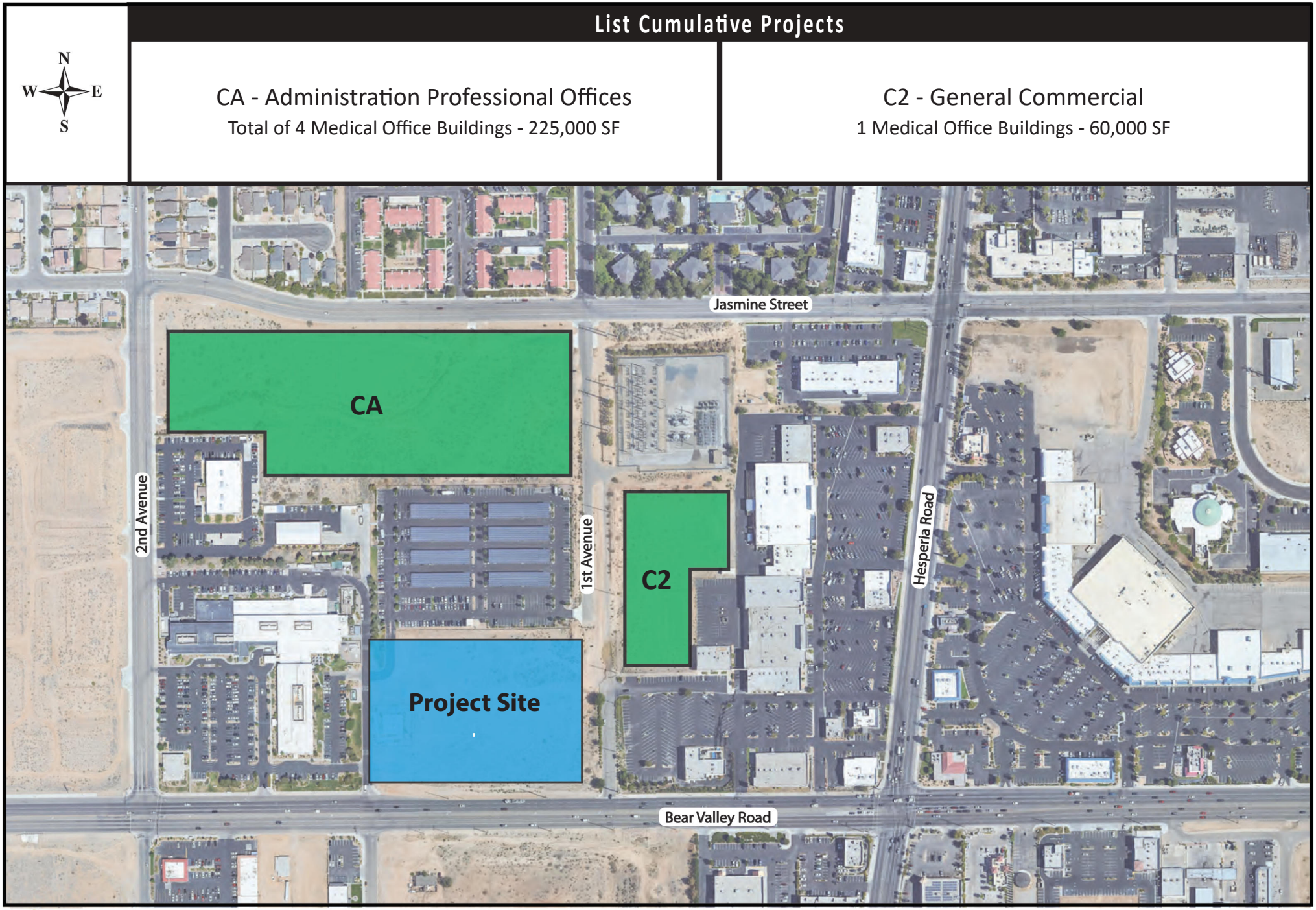


Figure 5-5
Cumulative Development Project Locations

Desert Valley Hospital Emergency Department Expansion

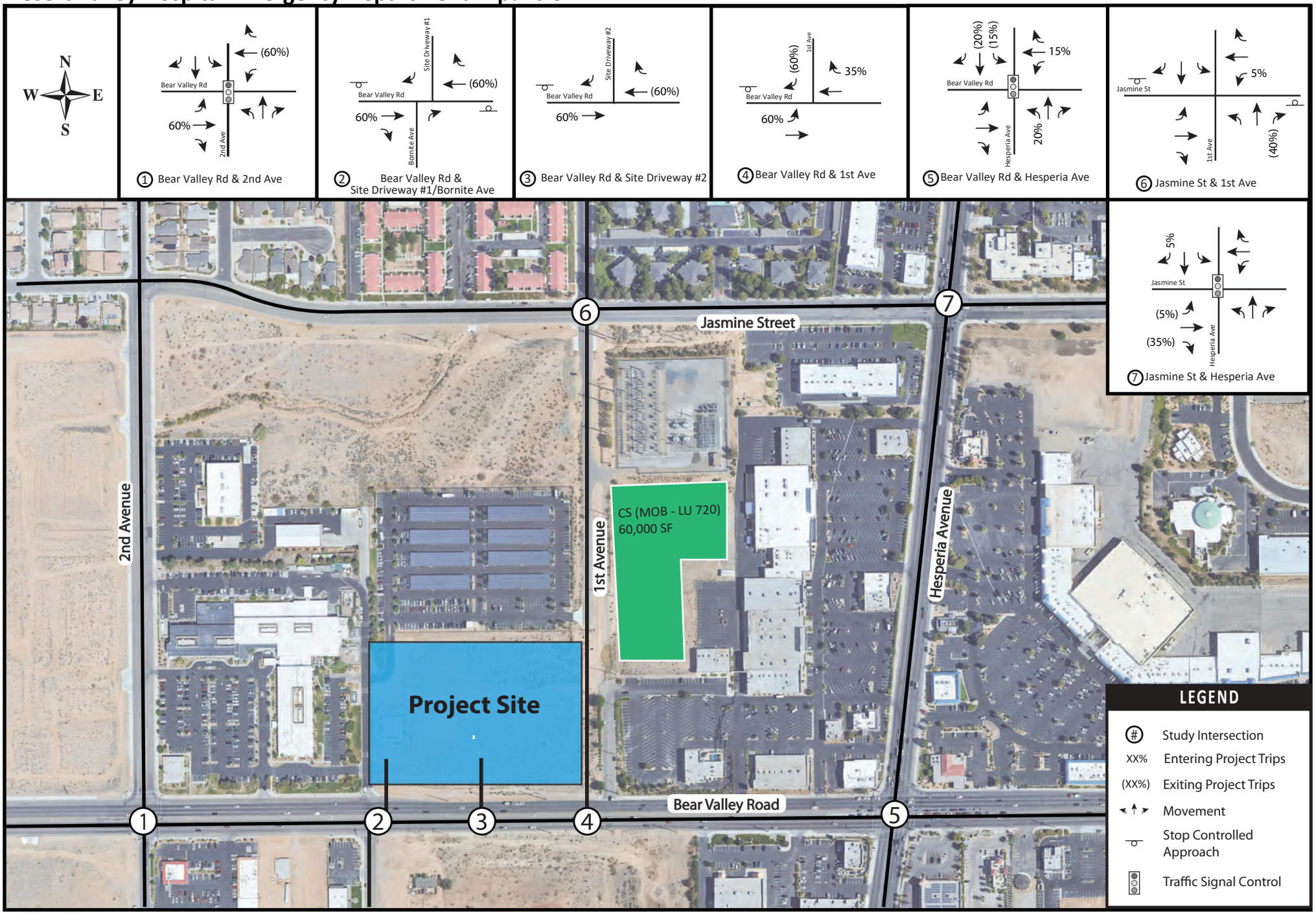


Figure 5-6
CS Cumulative Project Trip Distribution

Desert Valley Hospital Emergency Department Expansion

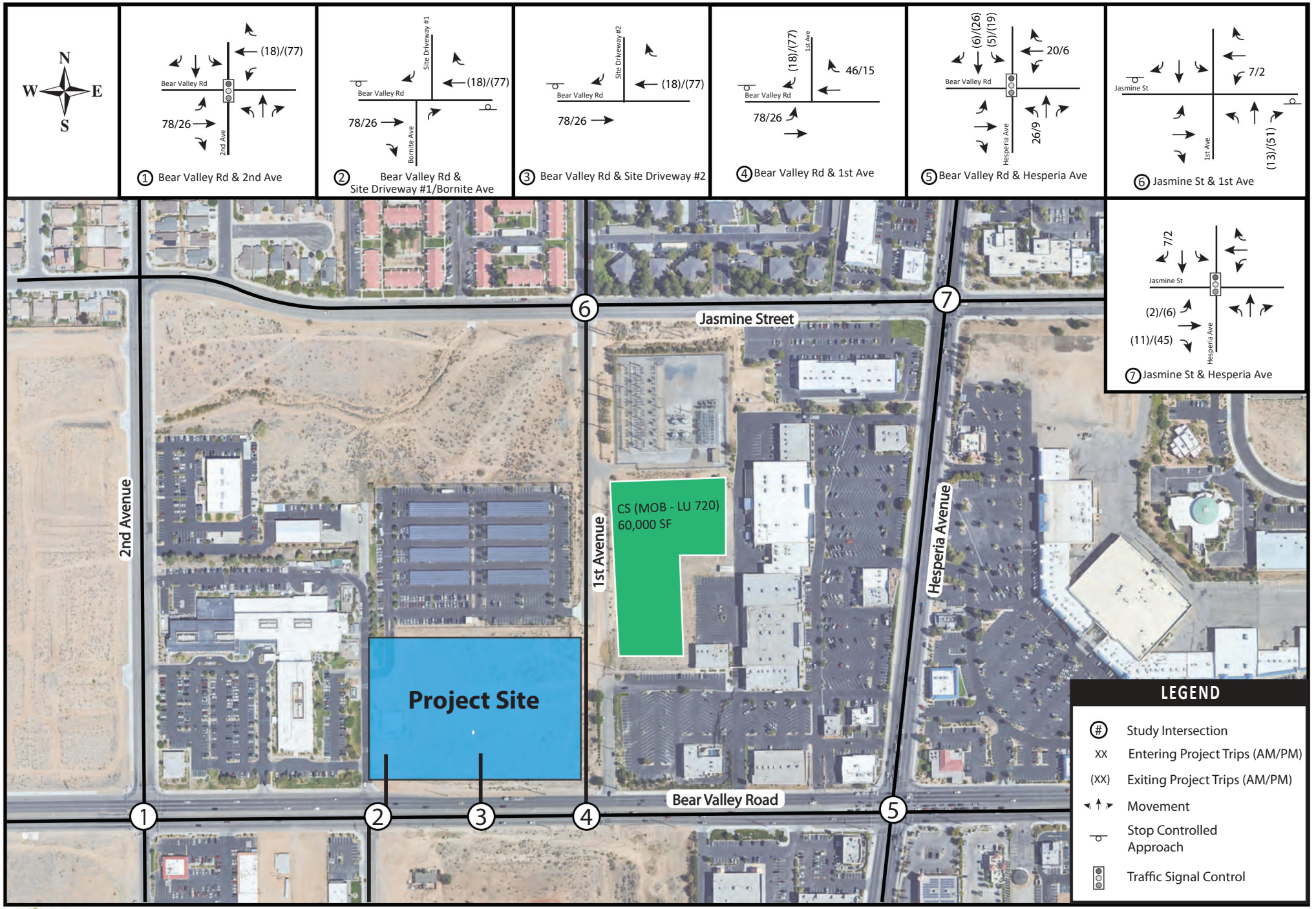


Figure 5-7
CS Cumulative Project Trip Assignment

Desert Valley Hospital Emergency Department Expansion

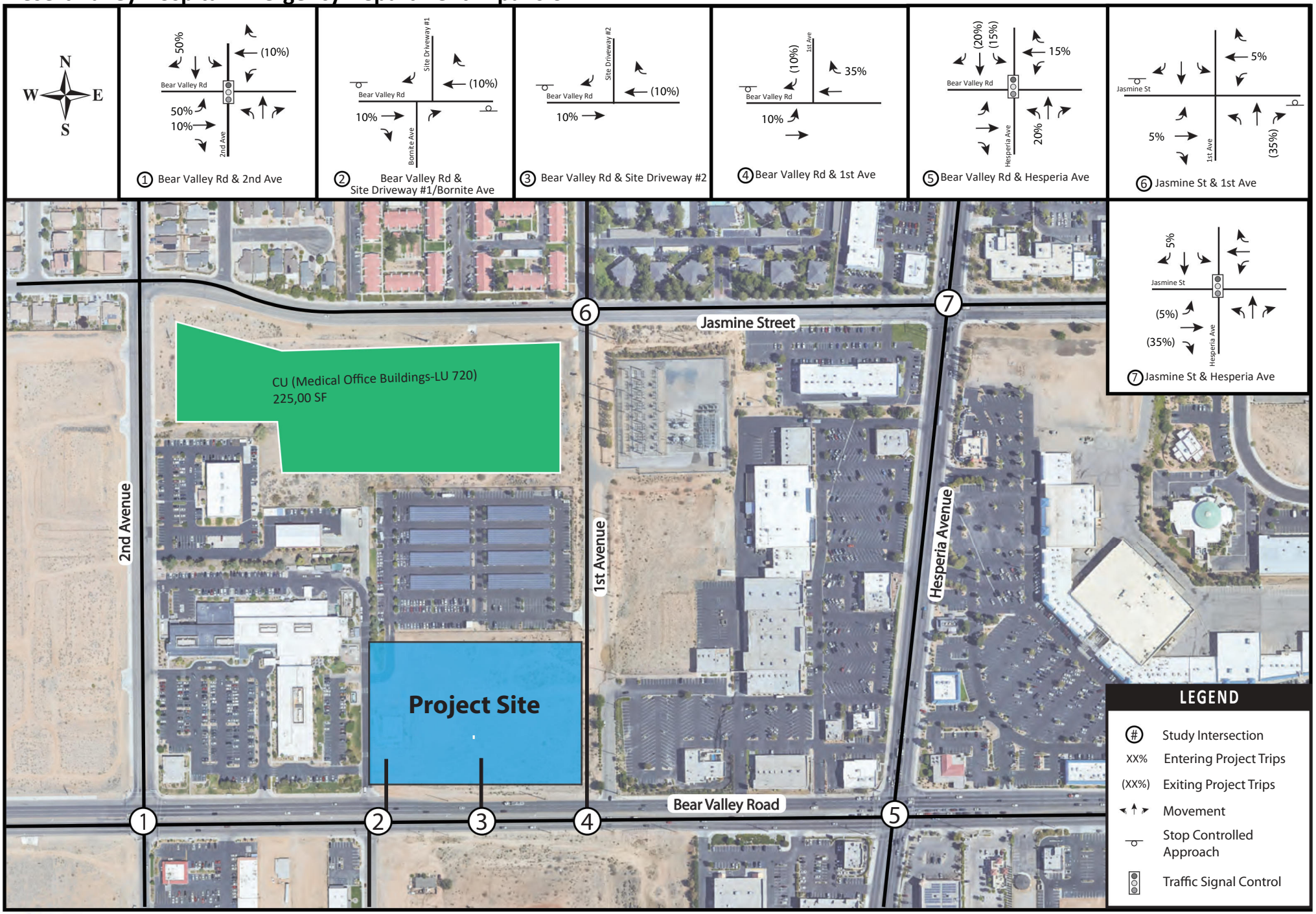


Figure 5-8
CU Cumulative Project Trip Distribution

Desert Valley Hospital Emergency Department Expansion

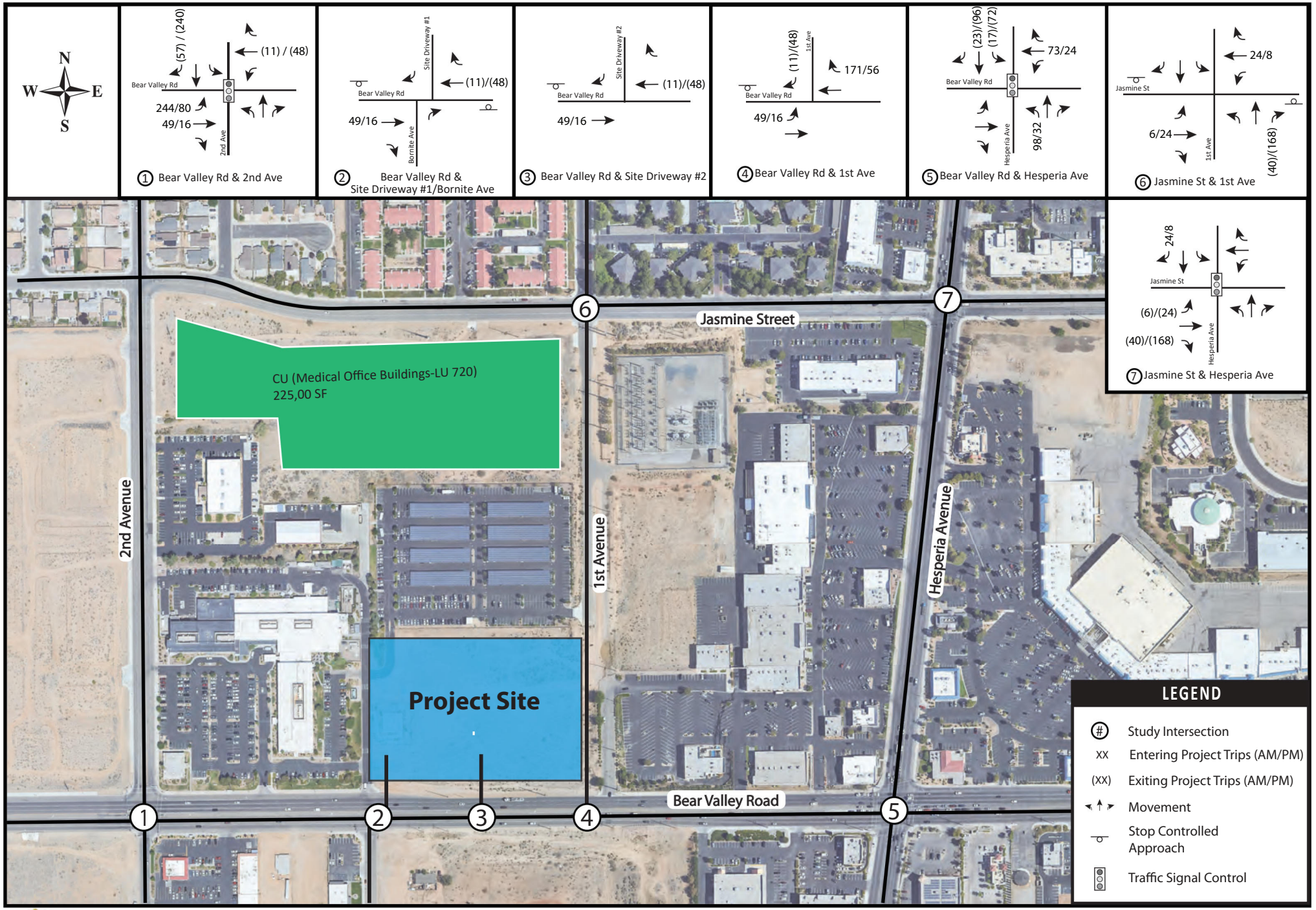


Figure 5-9
CU Cumulative Project Trip Assignment

Desert Valley Hospital Emergency Department Expansion

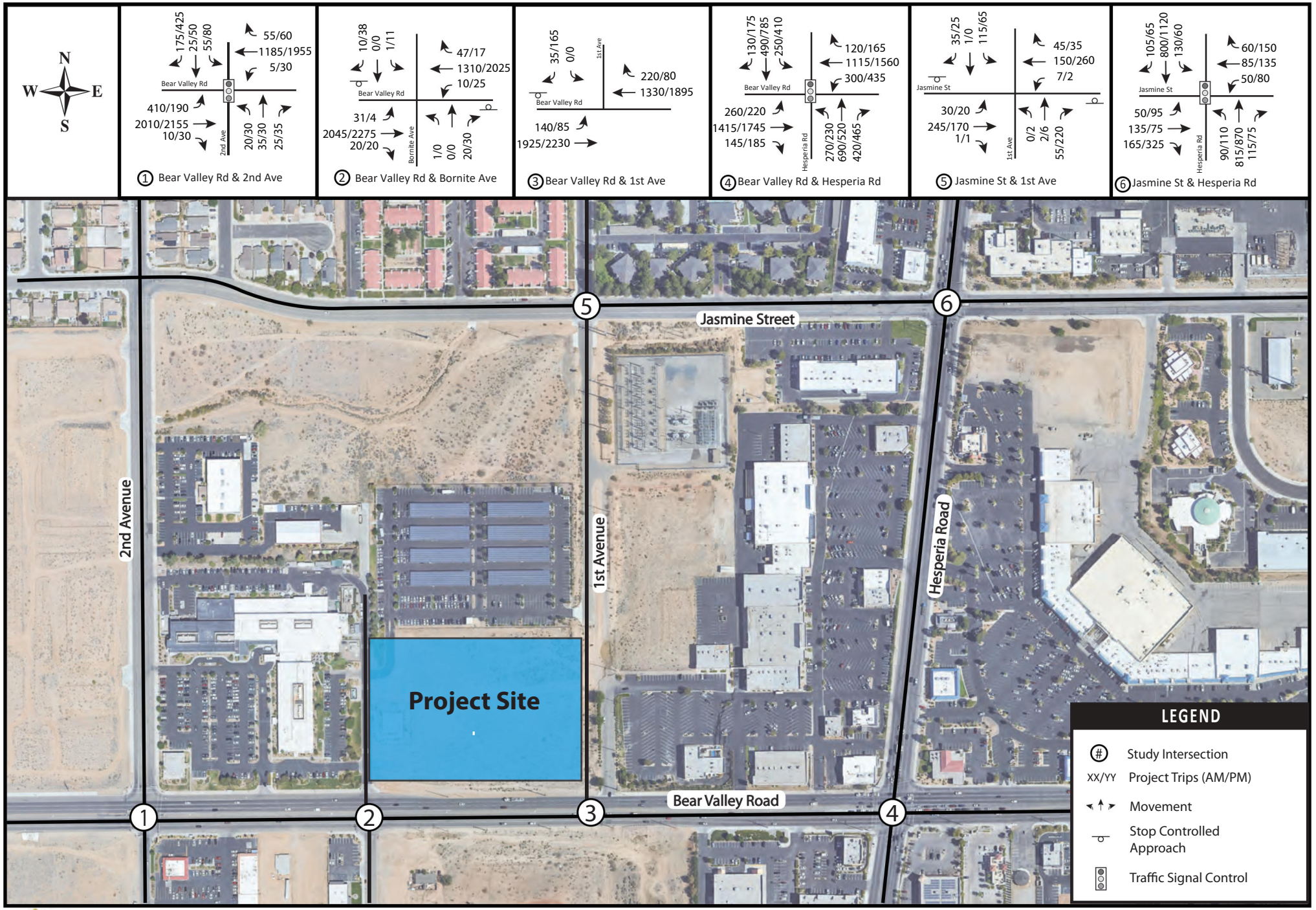


Figure 5-10
2037 Horizon Year Without Project

Desert Valley Hospital Emergency Department Expansion

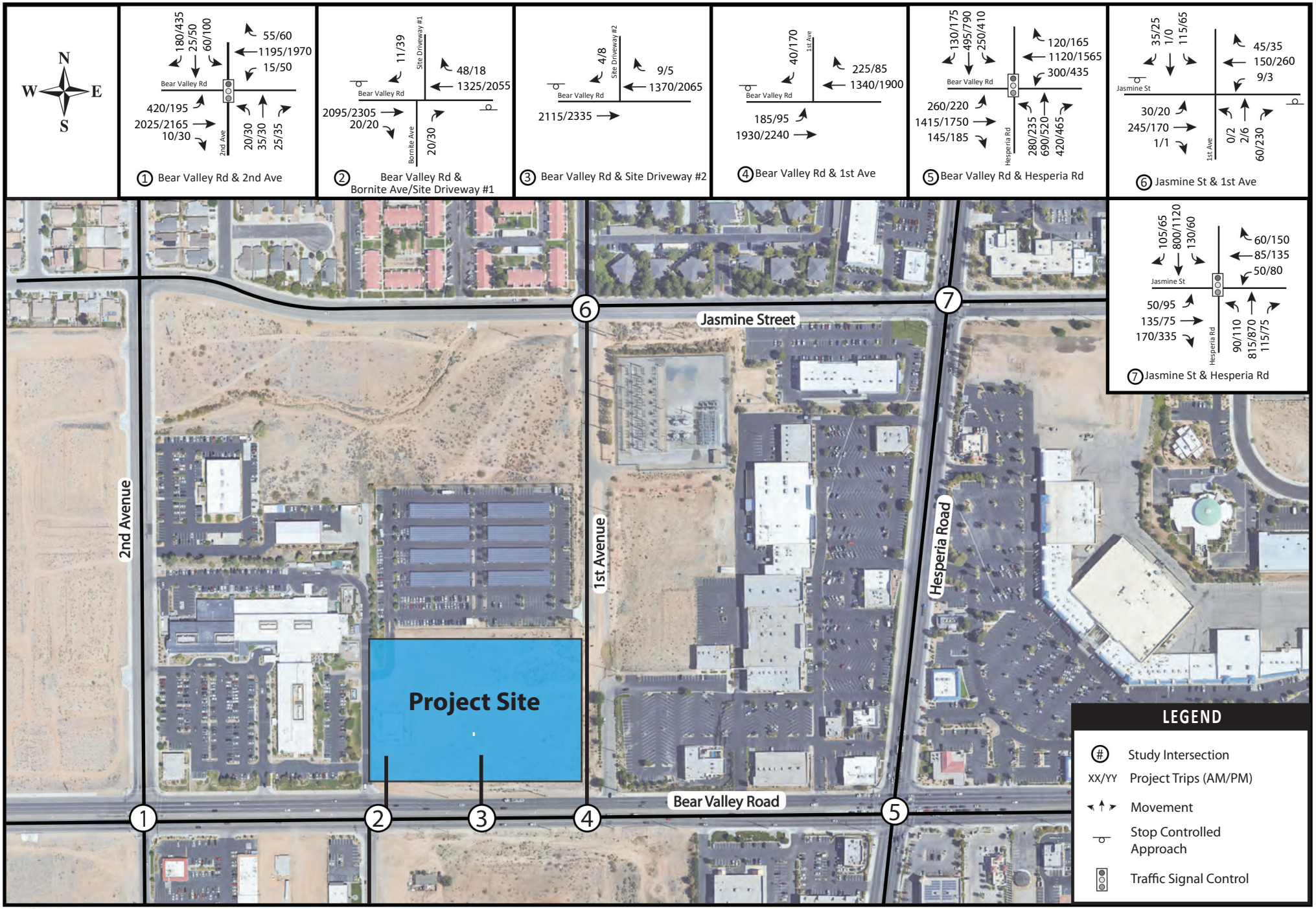


Figure 5-11
2037 Horizon Year With Project

6 LEVEL OF SERVICE METHODOLOGY

The transportation study was prepared in compliance with the *City of Victorville General Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service and Improvement Needs (January 20, 2005)* and *Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County (June 2016)*. The following section summarizes the analysis methodology used to evaluate intersection operations.

6.1 Intersection Level of Service Analysis

Signalized and unsignalized study intersections were evaluated using the Highway Capacity Manual (HCM) 6th Edition methodology. The study intersections were modeled in Synchro 11 software, which utilizes HCM methodology to calculate delay and corresponding levels of service (LOS). Existing signal timing sheets were obtained from the city, for use in the analysis. Volume, capacity and signal timing parameters as described in the City's Guidelines were input into the Synchro model. The analysis was conducted for the AM and PM peak hours of a typical weekday. The HCM LOS thresholds for signalized and unsignalized intersections are provided in **Table 6-1.** The delay for signalized intersections is reported as the average control delay for the intersection, while the delay for side street stop-controlled intersections is reported as the control delay for the worst movement.

Table 6-1: HCM Level of Service Threshold

LOS	Control Delay (sec/veh)		Description
	Signalized Intersection	Unsignalized Intersection	
A	≤10	≤10	Operations with very low delay and most vehicles do not stop.
B	>10 and ≤20	>10 and ≤15	Operations with good progression but with some restricted movements.
C	>20 and ≤35	>15 and ≤25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35 and ≤55	>25 and ≤35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55 and <80	>35 and <50	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80	>50	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Source: *Highway Capacity Manual (HCM).*

6.2 Level of Service Performance Standards and Effects of Project Traffic

The following are the LOS standards identified in the City of Victorville General Plan Circulation Element:

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

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

The various levels of intersection operating conditions as defined in the City's General Plan are provided below:

- Deficient Intersections: Deficient intersections are those with an Intersection Capacity Utilization (ICU) value greater than 0.95 or Highway Capacity Manual (HCM) delay LOS worse than D (i.e., E or F). Intersections under this category would require mitigations to improve the LOS to satisfactory levels, that is to an ICU less than 0.95 or an HCM delay LOS of D or better. Specific critical movements that are LOS F require mitigation to satisfactory levels. For existing deficiencies, a determination can be made to mitigate for future impacts to avoid degrading the LOS of the intersection.

- Non-Deficient Intersections: Near-deficient intersections are those with an ICU value greater than 0.90 but less than 0.95 and HCM delay LOS equal to or better than D. Intersections under this category are technically operating satisfactorily, under the given conditions, but could become deficient if traffic volumes increase slightly or if the growth in traffic volumes or land use projections become higher than those assumed in the model.

- Satisfactory Intersections: All intersections that operate at ICU less than 0.90 and HCM delay LOS D or better are considered to be operating satisfactorily.

7 INTERSECTION LEVEL OF SERVICE ANALYSIS

This section presents the LOS analysis results for the study area intersections under all scenarios.

7.1 Existing Intersection LOS Analysis

Intersection operations under existing conditions are presented in **Table 7-1.** The HCM analysis worksheets are provided in **Appendix C.**

Table 7-1: Existing Intersection LOS Analysis Summary

Study Intersection		Control	AM Peak		PM Peak	
			Delay	LOS	Delay	LOS
1	Bear Valley Rd & Second Ave	Signal	34.6	C	51.5	D
2	Bear Valley Rd & Bornite Ave / Project Driveway #1 (Existing)	SSS	25.6	D	**67.1**	**F**[1]
3	Bear Valley Rd & Project Driveway #2 (Proposed)	SSS	*N/A under Existing Conditions*			
4	Bear Valley Rd & First Ave	SSS	15.7	C	26.2	D
5	Bear Valley Rd & Hesperia Rd	Signal	**58.4**	**E**	46.4	D
6	Frist Ave & Jasmine St	SSS	12	B	11.6	B
7	Hesperia Rd & Jasmine St	Signal	28.7	C	27.5	C

SSS - Side Street Stop
*Deficient LOS indicated in **Bold***
Delay in seconds
[1] Indicates delay and LOS for worst movement (left turns exiting project driveway)

As shown in Table 7-1, the following intersections operate at a deficient LOS E or F under existing condition:

- 2 – Bear Valley Rd & Bornite Ave / Project Driveway #1
- 5 – Bear Valley Road & Hesperia Road

7.2 Opening Year 2027 Without and With Project Intersection LOS Analysis

Intersection operations under Opening Year 2025 without and with project conditions are presented in **Table 7-2.** The HCM analysis worksheets are provided in **Appendix D.**

Table 7-2: Opening Year 2027 Without and With Project Intersection LOS Analysis Summary

	Study Intersection	Control	Peak Hour	Without Project		With Project		Change in Delay	Impact?
				Delay	LOS	Delay	LOS	Total	(Yes/No)
1	Bear Valley Rd & Second Ave	Signal	AM	37.9	D	39	D	1.1	No
			PM	**61.2**	**E**	**62.6**	**E**	1.4	No
2	Bear Valley Rd & Bornite Ave / Project Driveway #1 (Existing)	SSS	AM	28.5	D	21.3	C	-7.2	No
			PM	**93.3**	**F[1]**	24	C	-69.3	No
3	Bear Valley Rd & Project Driveway #2 (Proposed)	SSS	AM	*N/A Under OY 2027 W/O Project Conditions*		14.5	B	N/A	N/A
			PM			19.7	C	N/A	N/A
4	Bear Valley Rd & First Ave	SSS	AM	16.5	C	19.1	C	2.6	No
			PM	29.3	D	31.5	D	2.2	No
5	Bear Valley Rd & Hesperia Rd	Signal	AM	**59.9**	**E**	**57.4**	**E**	-2.5	No
			PM	52.6	D	52.8	D	0.2	No
6	First Ave & Jasmine St	SSS	AM	12.3	B	12.4	B	0.1	No
			PM	11.9	B	12	B	0.1	No
7	Hesperia Rd & Jasmine St	Signal	AM	29.5	C	29.5	C	0	No
			PM	28.3	C	28.5	C	0.2	No

SSS - Side Street Stop
*Deficient LOS indicated in **Bold***
Delay in seconds
[1] Indicates delay and LOS for worst movement (left turns exiting project driveway)

As shown in Table 7-2, there are no significant impacts anticipated on the LOS at the intersections due to project related trips under Opening Year conditions. The following intersections operate at a deficient LOS of E or F, both without and with the project in the Opening Year:

- 1 – Bear Valley Road & Second Avenue
- 2 – Bear Valley Rd & Bornite Ave / Project Driveway #1
- 5 – Bear Valley Road & Hesperia Road

7.3 Horizon Year 2037 Without and With Project Intersection LOS Analysis

Intersection operations under Horizon Year 2035 without and with project conditions are presented in **Table 7-3.** The HCM analysis worksheets are provided in **Appendix E**.

Table 7-3: Horizon Year 2037 Without and With Project Intersection LOS Analysis Summary

	Study Intersection	Control	Peak Hour	Without Project		With Project		Change in Delay	Impact?
				Delay	LOS	Delay	LOS	Total	(Yes/No)
1	Bear Valley Rd & Second Ave	Signal	AM	**108.7**	**F**	**112.9**	**F**	4.2	**Yes**
			PM	**127.7**	**F**	**131.9**	**F**	4.2	**Yes**
2	Bear Valley Rd & Bornite Ave / Project Driveway #1 (Existing)	SSS	AM	**43.9**	**E[1]**	28.5	D	-15.4	No
			PM	**700.5**	**F[1]**	**36.1**	**E[2]**	-664.4	No
3	Bear Valley Rd & Project Driveway #2 (Proposed)	SSS	AM	*N/A Under HY 2037 W/O Project Conditions*		16.5	C	N/A	N/A
			PM			25.9	D	N/A	N/A
4	Bear Valley Rd & First Ave	SSS	AM	**67.4**	**F**	**127**	**F**	59.6	**Yes**
			PM	**104.3**	**F**	**126.5**	**F**	22.2	**Yes**
5	Bear Valley Rd & Hesperia Rd	Signal	AM	**71**	**E**	**71.7**	**E**	0.7	No
			PM	**70.3**	**E**	**71.1**	**E**	0.8	No
6	Frist Ave & Jasmine St	SSS	AM	14.1	B	14.3	B	0.2	No
			PM	15.3	C	15.5	C	0.2	No
7	Hesperia Rd & Jasmine St	Signal	AM	31.6	C	31.7	C	0.1	No
			PM	**61.3**	**E**	**64.6**	**E**	3.3	**Yes**

SSS - Side Street Stop
*Deficient LOS indicated in **Bold***
Delay in seconds
[1] Indicates delay and LOS for worst movement (left turns exiting project driveway)
[2] Indicates delay and LOS for worst movement (right turns exiting Bornite Avenue)

As shown in Table 7-3, the following intersections operate at a deficient LOS E or F with and without the project:

- 1 – Bear Valley Road & Second Avenue
- 2 – Bear Valley Rd & Bornite Ave / Project Driveway #1
- 4 – Bear Valley Road & First Avenue
- 5 – Bear Valley Road & Hesperia Road
- 7 – Hesperia Road and Jasmine Street

The following intersections are anticipated to experience an impact due to project related trips during the Horizon Year:

- 1 – Bear Valley Road & Second Avenue
- 4 – Bear Valley Road & First Avenue
- 7 – Hesperia Road & Jasmine Street

8 TRAFFIC SIGNAL WARRANT ANALYSIS

This section presents the results of the traffic signal warrant analysis for the intersection of Bear Valley Road & First Avenue. Peak hour warrant (Warrant 3) was conducted based on the California Manual on Uniform Traffic Control Devices (CA-MUTCD), 2014 Edition. The analysis was conducted for the Existing conditions, Opening Year 2027 and Horizon Year 2037 with project scenarios. Under the "with project" scenarios, the project improvements limit access and egress from First Avenue which does not properly illustrate the distribution of traffic if a traffic signal allowing full access to First Avenue were to be installed at the intersection. Therefore, for the Opening Year 2027 and Horizon Year 2037 with project scenarios, Project generated trips and background development trip volumes were re-distributed assuming full access was allowed at the intersection. **Table 8-1** summarizes the results of the signal warrant analysis.

Table 8-1: Peak Hour Signal Warrant Analsysis Results

Intersection	Existing Conditions		Opening Year 2027 with Project		Horizon Year 2037 with Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Bear Valley Road / First Avenue	No	No	No	No	Yes	Yes

Based on the analysis results, a traffic signal is warranted at the Bear Valley Road & First Avenue intersection under Horizon Year 2037 conditions. The redistributed volumes used for the signal warrant analysis and the traffic signal warrant analysis worksheets are provided in **Appendix F**.

9 On-Site Parking Analysis

The number of parking spaces required for the proposed Project was estimated based on "Section 16-3.21.030 – Required number of off-street parking and loading spaces" in the City of Victorville Municipal Code. The proposed project is an emergency department which is anticipated to have approximately 80,000 sq. ft of gross floor area and includes 59 beds. Based on the municipal code, 1 parking space is required per bed and an additional 1 parking space is required per 650 square feet, which results in a minimum of 183 parking spaces required. To meet this requirement, the project intends to utilize existing parking spaces from the main hospital site, supplemented by the construction of an additional 162 spaces dedicated for ED Expansion use. By combining the existing and new parking spaces, a surplus of parking will be provided compared to the number of parking spaces required for the entire hospital site. In total, 997 parking spaces will be available on-site, exceeding the minimum required spaces for the entire hospital by 207 spaces. **Table 9-1** below provides a summary of the parking requirements and the number of parking spaces provided on site.

Table 9-1: Parking Requirement Summary

Required Parking Space Calculations	Beds	Square Feet	Factor Per SF	Total Spaces Required	Accessible Required
Hospital	148	122,140	650; plus 1 space per bed	336	8
Existing Medical Office Building	0	50,000	200	250	25
DVCF	0	4,200	200	21	3
ED Expansion	**59**	**80,000**	**650; plus 1 space per bed**	**183**	**6**
			Total Required Spaces	**790**	**42**
Existing Parking Plus Project Parking Counts				**Standard Spaces Provided**	**Accessible Provided**
North Parking Lot				75	4
East Parking Lot - Staff				547	16
West Parking Lot				178	15
South Parking Lot – ED Expansion				**143**	**19**
Subtotal				**943**	**54**
			Total Parking Spaces Provided	**997**	

10 FINDINGS AND RECOMMENDATIONS

This section summarizes the findings and recommendations of the transportation study for the Desert Valley Hospital Emergency Department Expansion project located at 16850 Bear Valley Road in the City of Victorville, CA.

10.1 Intersection LOS Analysis Summary

Study area intersection operations for all analysis scenarios are summarized in **Table 10-1** below.

Table 10-1: Intersection LOS Analysis Summary

Study Intersection		Peak Hour	Existing Conditions	Opening Year 2027		Project Impact?	Horizon Year 2037		Project Impact?
				Without Project	With Project		Without Project	With Project	
1	Bear Valley Rd & Second Ave	AM	C	D	D	No	**F**	**F**	**Yes**
		PM	D	**E**	**E**	No	**F**	**F**	**Yes**
2	Bear Valley Rd & Bornite Ave / Project Driveway #1 (Existing)	AM	D	D	C	No	**E**[1]	D	No
		PM	**F**[1]	**F**[1]	C	No	**F**[1]	**E**[2]	No
3	Bear Valley Rd & Project Driveway #2 (Proposed)	AM	N/A	N/A	B	N/A	N/A	C	No
		PM			C	N/A		D	No
4	Bear Valley Rd & First Ave	AM	C	C	C	No	**F**	**F**	**Yes**
		PM	D	D	D	No	**F**	**E**	**Yes**
5	Bear Valley Rd & Hesperia Rd	AM	**E**	**E**	**E**	No	**E**	**E**	No
		PM	D	D	D	No	**E**	**E**	No
6	Frist Ave & Jasmine St	AM	B	B	B	No	B	B	No
		PM	B	B	B	No	C	C	No
7	Hesperia Rd & Jasmine St	AM	C	C	C	No	C	C	No
		PM	C	C	C	No	**E**	**E**	**Yes**

*Deficient LOS indicated in **Bold***
[1] Indicates delay and LOS for worst movement (left turns exiting project driveway)
[2] Indicates delay and LOS for worst movement (right turns exiting Bornite Avenue)

As shown in Table 10-1, the following intersections operate at a deficient LOS E or F with and without the project:

- 1 – Bear Valley Road & Second Avenue
- 2 – Bear Valley Rd & Bornite Ave / Project Driveway #1
- 4 – Bear Valley Road & First Avenue
- 5 – Bear Valley Road & Hesperia Road
- 7 – Hesperia Road and Jasmine Street

The Bear Valley Road & Bornite Avenue / Project Driveway #1 intersection operates at a deficient LOS E during the PM peak hour in the Horizon 2037 with Project Scenario. As indicated in the HCM analysis worksheets included in the Appendices, northbound right turns exiting Bornite Avenue represent the worst-case movement. Ingress and egress of project traffic at the Project Driveway #1 does not impact the flow of traffic on Bear Valley Road. In addition, the proposed project improvements include extending a median across the intersection, thereby prohibiting left-turn movements into and out of Bornite Avenue / Project Driveway #1. This measure enhances safety by minimizing potential conflicts and optimizing traffic flow to the best extent possible.

The intersection of Bear Valley Road & Hesperia Road also operates at a deficient LOS E during the Horizon Year 2037 with and without Project Scenarios. However, the intersection is anticipated to incur a minor increase in delay, and therefore, minimal impacts are expected due to project related trips.

The following intersections are anticipated to experience an impact due to project related trips during the Horizon Year and recommendations are provided in Section 10.3:

- 1 – Bear Valley Road & Second Avenue
- 4 – Bear Valley Road & First Avenue
- 7 – Hesperia Road & Jasmine Street

10.2 Traffic Signal Warrant Analysis

A traffic signal warrant analysis was conducted for the intersection of Bear Valley Road & First Avenue for the AM and PM peak hours under Existing conditions, Opening Year 2027 and Horizon Year 2037 with project scenarios, consistent with CA-MUTCD procedures. The results indicate a traffic signal is warranted under the Horizon Year 2037 conditions.

10.3 Recommended Off-Site Intersection Improvements

The following improvements are recommended for the Horizon Year 2037 with project conditions. A summary of the LOS results with the recommended off-site improvements are provided in **Table 10-2** below.

- **Bear Valley Road & Second Avenue** – Improve intersection to accommodate dual left-turn lanes for the eastbound Bear Valley Road approach and make appropriate adjustments to the signal timing.
- **Bear Valley Road & First Avenue –** Install a traffic signal at the intersection and allow full access to and from the intersection. Allowing full access at the intersection will facilitate the redistribution of traffic exiting the Project Site and cumulative developments in the immediate vicinity. This redistribution of traffic reduces traffic volume from the eastbound right turn movement at Hesperia Road & Jasmine Street, relieving deficient operations at this intersection.

Table 10-2: Intersection LOS Analysis with Improvements Summary

Study Intersection		Peak Hour	Horizon Year 2037 Conditions					
			Without Project		With Project		With Project with Improvements	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Bear Valley Road / Second Avenue	AM	**108.7**	**F**	**112.9**	**F**	**65.6**	**E**
		PM	**127.7**	**F**	**131.9**	**F**	**97.0**	**F**
4	Bear Valley Road / First Avenue	AM	**67.4**	**F**	**127**	**F**	9.2	A
		PM	**104.3**	**F**	**126.5**	**F**	26.7	C
7	Hesperia Road & Jasmine Street	AM	31.6	C	31.7	C	32.1	C
		PM	**61.3**	**E**	**64.6**	**E**	30.7	C

*Deficient LOS indicated in **Bold**.*
Delay in seconds.

As shown in Table 10-2, the recommended off-site improvements improve delay for "with project" conditions to be better than "without project" conditions. The HCM analysis worksheets are included in **Appendix G.**

10.4 Fair Share Calculations

Transportation improvements within the City of Victorville are financed through various means, including direct project mitigation, fair share contributions, or development impact fee programs. The project's financial contribution to these transportation improvement funding mechanisms, or as a fair share contribution towards facilities impacted cumulatively, should be deemed adequate to address the project's proportional responsibility for mitigating its traffic impacts. STC has calculated the project's fair share for Bear Valley Road & Second Avenue to be 3%, which is based on the PM peak hour project trips that are associated with this intersection, as shown in **Table 10-3**.

Table 10-3: Bear Valley Road & Second Avenue Fair Share Calculations

#	Intersection	Peak Hour	Existing Peak Hour Volume (A)	Horizon Year 2037 Volume with Project (B)	Project Volume (C)	Fair Share Percentage (C)/(B-A)
1	Bear Valley Road & Second Avenue	PM	3,538	5,150	48	3%

The fair share calculation formula for Bear Valley Road & First Avenue was based on direction from City transportation staff using the highest peak hour volume (AM) for the 2027 Opening Year With Project Volume and the 2037 Horizon Year With Project Volume. This equates to a 14.4% fair share contribution, however, the City agreed to a recommended fair share of 10%, as shown in **Table 10-4**.

Table 10-4: Bear Valley Road & First Avenue Fair Share Calculations

#	Intersection	Peak Hour	Opening Year 2027 Volume with Project (A)	Horizon Year 2037 Volume with Project (B)	Fair Share Percentage (A)/(B)	Recommended Fair Share
4	Bear Valley Road & First Avenue	AM	65	450	14.4%	10%

10.5 Parking Analysis Results

A parking analysis was performed to evaluate the number of parking spaces required for the proposed Project in accordance with the City of Victorville Municipal Code. A minimum of 183 parking spaces are necessary to adequately support the operations of the proposed Emergency Department expansion. As part of the Project, 162 parking spaces are proposed to be developed on-site, which falls short of the parking requirements by 21 spaces. However, the hospital currently has a surplus of 228 parking spaces based on the requirements for the entire site, and therefore, the 21 spaces will reduce the overall surplus of parking provided by the site to 207. In total, 997 parking spaces will be provided.

10.6 Conclusion

The projected increase in trips associated with the proposed project significantly impacts operations at three nearby intersections under the Horizon Year 2037 conditions. The proposed off-site improvements are anticipated to improve delay for “with project” conditions to be better than “without project” conditions at the impacted intersections. While the intersection of Bear Valley Road & Bornite Avenue / the Project site driveway continue to operate at deficient LOS after the addition of project trips, the proposed project improvements aim to enhance safety by minimizing potential conflicts and optimizing traffic flow to the best extent possible. In addition, the proposed site plan will satisfy parking needs for full operations and internal circulation lanes provide access through the site connecting all the four driveways.

Appendix A: Scoping Agreement

February 23, 2024

City of Victorville
Engineering Department
14343 Civic Drive
P.O. Box 5001
Victorville, CA 92393
Attn: Anwar Wagdy, City Traffic Engineer

Traffic Study Scoping Letter for Desert Valley Hospital Emergency Department Expansion (Project No. PSUB23-00039)

Desert Valley Hospital, located at 16850 Bear Valley Road in Victorville, CA, is proposing an 80,000 square foot expansion of the Emergency Department (ED) consisting of a new two-story building adjacent to the existing hospital with direct connections on both floors. The new building will include offices, medical/surgical patient rooms, treatment bays, waiting rooms, conference rooms, break rooms and other amenities. See **Attachment A** for project site plan and **Figure 1 and Figure 2** for project vicinity and location maps. Site access will be provided through two restricted-access (right-in, right-out) driveways along Bear Valley Road and one full-access driveway along 1st Avenue via Jasmine Street. Additionally, the development plans propose to extend 1st Avenue from the Hospital's employee parking lot to Bear Valley Road. The primary purpose of this extended connection is to provide emergency fire access to the site. Access to 1st Avenue via Bear Valley Road will not be restricted to the public but will be limited to a left-in, right-in, and right-out configuration. Additional unrestricted site access will be available via 2nd Avenue.

Figure 1. Project Vicinity Map

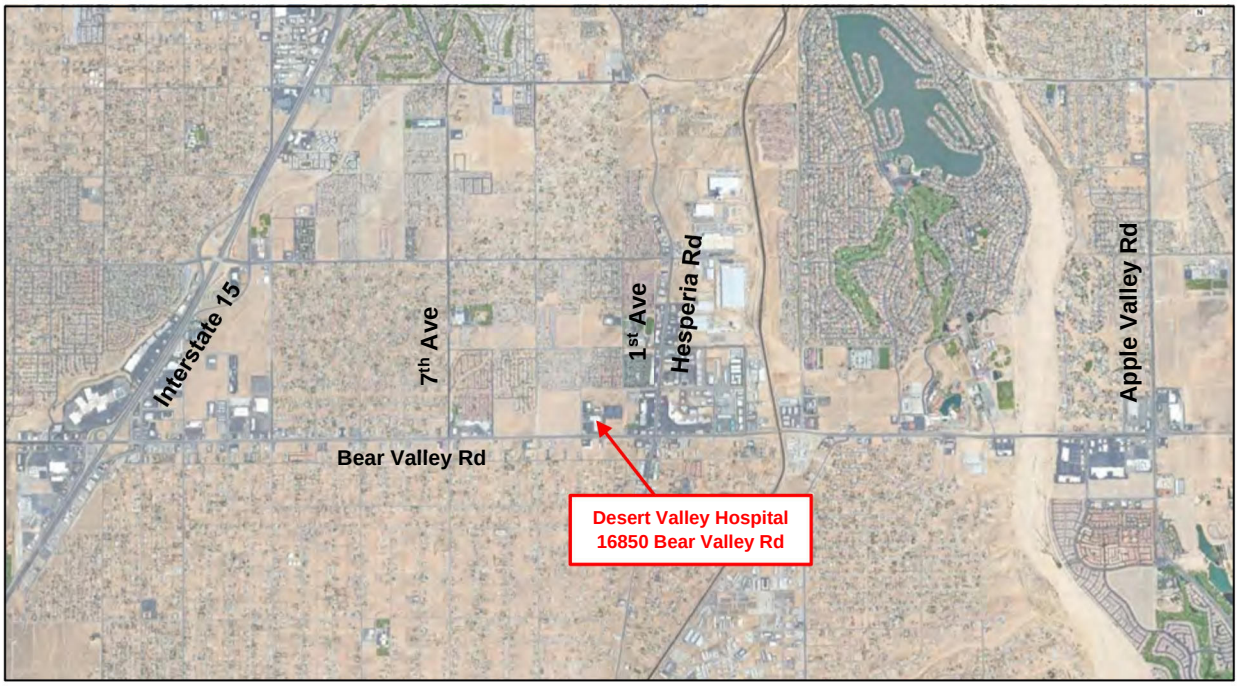
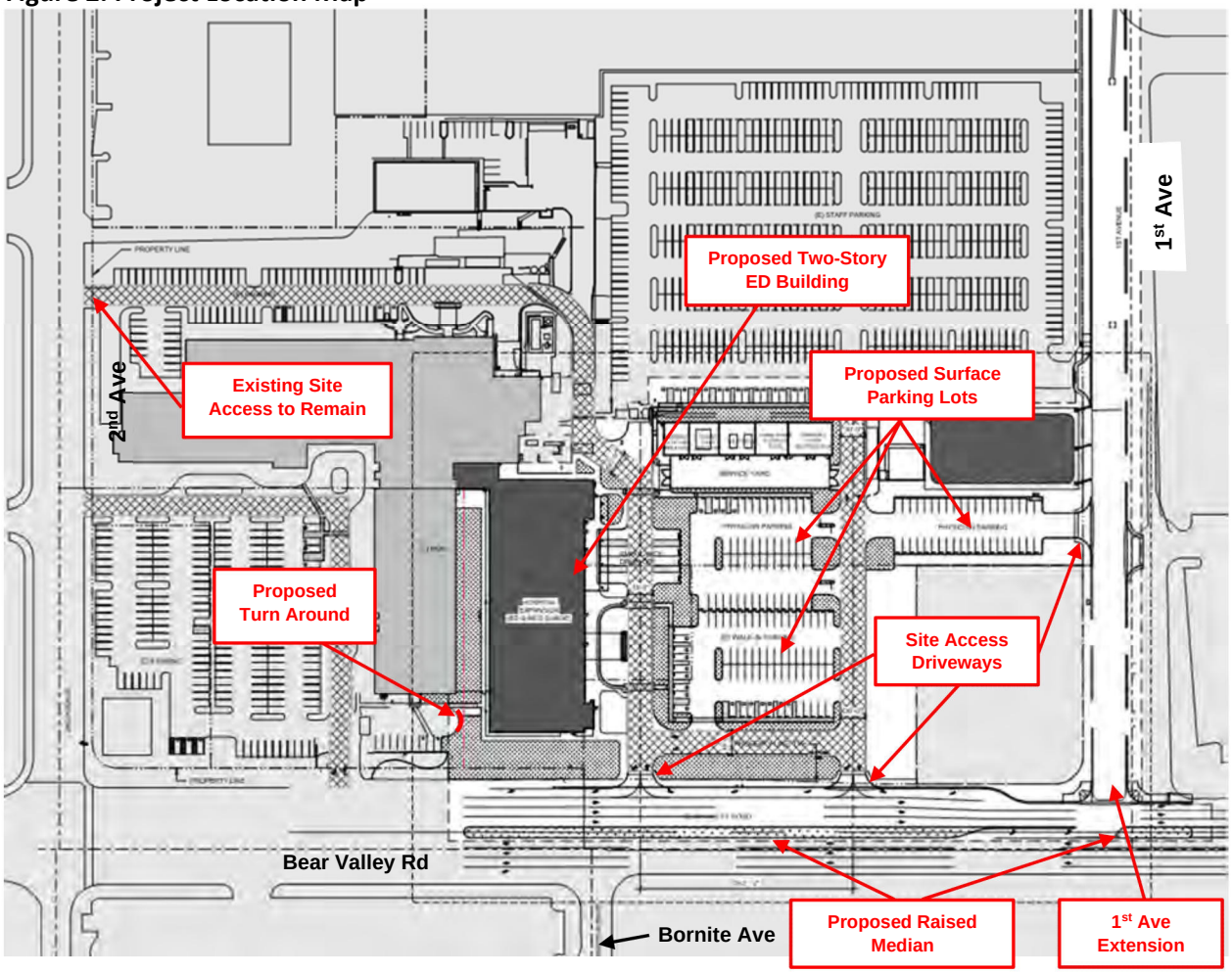


Figure 2. Project Location Map



This letter has been prepared to obtain feedback and ultimately gain consensus from City staff on the required scope and methodologies for conducting a traffic impact analysis (TIA) for the proposed project, consistent with the *City of Victorville General Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service (LOS) and Improvement Needs (January 20, 2005)* and *Vehicle Miles Traveled (VMT) Analysis Guidelines (June 23, 2020)*. The subsequent sections of this scoping agreement letter summarize how the TIA intends to address California Environmental Quality Act (CEQA) and Non-CEQA transportation assessments for the project. Once approved by the City, one of STC's professional traffic engineers licensed with the State of California will supervise production of and certify the TIA.

NON-CEQA TRANSPORTATION ASSESSMENT – LOS

The Non-CEQA Transportation Assessment applies applicable general plan consistency requirements for maintaining acceptable LOS on City streets. The City's *General Guidelines for Conducting Traffic Studies and Determination of Intersection LOS and Improvement Needs (January 20, 2005)* will be used to complete the Non-CEQA Transportation Assessment.

Project Trip Generation

The *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition* was used to perform the preliminary trip generation analysis for the project. Trip generation rates provided for ITE Land Use Code 610 – Hospital, were applied to the building square footage (gross floor area) of the proposed ED Expansion to calculate project trips. **Table 1** summarizes the results of the trip generation analysis. The project is estimated to generate 862 weekday daily vehicle trips, with 66 trips occurring during the AM peak hour of adjacent street traffic and 69 trips occurring during the PM peak hour. **Attachment B** provides the ITE Trip Generation Manual Land Use Description and Data Sheets.

Table 1. Project Trip Generation Analysis

Description	Quantity	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
ITE LU 610 - Hospital								
Trip Rates		10.77	67%	33%	0.82	35%	65%	0.86
1,000 s.f. GFA (gross floor area)	80.000							
Proposed Project Trips		**862**	**44**	**22**	**66**	**24**	**45**	**69**

Project Trip Distribution and Assignment

Figure 3, **Figure 4, and Figure 5** presents the study area intersections, project trip distribution, and project trip assignment, respectively, which considers local and regional access to the project site and project driveway access restrictions along Bear Valley Road. All project trips entering the site from the east and south are estimated to access the project site via the primary project driveways located along Bear Valley Road, while trips entering the site from the north are estimated to access the site via the secondary project driveway located along 1st Avenue. Project trips accessing the site from the west are estimated to be split between utilizing the 1st Avenue access driveway via Bear Valley Road and utilizing the main hospital visitor's lot access driveways along 2nd Avenue. All exiting project trips traveling to the north are estimated to egress the project site along 1st Avenue via Jasmine Street and Hesperia Road. Exiting project trips to the east and south are estimated to split between utilizing Bear Valley Road via 2nd Avenue and Hesperia Road via 1st Avenue / Jasmine Street. Project trips traveling west are assumed to egress by utilizing the primary project driveways along Bear Valley Road. Based on the project trip assignment, the following intersections have been identified for LOS analysis:

1. Bear Valley Road & 2nd Avenue (signalized)
2. Bear Valley Road & Bornite Avenue / realigned project driveway (side street Stop control, restricted movements)
3. Bear Valley Road & future easterly project driveway (side street Stop control, restricted movements)
4. Bear Valley Road & 1st Avenue (side street Stop control, restricted movements)
5. Bear Valley Road & Hesperia Road (signalized)
6. Jasmine Street & 1st Avenue (side street Stop control)
7. Jasmine Street & Hesperia Road (signalized)

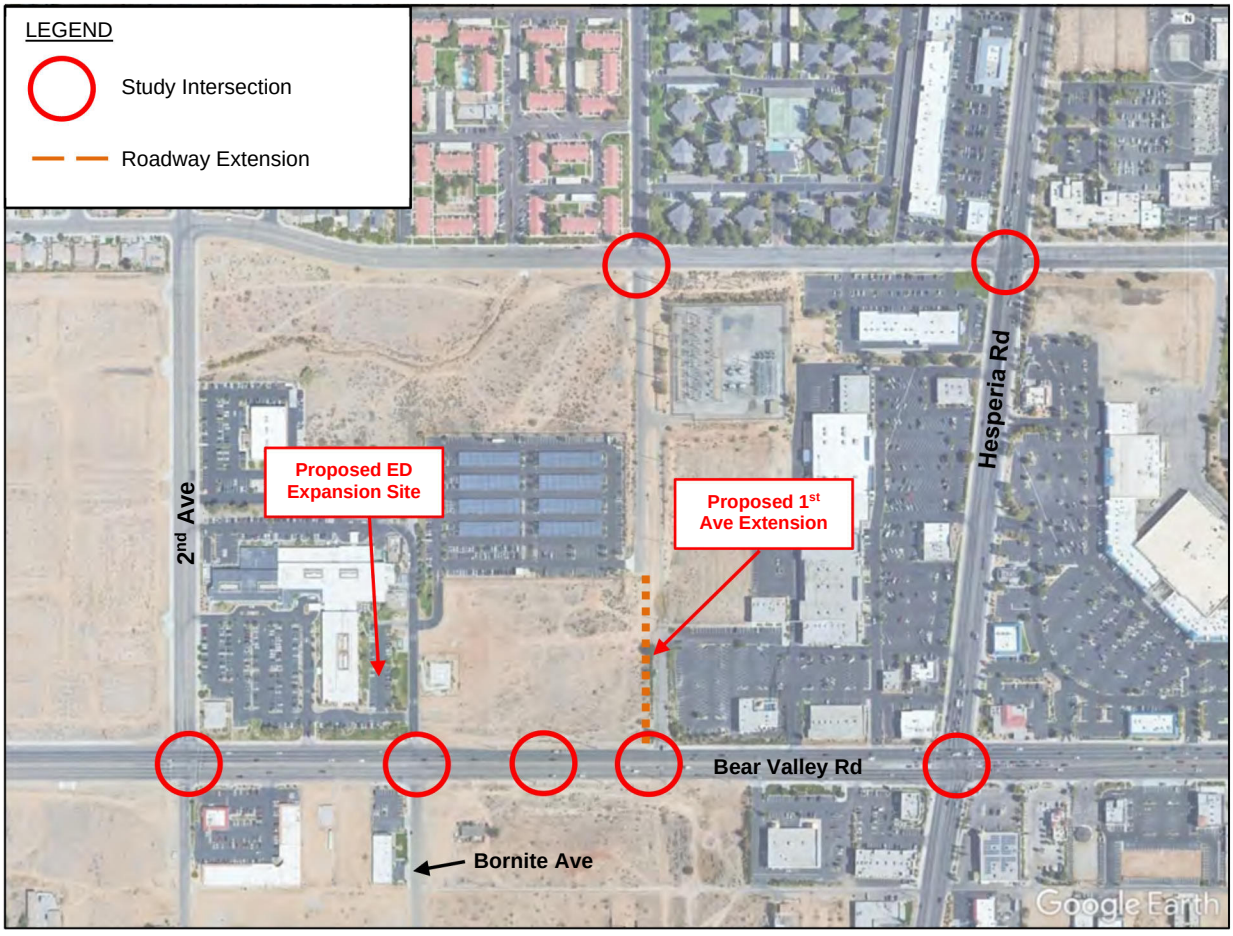
Traffic Counts

Vehicle, pedestrian and bicycle turning movement counts will be collected at study area intersections in 15-minute intervals between 6:00 AM and 9:00 AM, and between 3:00 PM and 7:00 PM. Average Daily Traffic (ADT) counts will be collected along Bear Valley Road in the vicinity of the project site. Data collection will occur on a typical weekday (Tuesday, Wednesday or Thursday) during a non-holiday week.

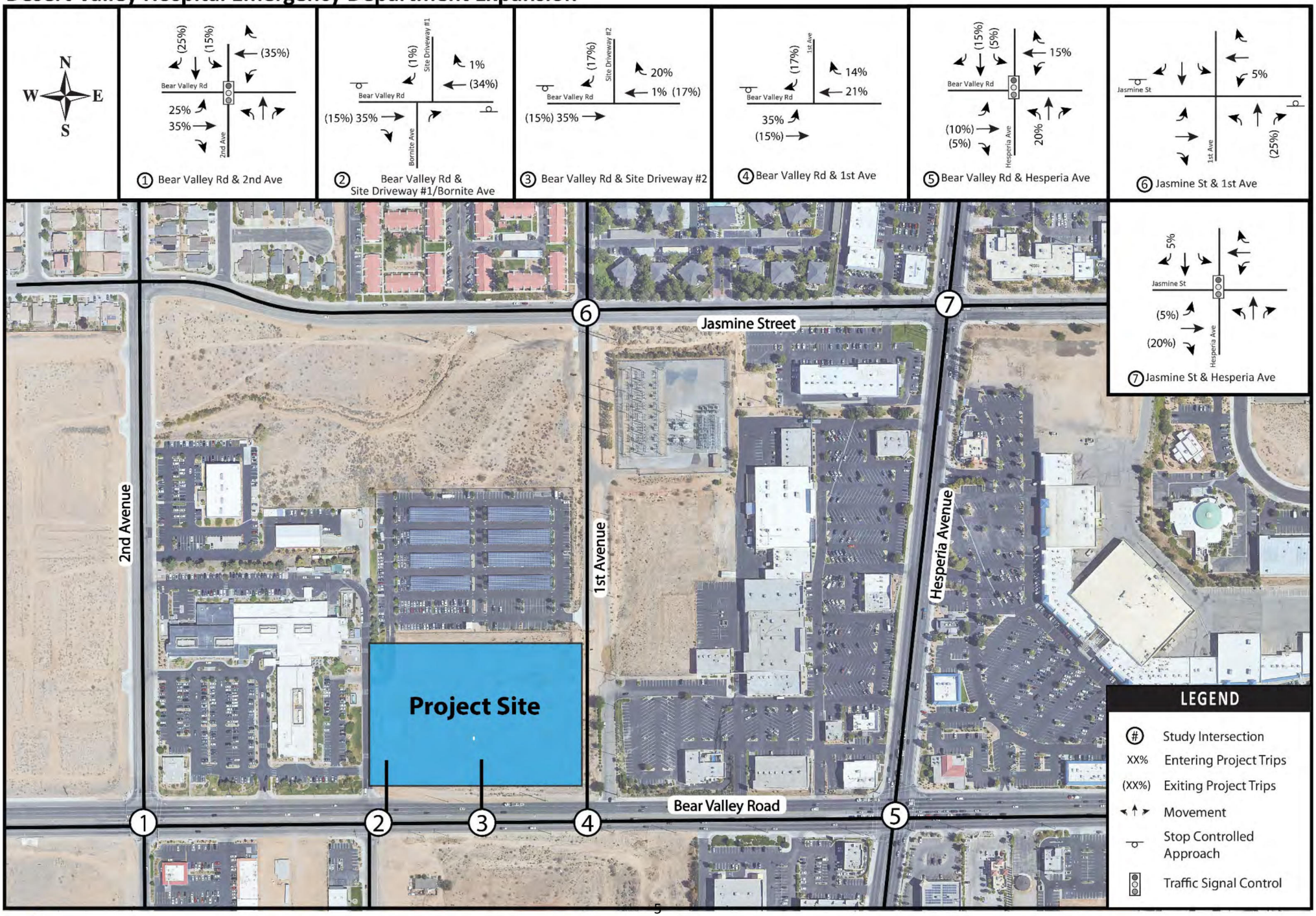
Analysis Methodology

Intersection operations, including LOS, volume to capacity ratios and queuing will be evaluated using Synchro 11 analysis software, which utilizes Highway Capacity Manual (HCM) 6th Edition methodology. The criteria and performance standards detailed in the City's Traffic Study Guidelines will be applied to the analysis. Existing signal timing sheets, if available, will be referenced. If the preliminary LOS analysis results indicate the need for a signal warrant analysis at the primary project driveway, the warrant analysis will be performed using the latest edition of the California MUTCD.

Figure 3. Study Area Locations



Desert Valley Hospital Emergency Department Expansion



TRAFFIC

Figure 4
Project Trip Distribution

Desert Valley Hospital Emergency Department Expansion

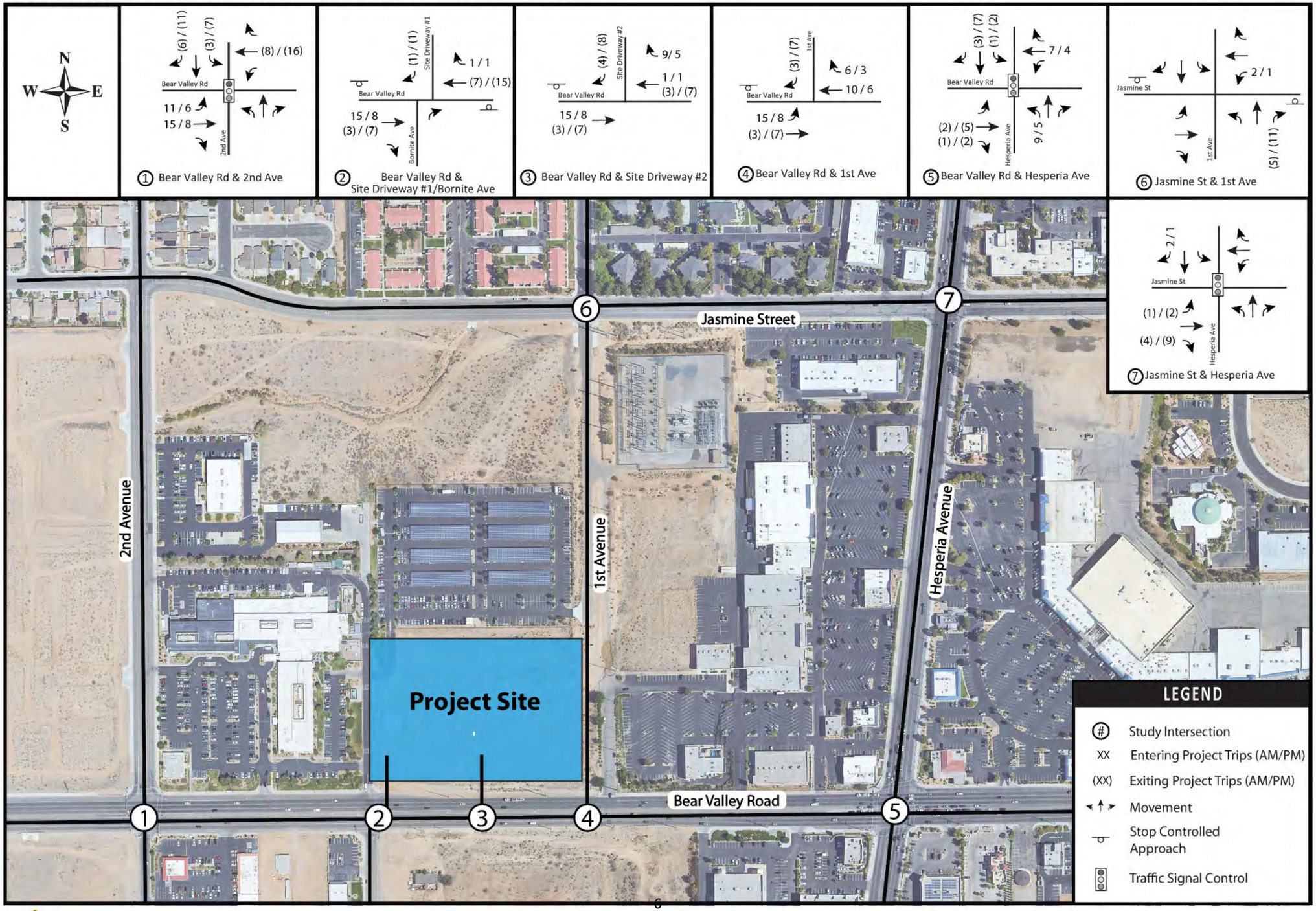


Figure 5
Project Trip Assignment

Analysis Scenarios

Consistent with the City's Traffic Study Guidelines, the following scenarios will be included in the analysis:

- Existing Conditions
- Opening Year 2027 Without Project (Existing volumes + 2% per year ambient growth + cumulative projects)
- Opening Year 2027 With Project
- 10-Year Horizon Without Project (Opening Year 2027 volumes + 2% per year ambient growth)
- 10-Year Horizon With Project

Determination of Project Impacts and Mitigation Measures

Should the addition of project trips contribute to deficient operations based on the performance standards identified in the City's Traffic Study Guidelines, potential mitigation measures will be discussed and analyzed. A traffic signal warrant analysis will be conducted for the intersection of 1st Avenue & Bear Valley Road to determine if a traffic signal is warranted under existing, opening year 2027 with project, and 10-year horizon with project scenarios. The TIA will also include fair share mitigation cost calculations, if needed, consistent with the City's Traffic Study Guidelines.

Project Access, Circulation and Parking Analysis

The TIA will evaluate site access, ingress, egress, internal circulation, parking, and accessibility and connectivity for pedestrians based on the latest site plan. A conceptual striping plan will be included for the intersection of Bear Valley Road & Bornite Avenue / realigned project driveway.

CEQA TRANSPORTATION ASSESSMENT – VMT

Senate Bill 743 (SB 743) was implemented throughout California on July 1, 2020. The legislation requires that transportation analysis conducted under the CEQA use VMT or other similar performance measures rather than delay and LOS, which were the traditional performance measures. In response to SB 743, the City of Victorville adopted VMT Guidelines on June 23, 2020, which provide criteria for VMT analysis and project screening.

VMT Screening Analysis

According to the City's VMT Analysis Guidelines, projects can "screen out" from needing to perform a VMT analysis if criteria for either of the following screening types are met:

1. Daily Vehicle Trip Threshold Screening
2. Land Use Type Screening

Daily Vehicle Trip Threshold Screening

The project is estimated to generate 862 weekday daily trips using the latest edition of the ITE Trip Generation Manual, which is less than the City's Daily Vehicle Trip threshold of 1,285 weekday daily trips. Therefore, the project should screen out from needing to perform a VMT Analysis.

Land Use Type Screening

The Hospital ED Expansion would be considered a Public Building, which is listed as a qualifying land use type for VMT screening according to the City's VMT Analysis Guidelines. Therefore, the project should screen out from needing to perform a VMT Analysis.

Feel free to contact me at david.dipierro@stctraffic.com or Myles Baidy at myles.baidy@stctraffic.com if you have any questions or would like to discuss our proposed scope of work in more detail.

Sincerely,

David DiPierro, T.E. #2234
Senior Principal Manager, STC Traffic

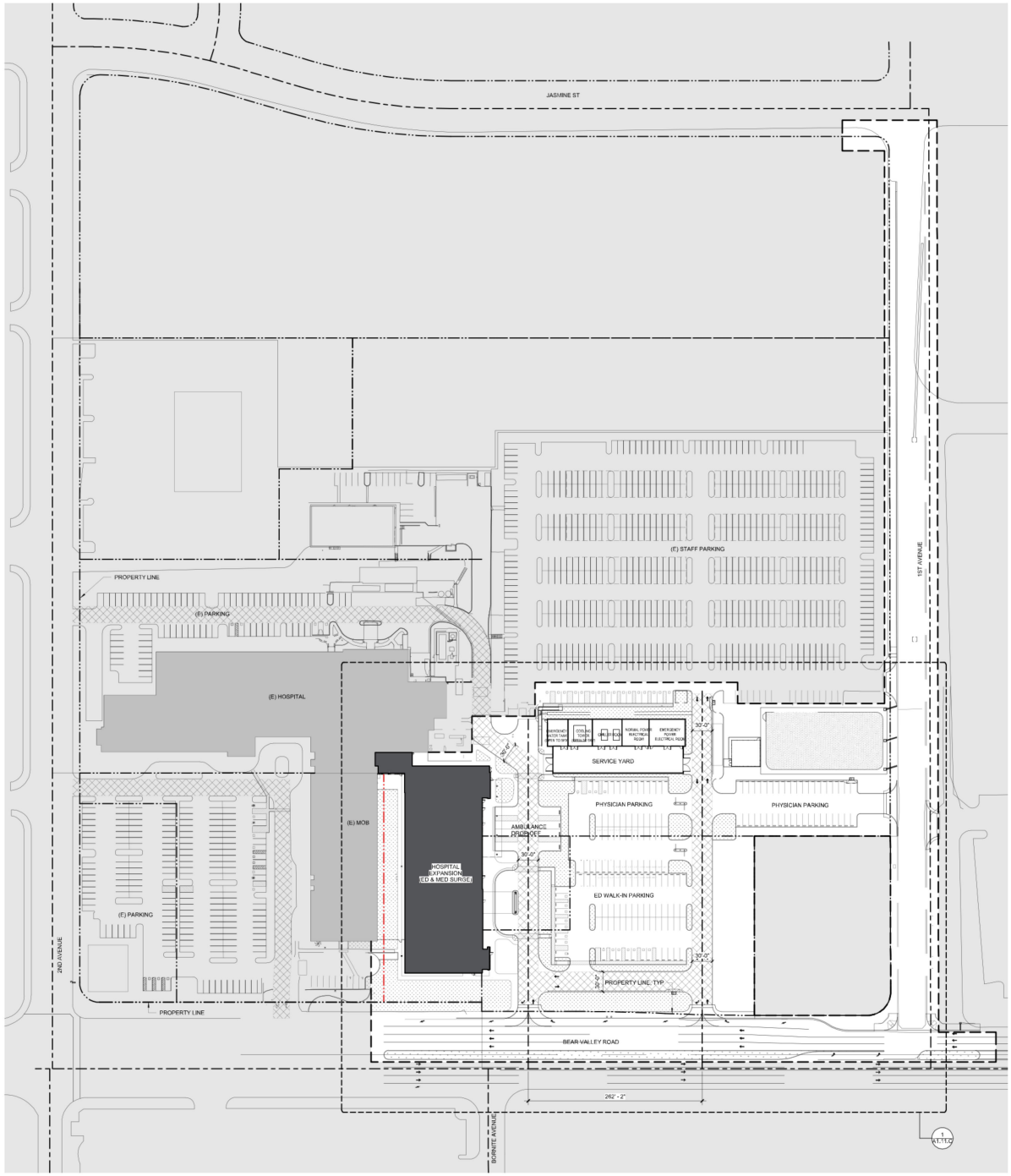
Attachments:

Attachment A – Project Site Plan

Attachment B – ITE Trip Generation Manual Land Use Description and Data Sheets

ATTACHMENT A

Project Site Plan



LEGEND

- CENTERLINE OF STREET
- PROPERTY LINE
- EASEMENT
- AREA OF WORK
- EXISTING BUILDING
- EXISTING SITE AREA - (NOT IN SCOPE)
- NEW BUILDING - UNDER HCAI JURISDICTION
- FIRE ACCESS ROUTE

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL ABOVE GRADE AND BELOW GRADE ITEMS REQUIRED FOR CONSTRUCTION OF NEW BUILDINGS.
2. ALL PAVING, VEGETATION, UTILITIES, ETC OUTSIDE SCOPE OF DEMOLITION BOUNDARY SHALL BE PROTECTED IN PLACE.
3. REFER TO CIVIL, LANDSCAPE, AND MEP DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

OVERALL CAMPUS SITE PLAN - PROPOSED CONDITIONS 1 (1/64" = 1'-0")

Prime Healthcare

HMC Architects

1309-003-000

3546 CONCOURS STREET
ONTARIO, CA 91764
909 989 9979 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE
	100% DD	01/31/2024

AGENCY APPROVAL:

The type of approval to be issued by
The Agency Having Jurisdiction
for this project is:
CITY OF VICTORVILLE PERMIT # XXXXXXXX

FACILITY:
DESERT VALLEY HOSPITAL

16850 BEAR VALLEY ROAD
VICTORVILLE, CA 92395

PROJECT:
PRIME DESERT VALLEY HOSPITAL - ED & MED SURGE BUILDING ADDITION STREET & B PERMIT MAKE-READY

SHEET NAME:
OVERALL CAMPUS SITE PLAN - PROPOSED CONDITIONS

DESIGN DEVELOPMENT

DATE: **01/31/2024**

CLIENT PROJ NO:

SHEET:

A1.01.C

PLEASE RECYCLE

THE HMC GROUP, ACIST &
EXPRESSLY RESERVES ITS COMMON LAW
COPYRIGHT AND OTHER PROPERTY RIGHTS IN
THESE PLANS. THESE PLANS ARE NOT TO BE
CHANGED OR COPIED IN ANY FORM OR
MANNER WHATSOEVER, NOR ARE THEY TO BE
ASSIGNED TO ANY THIRD PARTY, WITHOUT
FIRST OBTAINING THE EXPRESS WRITTEN
PERMISSION AND CONSENT OF THE HMC
GROUP.

Autodesk Docs://1309003000 Desert Valley Hospital ED Expansion/1309003000-A-DVH-ED-EXP.rvt
2/6/2024 10:27:28 AM

ATTACHMENT B

ITE Trip Generation Manual Land Use Description and Data Sheets

Land Use: 610
Hospital

Description

A hospital is any institution where medical or surgical care and overnight accommodations are provided to non-ambulatory and ambulatory patients. In this context, the term “hospital” does not refer to a medical clinic (a facility that provides diagnoses and outpatient care only) or a nursing home (a facility devoted to the care of persons unable to care for themselves), which are covered elsewhere in this report. Clinic (Land Use 630) and free-standing emergency room (Land Use 650) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The average numbers of person trips per vehicle trip at the four general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.6 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.6 during Weekday, AM Peak Hour of Generator
- 1.7 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.7 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Maryland, New Jersey, New York, Pennsylvania, Texas, and Washington.

Source Numbers

112, 186, 253, 262, 423, 429, 533, 573, 591, 601, 630, 719, 749, 878, 901, 904, 908, 909, 971, 1018

Hospital
(610)

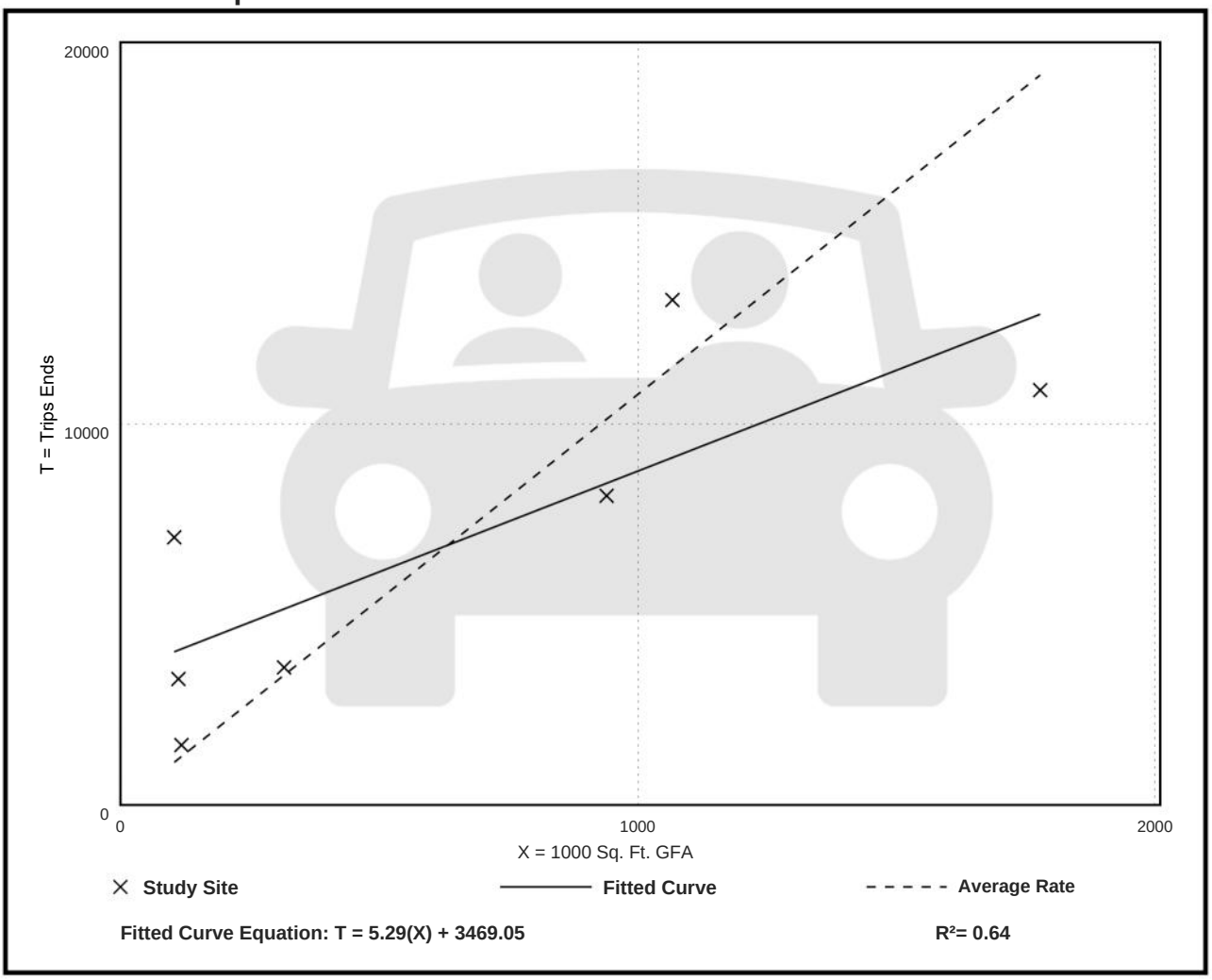
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 634
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.77	6.12 - 67.52	10.52

Data Plot and Equation



Fitted Curve Equation: T = 5.29(X) + 3469.05

R^2= 0.64

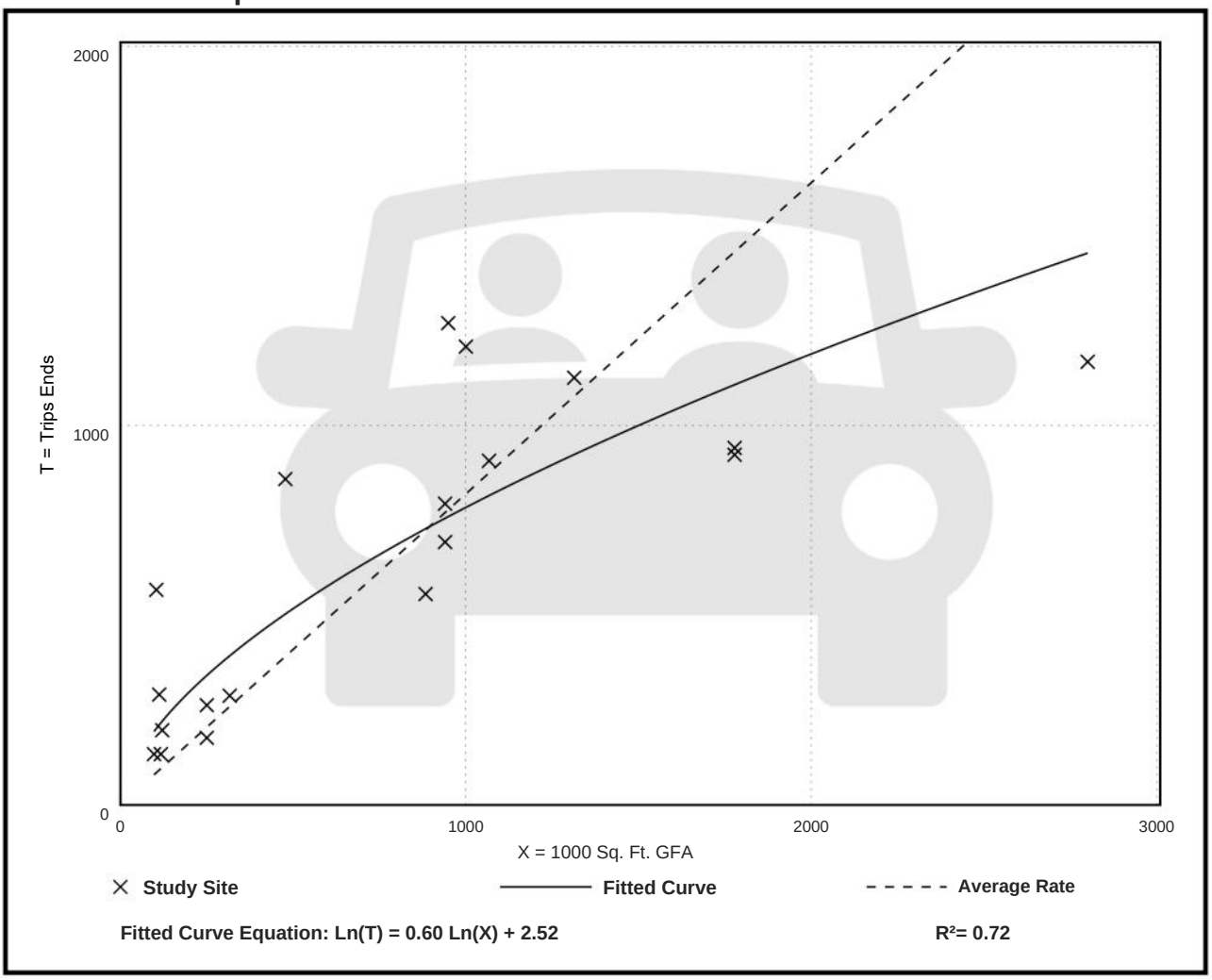
Hospital
(610)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 805
Directional Distribution: 67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.82	0.42 - 5.45	0.55

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.60 Ln(X) + 2.52

R^2= 0.72

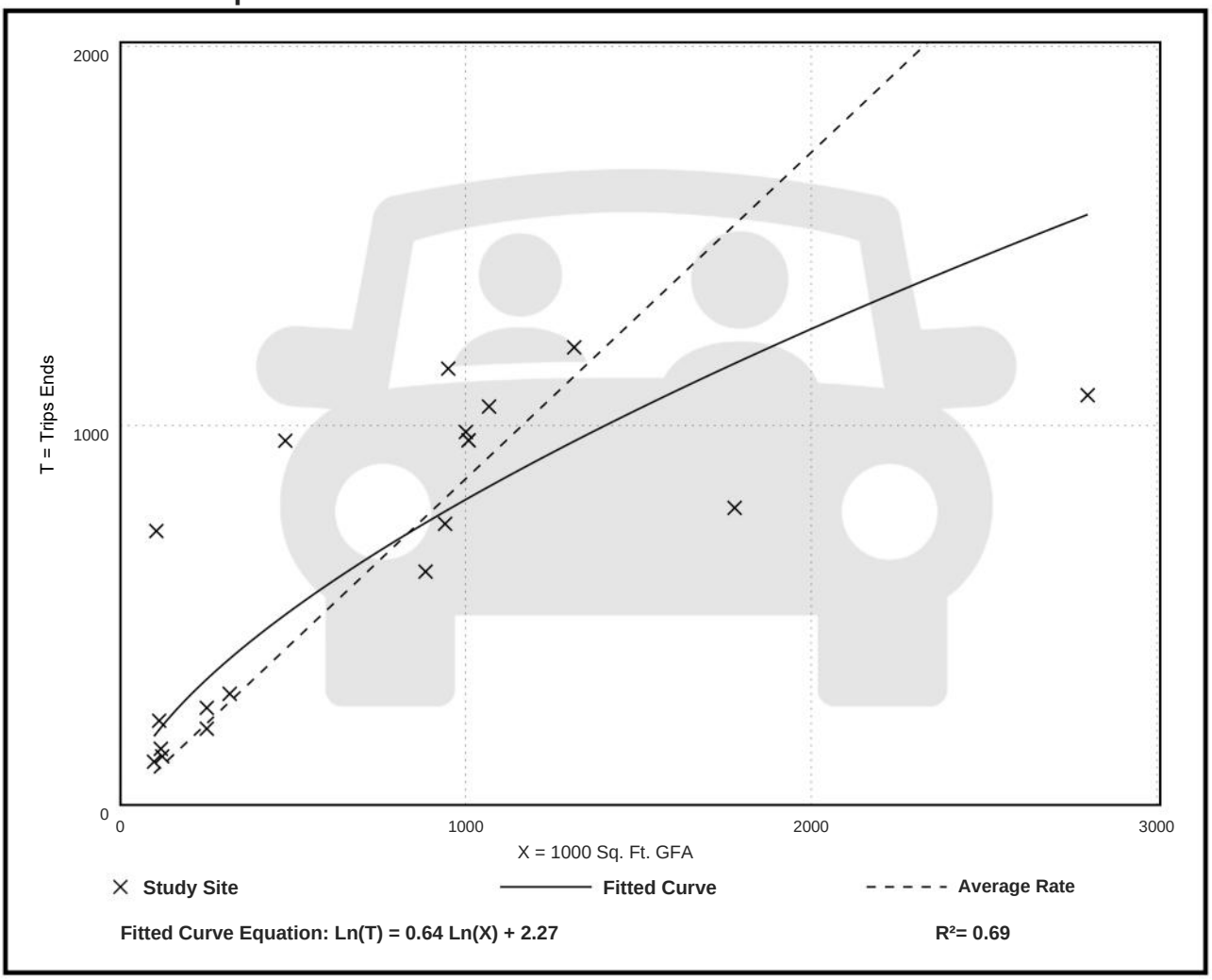
Hospital
(610)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 768
Directional Distribution: 35% entering, 65% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.86	0.39 - 6.94	0.65

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.64 Ln(X) + 2.27

R^2= 0.69

Appendix B: Traffic Count Data

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 2nd Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 01_VIC_2nd_BV AM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 1

Groups Printed- Total Volume

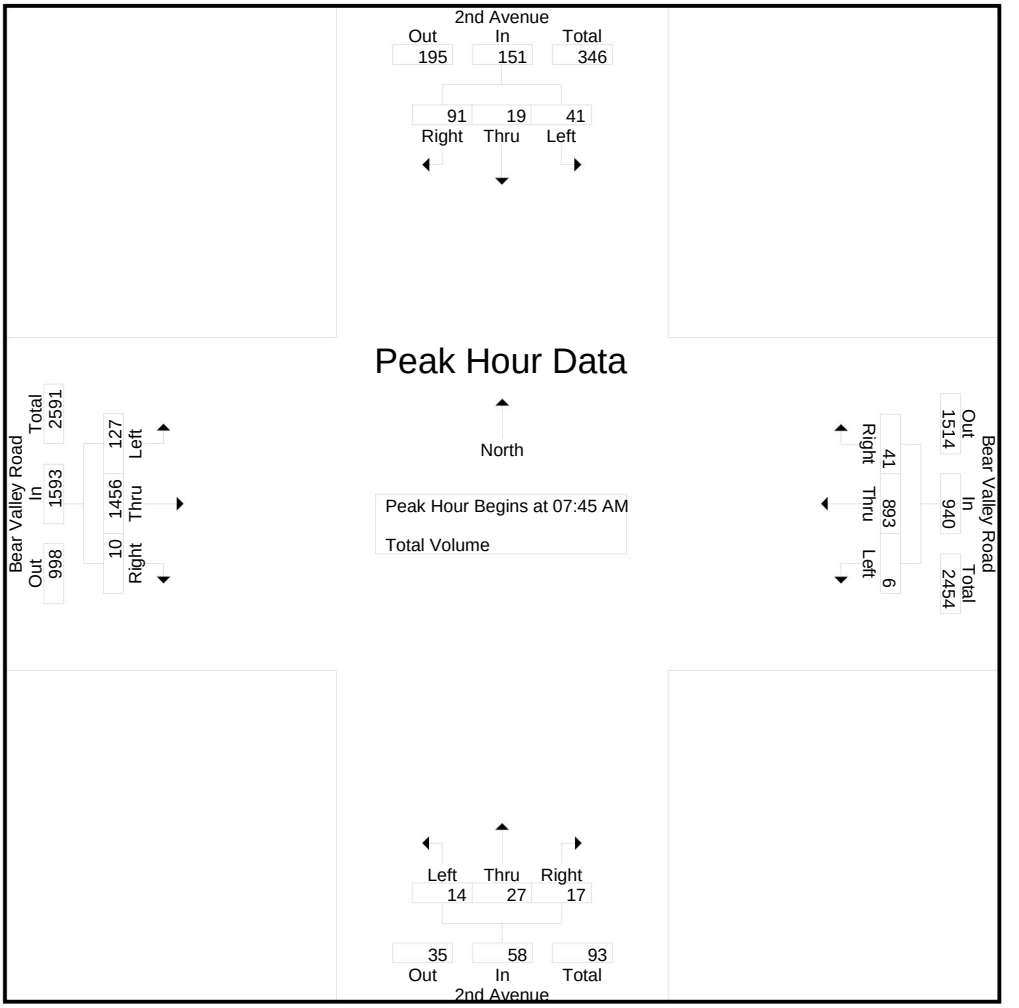
	2nd Avenue Southbound				Bear Valley Road Westbound				2nd Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	15	0	4	19	0	128	4	132	3	0	2	5	5	124	0	129	285
06:15 AM	4	0	5	9	0	126	2	128	1	0	1	2	11	147	1	159	298
06:30 AM	16	1	5	22	2	185	3	190	5	3	3	11	10	155	0	165	388
06:45 AM	4	4	13	21	0	218	8	226	3	2	3	8	17	228	1	246	501
Total	39	5	27	71	2	657	17	676	12	5	9	26	43	654	2	699	1472
07:00 AM	11	2	15	28	2	217	10	229	1	4	4	9	10	209	2	221	487
07:15 AM	10	4	16	30	3	155	11	169	5	5	3	13	25	289	4	318	530
07:30 AM	16	6	16	38	0	139	13	152	4	6	6	16	27	409	1	437	643
07:45 AM	9	3	34	46	3	162	6	171	4	7	5	16	47	474	4	525	758
Total	46	15	81	142	8	673	40	721	14	22	18	54	109	1381	11	1501	2418
08:00 AM	11	5	20	36	2	237	11	250	4	1	3	8	24	310	2	336	630
08:15 AM	8	6	15	29	1	238	11	250	1	3	6	10	29	338	1	368	657
08:30 AM	13	5	22	40	0	256	13	269	5	16	3	24	27	334	3	364	697
08:45 AM	11	7	12	30	0	269	6	275	5	4	2	11	28	364	5	397	713
Total	43	23	69	135	3	1000	41	1044	15	24	14	53	108	1346	11	1465	2697
Grand Total	128	43	177	348	13	2330	98	2441	41	51	41	133	260	3381	24	3665	6587
Apprch %	36.8	12.4	50.9		0.5	95.5	4		30.8	38.3	30.8		7.1	92.3	0.7		
Total %	1.9	0.7	2.7	5.3	0.2	35.4	1.5	37.1	0.6	0.8	0.6	2	3.9	51.3	0.4	55.6	

	2nd Avenue Southbound				Bear Valley Road Westbound				2nd Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	9	3	**34**	**46**	**3**	162	6	171	4	7	5	16	**47**	**474**	**4**	**525**	**758**
08:00 AM	11	5	20	36	2	237	11	250	4	1	3	8	24	310	2	336	630
08:15 AM	8	**6**	15	29	1	238	11	250	1	3	**6**	10	29	338	1	368	657
08:30 AM	**13**	5	22	40	0	**256**	**13**	**269**	**5**	**16**	3	**24**	27	334	3	364	697
Total Volume	41	19	91	151	6	893	41	940	14	27	17	58	127	1456	10	1593	2742
% App. Total	27.2	12.6	60.3		0.6	95	4.4		24.1	46.6	29.3		8	91.4	0.6		
PHF	.788	.792	.669	.821	.500	.872	.788	.874	.700	.422	.708	.604	.676	.768	.625	.759	.904

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 2nd Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 01_VIC_2nd_BV AM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				08:00 AM				07:45 AM				07:30 AM			
+0 mins.	9	3	**34**	**46**	**2**	237	11	250	4	7	5	16	27	409	1	437
+15 mins.	11	5	20	36	1	238	11	250	4	1	3	8	**47**	**474**	**4**	**525**
+30 mins.	8	**6**	15	29	0	256	**13**	269	1	3	**6**	10	24	310	2	336
+45 mins.	**13**	5	22	40	0	**269**	6	**275**	**5**	**16**	3	**24**	29	338	1	368
Total Volume	41	19	91	151	3	1000	41	1044	14	27	17	58	127	1531	8	1666
% App. Total	27.2	12.6	60.3		0.3	95.8	3.9		24.1	46.6	29.3		7.6	91.9	0.5	
PHF	.788	.792	.669	.821	.375	.929	.788	.949	.700	.422	.708	.604	.676	.807	.500	.793

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 2nd Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 01_VIC_2nd_BV PM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 1

Groups Printed- Total Volume

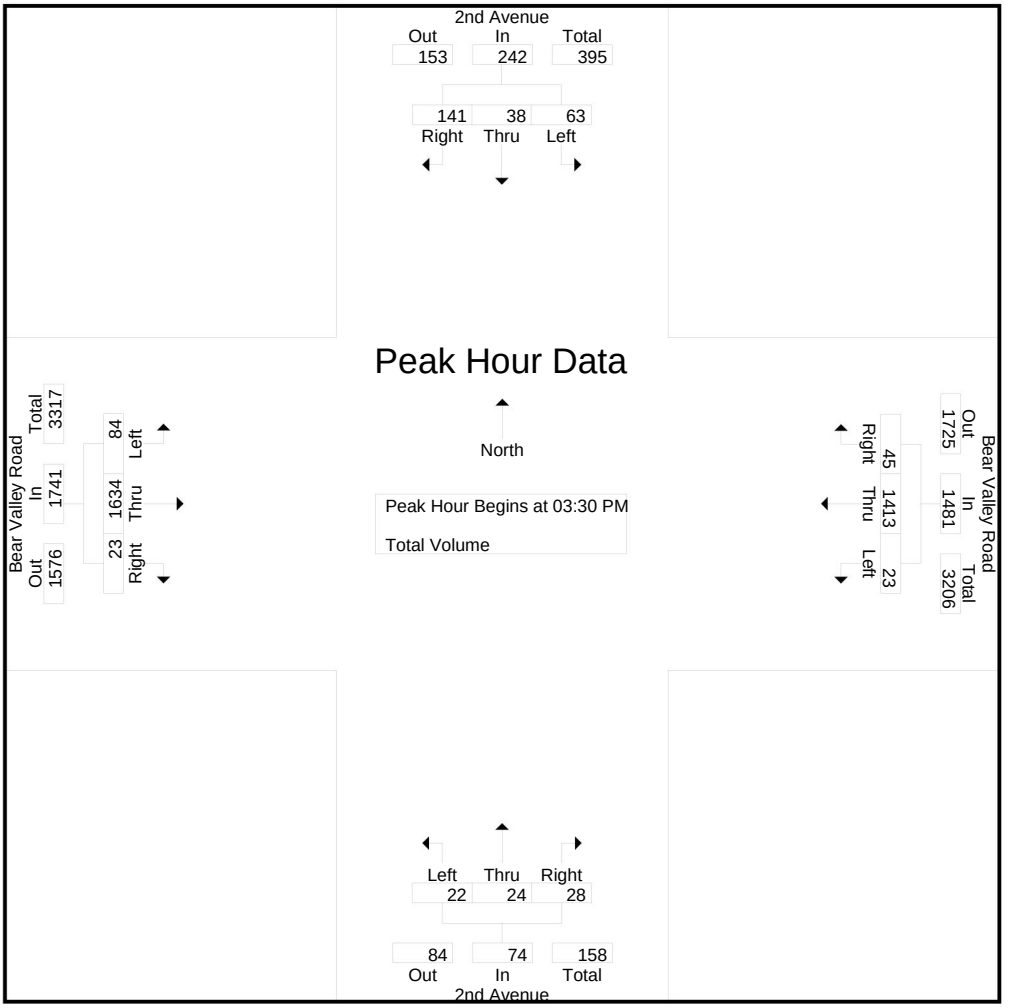
	2nd Avenue Southbound				Bear Valley Road Westbound				2nd Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	22	6	37	65	4	314	6	324	6	3	4	13	19	393	6	418	820
03:15 PM	3	18	30	51	2	305	11	318	9	8	4	21	22	373	6	401	791
03:30 PM	16	13	37	66	4	355	15	374	11	8	12	31	26	420	0	446	917
03:45 PM	16	7	27	50	7	357	11	375	4	6	3	13	13	404	8	425	863
Total	57	44	131	232	17	1331	43	1391	30	25	23	78	80	1590	20	1690	3391
04:00 PM	19	12	43	74	4	372	9	385	5	5	5	15	21	427	4	452	926
04:15 PM	12	6	34	52	8	329	10	347	2	5	8	15	24	383	11	418	832
04:30 PM	16	8	28	52	4	288	9	301	9	3	5	17	20	388	5	413	783
04:45 PM	13	7	24	44	2	310	8	320	3	4	7	14	31	359	4	394	772
Total	60	33	129	222	18	1299	36	1353	19	17	25	61	96	1557	24	1677	3313
05:00 PM	25	7	36	68	3	346	16	365	8	7	9	24	25	373	4	402	859
05:15 PM	14	9	22	45	3	320	5	328	4	0	6	10	21	403	5	429	812
05:30 PM	16	8	25	49	2	373	8	383	6	5	4	15	18	359	4	381	828
05:45 PM	14	8	18	40	3	270	6	279	4	1	4	9	18	394	2	414	742
Total	69	32	101	202	11	1309	35	1355	22	13	23	58	82	1529	15	1626	3241
06:00 PM	11	2	14	27	3	280	14	297	7	5	7	19	19	346	1	366	709
06:15 PM	13	5	13	31	1	303	8	312	7	7	7	21	9	306	2	317	681
06:30 PM	10	4	13	27	2	248	6	256	8	2	3	13	12	348	1	361	657
06:45 PM	18	8	14	40	2	246	9	257	4	6	4	14	22	334	3	359	670
Total	52	19	54	125	8	1077	37	1122	26	20	21	67	62	1334	7	1403	2717
Grand Total	238	128	415	781	54	5016	151	5221	97	75	92	264	320	6010	66	6396	12662
Apprch %	30.5	16.4	53.1		1	96.1	2.9		36.7	28.4	34.8		5	94	1		
Total %	1.9	1	3.3	6.2	0.4	39.6	1.2	41.2	0.8	0.6	0.7	2.1	2.5	47.5	0.5	50.5	

	2nd Avenue Southbound				Bear Valley Road Westbound				2nd Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	16	**13**	37	66	4	355	**15**	374	**11**	**8**	**12**	**31**	**26**	420	0	446	917
03:45 PM	16	7	27	50	7	357	11	375	4	6	3	13	13	404	8	425	863
04:00 PM	**19**	12	**43**	**74**	4	**372**	9	**385**	5	5	5	15	21	**427**	4	**452**	**926**
04:15 PM	12	6	34	52	**8**	329	10	347	2	5	8	15	24	383	**11**	418	832
Total Volume	63	38	141	242	23	1413	45	1481	22	24	28	74	84	1634	23	1741	3538
% App. Total	26	15.7	58.3		1.6	95.4	3		29.7	32.4	37.8		4.8	93.9	1.3		
PHF	.829	.731	.820	.818	.719	.950	.750	.962	.500	.750	.583	.597	.808	.957	.523	.963	.955

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 2nd Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 01_VIC_2nd_BV PM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:30 PM				03:15 PM				03:30 PM			
+0 mins.	16	**13**	37	66	4	355	**15**	374	9	**8**	4	21	**26**	420	0	446
+15 mins.	16	7	27	50	7	357	11	375	**11**	8	**12**	**31**	13	404	8	425
+30 mins.	**19**	12	**43**	**74**	4	**372**	9	**385**	4	6	3	13	21	**427**	4	**452**
+45 mins.	12	6	34	52	**8**	329	10	347	5	5	5	15	24	383	**11**	418
Total Volume	63	38	141	242	23	1413	45	1481	29	27	24	80	84	1634	23	1741
% App. Total	26	15.7	58.3		1.6	95.4	3		36.2	33.8	30		4.8	93.9	1.3	
PHF	.829	.731	.820	.818	.719	.950	.750	.962	.659	.844	.500	.645	.808	.957	.523	.963

Location: Victorville
N/S: 2nd Avenue
E/W: Bear Valley Road

Date: 9/6/2023
Day: Wednesday

PEDESTRIANS

	North Leg 2nd Avenue Pedestrians	East Leg Bear Valley Road Pedestrians	South Leg 2nd Avenue Pedestrians	West Leg Bear Valley Road Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	1	2	3
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	1	0	0	2	3
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	1	1	2
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	1	0	2	5	8

	North Leg 2nd Avenue Pedestrians	East Leg Bear Valley Road Pedestrians	South Leg 2nd Avenue Pedestrians	West Leg Bear Valley Road Pedestrians	
3:00 PM	0	0	2	1	3
3:15 PM	0	0	0	4	4
3:30 PM	0	0	2	0	2
3:45 PM	0	0	0	1	1
4:00 PM	0	0	1	3	4
4:15 PM	0	0	1	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	1	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	1	0	1
6:15 PM	0	0	0	1	1
6:30 PM	0	0	3	0	3
6:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	10	11	21

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Victorville
N/S: 2nd Avenue
E/W: Bear Valley Road

Date: 9/6/2023
Day: Wednesday

BICYCLES

	Southbound 2nd Avenue			Westbound Bear Valley Road			Northbound 2nd Avenue			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	1	0	0	0	0	0	0	1

	Southbound 2nd Avenue			Westbound Bear Valley Road			Northbound 2nd Avenue			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	1	0	0	0	0	0	0	2

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Bornite Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 02_VIC_Bon_BV AM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 1

Groups Printed- Total Volume

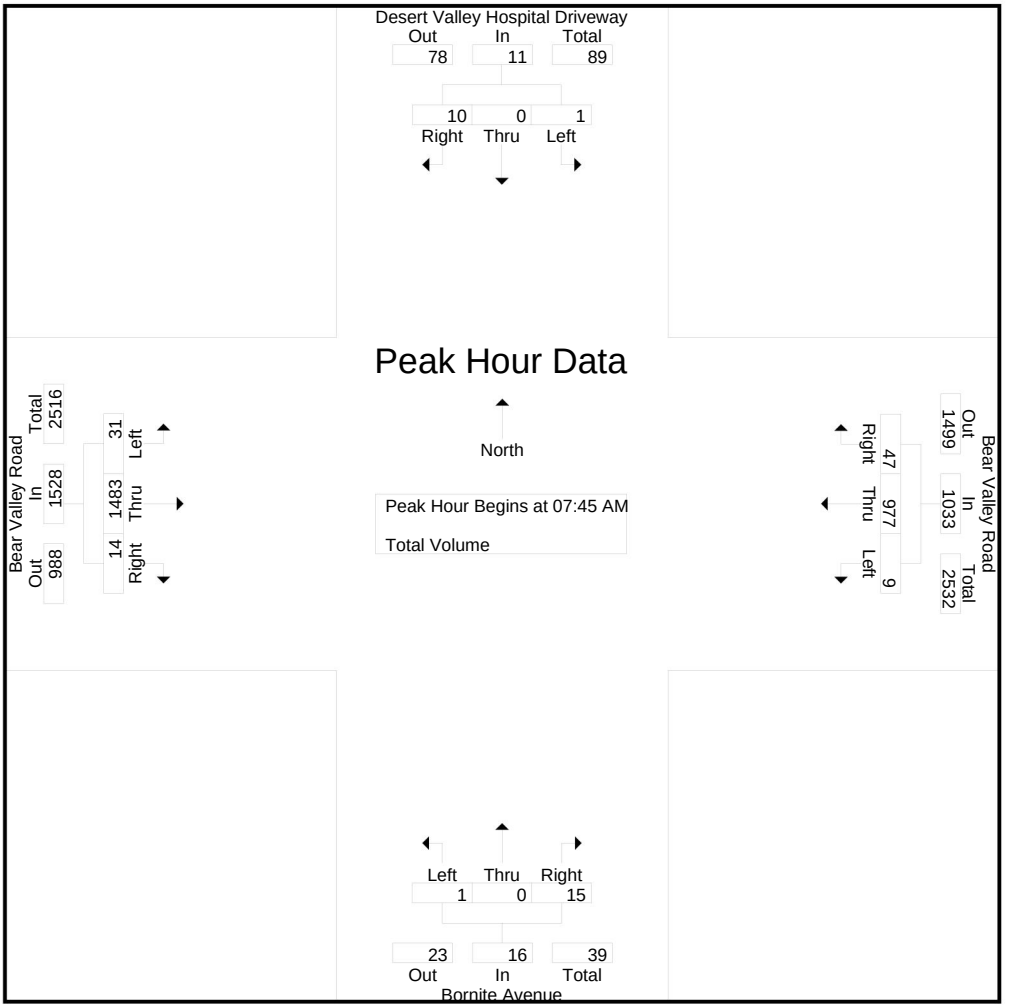
	Desert Valley Hospital Driveway Southbound				Bear Valley Road Westbound				Bornite Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	4	0	1	5	1	129	6	136	2	1	0	3	3	129	0	132	276
06:15 AM	0	0	0	0	0	128	9	137	1	0	0	1	6	141	1	148	286
06:30 AM	1	0	3	4	0	205	22	227	0	0	1	1	11	149	0	160	392
06:45 AM	1	0	0	1	0	230	16	246	0	0	1	1	8	230	0	238	486
Total	6	0	4	10	1	692	53	746	3	1	2	6	28	649	1	678	1440
07:00 AM	0	0	1	1	0	244	10	254	0	0	1	1	5	211	2	218	474
07:15 AM	1	0	11	12	1	150	13	164	0	0	2	2	6	302	2	310	488
07:30 AM	6	0	3	9	1	150	13	164	1	0	4	5	10	411	4	425	603
07:45 AM	0	0	6	6	2	185	19	206	0	0	5	5	15	485	3	503	720
Total	7	0	21	28	4	729	55	788	1	0	12	13	36	1409	11	1456	2285
08:00 AM	0	0	3	3	2	252	16	270	0	0	2	2	6	309	2	317	592
08:15 AM	0	0	1	1	1	270	5	276	1	0	2	3	4	348	4	356	636
08:30 AM	1	0	0	1	4	270	7	281	0	0	6	6	6	341	5	352	640
08:45 AM	1	0	2	3	5	281	5	291	0	0	5	5	1	385	4	390	689
Total	2	0	6	8	12	1073	33	1118	1	0	15	16	17	1383	15	1415	2557
Grand Total	15	0	31	46	17	2494	141	2652	5	1	29	35	81	3441	27	3549	6282
Apprch %	32.6	0	67.4		0.6	94	5.3		14.3	2.9	82.9		2.3	97	0.8		
Total %	0.2	0	0.5	0.7	0.3	39.7	2.2	42.2	0.1	0	0.5	0.6	1.3	54.8	0.4	56.5	

	Desert Valley Hospital Driveway Southbound				Bear Valley Road Westbound				Bornite Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	**6**	**6**	2	185	**19**	206	0	0	5	5	**15**	**485**	3	**503**	**720**
08:00 AM	0	0	3	3	2	252	16	270	0	0	2	2	6	309	2	317	592
08:15 AM	0	0	1	1	1	**270**	5	276	**1**	0	2	3	4	348	4	356	636
08:30 AM	**1**	0	0	1	**4**	270	7	**281**	0	0	**6**	**6**	6	341	**5**	352	640
Total Volume	1	0	10	11	9	977	47	1033	1	0	15	16	31	1483	14	1528	2588
% App. Total	9.1	0	90.9		0.9	94.6	4.5		6.2	0	93.8		2	97.1	0.9		
PHF	.250	.000	.417	.458	.563	.905	.618	.919	.250	.000	.625	.667	.517	.764	.700	.759	.899

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Bornite Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 02_VIC_Bon_BV AM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				08:00 AM				07:45 AM				07:30 AM			
+0 mins.	1	0	**11**	**12**	2	252	**16**	270	0	0	5	5	10	411	**4**	425
+15 mins.	**6**	0	3	9	1	270	5	276	0	0	2	2	**15**	**485**	3	**503**
+30 mins.	0	0	6	6	4	270	7	281	**1**	0	2	3	6	309	2	317
+45 mins.	0	0	3	3	**5**	**281**	5	**291**	0	0	**6**	**6**	4	348	4	356
Total Volume	7	0	23	30	12	1073	33	1118	1	0	15	16	35	1553	13	1601
% App. Total	23.3	0	76.7		1.1	96	3		6.2	0	93.8		2.2	97	0.8	
PHF	.292	.000	.523	.625	.600	.955	.516	.960	.250	.000	.625	.667	.583	.801	.813	.796

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Bornite Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 02_VIC_Bon_BV PM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 1

Groups Printed- Total Volume

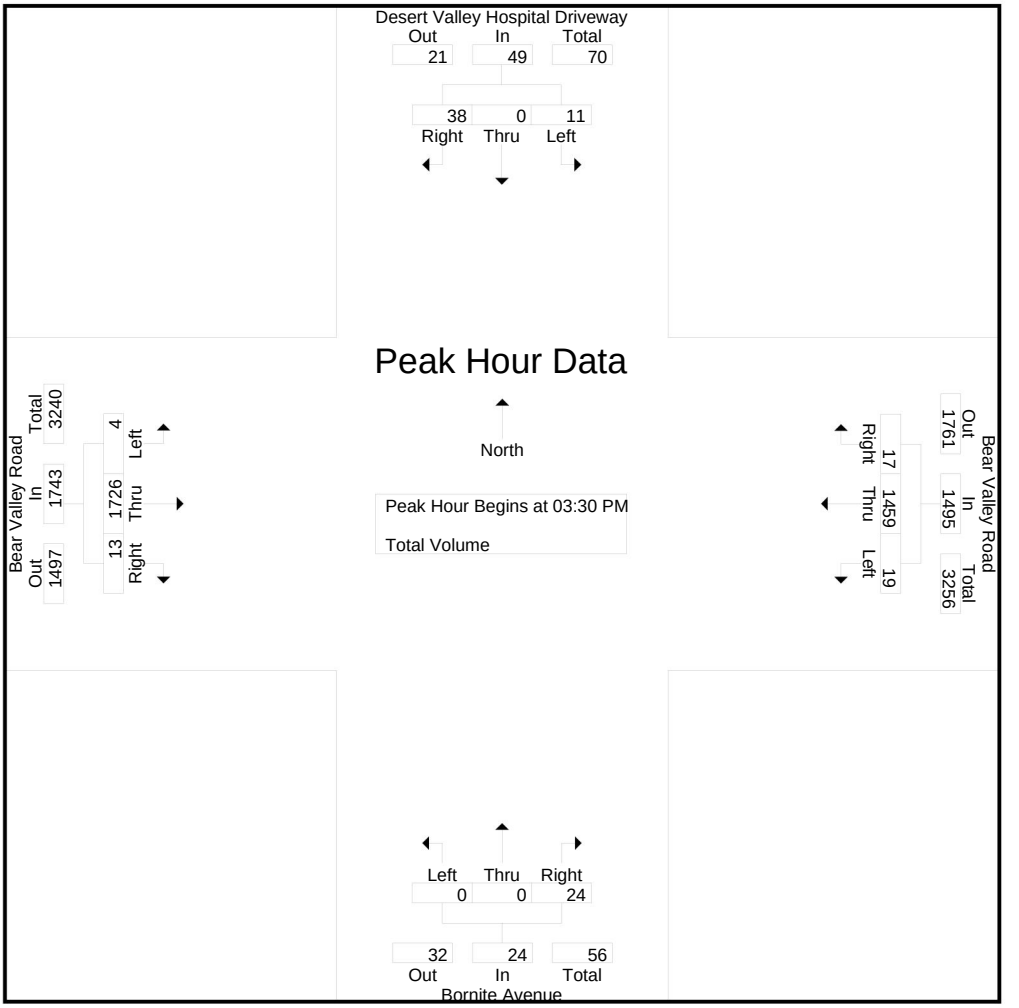
	Desert Valley Hospital Driveway Southbound				Bear Valley Road Westbound				Bornite Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	2	0	5	7	6	309	0	315	3	0	3	6	1	418	4	423	751
03:15 PM	0	0	2	2	7	334	3	344	0	0	8	8	1	396	3	400	754
03:30 PM	4	0	9	13	5	362	6	373	0	0	3	3	1	453	1	455	844
03:45 PM	3	0	14	17	8	374	6	388	0	0	8	8	1	407	3	411	824
Total	9	0	30	39	26	1379	15	1420	3	0	22	25	4	1674	11	1689	3173
04:00 PM	3	0	9	12	2	378	4	384	0	0	9	9	1	448	4	453	858
04:15 PM	1	0	6	7	4	345	1	350	0	0	4	4	1	418	5	424	785
04:30 PM	3	0	9	12	5	307	3	315	0	0	5	5	0	398	2	400	732
04:45 PM	7	0	6	13	3	318	3	324	0	0	5	5	1	388	3	392	734
Total	14	0	30	44	14	1348	11	1373	0	0	23	23	3	1652	14	1669	3109
05:00 PM	3	0	13	16	2	370	4	376	1	0	6	7	2	413	3	418	817
05:15 PM	0	0	8	8	4	305	1	310	1	0	6	7	1	408	2	411	736
05:30 PM	1	0	4	5	6	386	6	398	0	0	5	5	0	383	3	386	794
05:45 PM	2	0	2	4	6	277	5	288	1	0	5	6	1	402	4	407	705
Total	6	0	27	33	18	1338	16	1372	3	0	22	25	4	1606	12	1622	3052
06:00 PM	3	0	2	5	5	310	3	318	0	0	7	7	2	367	1	370	700
06:15 PM	2	0	7	9	4	320	6	330	0	0	2	2	1	320	2	323	664
06:30 PM	3	0	3	6	1	255	5	261	0	0	1	1	2	359	1	362	630
06:45 PM	0	0	4	4	5	260	18	283	0	0	5	5	5	347	0	352	644
Total	8	0	16	24	15	1145	32	1192	0	0	15	15	10	1393	4	1407	2638
Grand Total	37	0	103	140	73	5210	74	5357	6	0	82	88	21	6325	41	6387	11972
Apprch %	26.4	0	73.6		1.4	97.3	1.4		6.8	0	93.2		0.3	99	0.6		
Total %	0.3	0	0.9	1.2	0.6	43.5	0.6	44.7	0.1	0	0.7	0.7	0.2	52.8	0.3	53.3	

	Desert Valley Hospital Driveway Southbound				Bear Valley Road Westbound				Bornite Avenue Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	**4**	0	9	13	5	362	**6**	373	0	0	3	3	**1**	**453**	1	**455**	844
03:45 PM	3	0	**14**	**17**	**8**	374	6	**388**	0	0	8	8	1	407	3	411	824
04:00 PM	3	0	9	12	2	**378**	4	384	0	0	**9**	**9**	1	448	4	453	**858**
04:15 PM	1	0	6	7	4	345	1	350	0	0	4	4	1	418	**5**	424	785
Total Volume	11	0	38	49	19	1459	17	1495	0	0	24	24	4	1726	13	1743	3311
% App. Total	22.4	0	77.6		1.3	97.6	1.1		0	0	100		0.2	99	0.7		
PHF	.688	.000	.679	.721	.594	.965	.708	.963	.000	.000	.667	.667	1.00	.953	.650	.958	.965

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Bornite Avenue
E/W: Bear Valley Road
Weather: Clear

File Name : 02_VIC_Bon_BV PM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:30 PM				03:15 PM				03:30 PM			
+0 mins.	**4**	0	9	13	5	362	**6**	373	0	0	8	8	**1**	**453**	1	**455**
+15 mins.	3	0	**14**	**17**	**8**	374	6	**388**	0	0	3	3	1	407	3	411
+30 mins.	3	0	9	12	2	**378**	4	384	0	0	8	8	1	448	4	453
+45 mins.	1	0	6	7	4	345	1	350	0	0	**9**	**9**	1	418	**5**	424
Total Volume	11	0	38	49	19	1459	17	1495	0	0	28	28	4	1726	13	1743
% App. Total	22.4	0	77.6		1.3	97.6	1.1		0	0	100		0.2	99	0.7	
PHF	.688	.000	.679	.721	.594	.965	.708	.963	.000	.000	.778	.778	1.000	.953	.650	.958

Location: Victorville
N/S: Bornite Avenue
E/W: Bear Valley Road

Date: 9/6/2023
Day: Wednesday

PEDESTRIANS

	North Leg Desert Valley Hosp DW	East Leg Bear Valley Road	South Leg Bornite Avenue	West Leg Bear Valley Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	1	0	0	0	1
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	1	0	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	1	0	1
8:15 AM	0	0	0	0	0
8:30 AM	2	0	0	0	2
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	4	0	1	0	5

	North Leg Desert Valley Hosp DW	East Leg Bear Valley Road	South Leg Bornite Avenue	West Leg Bear Valley Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	1	1	2
3:45 PM	0	0	0	0	0
4:00 PM	1	0	0	0	1
4:15 PM	1	0	0	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	2	0	0	0	2
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	1	0	1
6:45 PM	0	0	0	0	0
TOTAL VOLUMES:	4	0	2	1	7

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Victorville
N/S: Bornite Avenue
E/W: Bear Valley Road



Date: 9/6/2023
Day: Wednesday

BICYCLES

	Southbound Desert Valley Hosp DW			Westbound Bear Valley Road			Northbound Bornite Avenue			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound Desert Valley Hosp DW			Westbound Bear Valley Road			Northbound Bornite Avenue			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	0	0	1

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Bear Valley Road
Weather: Clear

File Name : 03_VIC_Hes_BV AM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 1

Groups Printed- Total Volume

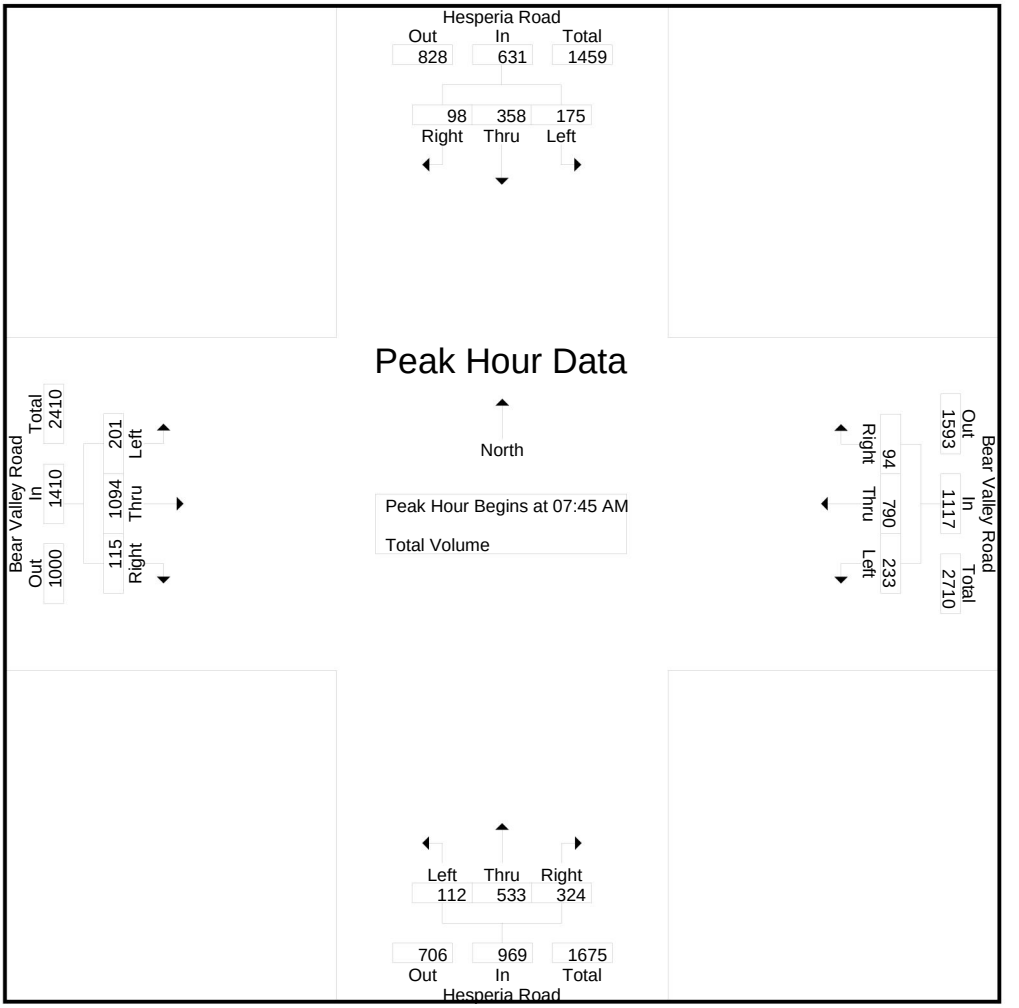
	Hesperia Road Southbound				Bear Valley Road Westbound				Hesperia Road Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	17	41	9	67	22	121	7	150	9	34	21	64	11	105	4	120	401
06:15 AM	23	36	7	66	15	124	10	149	9	53	21	83	13	125	10	148	446
06:30 AM	23	45	12	80	41	177	15	233	19	67	27	113	17	120	6	143	569
06:45 AM	25	67	7	99	67	203	14	284	24	77	47	148	27	174	19	220	751
Total	88	189	35	312	145	625	46	816	61	231	116	408	68	524	39	631	2167
07:00 AM	20	46	7	73	44	194	15	253	15	104	47	166	22	167	17	206	698
07:15 AM	28	58	8	94	38	123	17	178	23	103	46	172	25	235	28	288	732
07:30 AM	49	83	15	147	49	120	13	182	25	118	100	243	36	328	23	387	959
07:45 AM	59	105	24	188	45	150	19	214	30	141	103	274	52	345	29	426	1102
Total	156	292	54	502	176	587	64	827	93	466	296	855	135	1075	97	1307	3491
08:00 AM	41	74	29	144	55	211	24	290	29	156	88	273	50	258	33	341	1048
08:15 AM	32	83	22	137	80	221	23	324	30	117	66	213	44	254	23	321	995
08:30 AM	43	96	23	162	53	208	28	289	23	119	67	209	55	237	30	322	982
08:45 AM	48	94	28	170	53	223	28	304	37	94	69	200	58	291	29	378	1052
Total	164	347	102	613	241	863	103	1207	119	486	290	895	207	1040	115	1362	4077
Grand Total	408	828	191	1427	562	2075	213	2850	273	1183	702	2158	410	2639	251	3300	9735
Apprch %	28.6	58	13.4		19.7	72.8	7.5		12.7	54.8	32.5		12.4	80	7.6		
Total %	4.2	8.5	2	14.7	5.8	21.3	2.2	29.3	2.8	12.2	7.2	22.2	4.2	27.1	2.6	33.9	

	Hesperia Road Southbound				Bear Valley Road Westbound				Hesperia Road Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**59**	**105**	24	**188**	45	150	19	214	**30**	141	**103**	**274**	52	**345**	29	**426**	**1102**
08:00 AM	41	74	**29**	144	55	211	24	290	29	**156**	88	273	50	258	**33**	341	1048
08:15 AM	32	83	22	137	**80**	**221**	23	**324**	30	117	66	213	44	254	23	321	995
08:30 AM	43	96	23	162	53	208	**28**	289	23	119	67	209	**55**	237	30	322	982
Total Volume	175	358	98	631	233	790	94	1117	112	533	324	969	201	1094	115	1410	4127
% App. Total	27.7	56.7	15.5		20.9	70.7	8.4		11.6	55	33.4		14.3	77.6	8.2		
PHF	.742	.852	.845	.839	.728	.894	.839	.862	.933	.854	.786	.884	.914	.793	.871	.827	.936

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Bear Valley Road
Weather: Clear

File Name : 03_VIC_Hes_BV AM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				08:00 AM				07:30 AM				07:30 AM			
+0 mins.	**59**	**105**	24	**188**	55	211	24	290	25	118	100	243	36	328	23	387
+15 mins.	41	74	**29**	144	**80**	221	23	**324**	**30**	141	**103**	**274**	**52**	**345**	29	**426**
+30 mins.	32	83	22	137	53	208	**28**	289	29	**156**	88	273	50	258	**33**	341
+45 mins.	43	96	23	162	53	**223**	28	304	30	117	66	213	44	254	23	321
Total Volume	175	358	98	631	241	863	103	1207	114	532	357	1003	182	1185	108	1475
% App. Total	27.7	56.7	15.5		20	71.5	8.5		11.4	53	35.6		12.3	80.3	7.3	
PHF	.742	.852	.845	.839	.753	.967	.920	.931	.950	.853	.867	.915	.875	.859	.818	.866

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Bear Valley Road
Weather: Clear

File Name : 03_VIC_Hes_BV PM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 1

Groups Printed- Total Volume

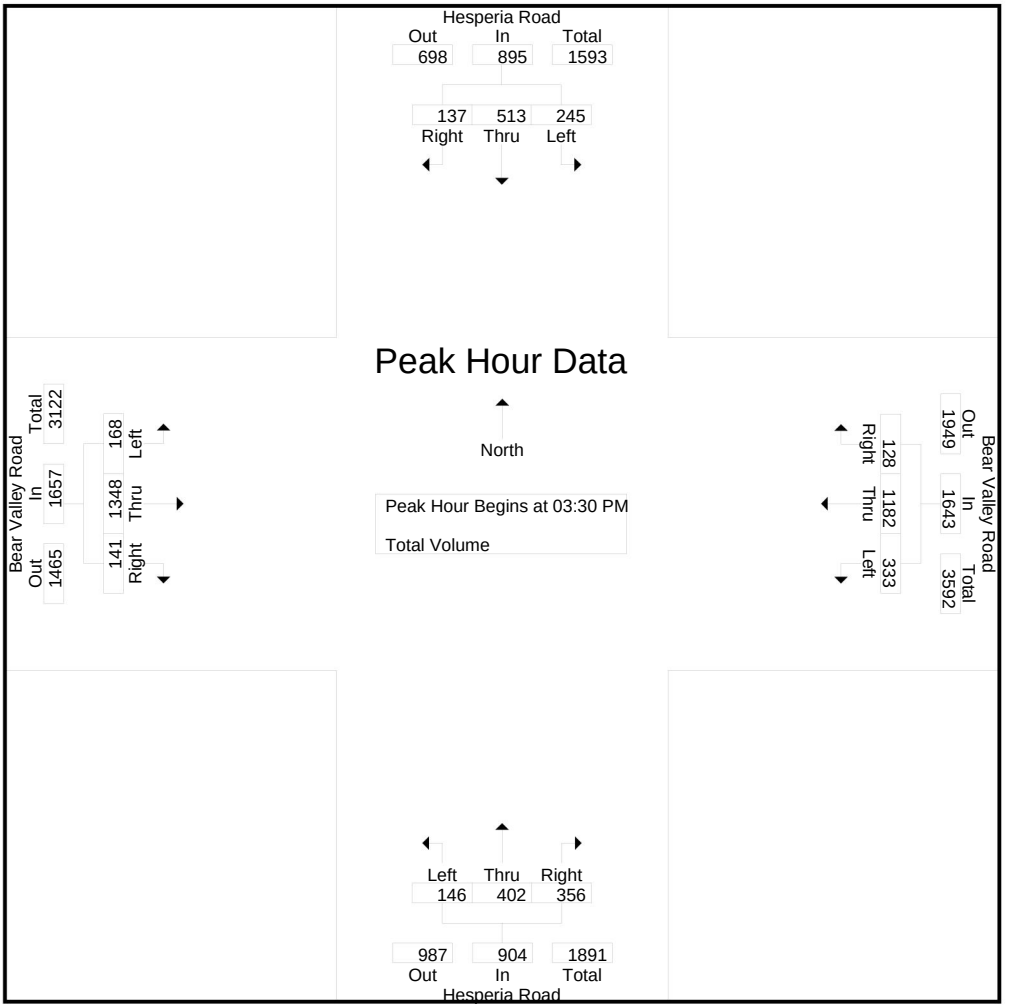
	Hesperia Road Southbound				Bear Valley Road Westbound				Hesperia Road Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	80	119	35	234	83	241	34	358	28	120	63	211	42	320	41	403	1206
03:15 PM	62	124	30	216	96	275	37	408	33	102	83	218	44	337	23	404	1246
03:30 PM	60	127	29	216	79	303	31	413	42	105	88	235	41	335	33	409	1273
03:45 PM	60	116	37	213	85	289	39	413	35	107	85	227	41	329	42	412	1265
Total	262	486	131	879	343	1108	141	1592	138	434	319	891	168	1321	139	1628	4990
04:00 PM	68	124	36	228	81	304	29	414	36	87	83	206	37	341	32	410	1258
04:15 PM	57	146	35	238	88	286	29	403	33	103	100	236	49	343	34	426	1303
04:30 PM	59	123	31	213	87	221	28	336	26	110	80	216	44	294	43	381	1146
04:45 PM	75	126	27	228	78	257	36	371	33	93	94	220	34	311	39	384	1203
Total	259	519	129	907	334	1068	122	1524	128	393	357	878	164	1289	148	1601	4910
05:00 PM	78	139	44	261	81	288	22	391	42	95	90	227	42	342	36	420	1299
05:15 PM	62	136	31	229	86	228	29	343	42	119	80	241	39	323	32	394	1207
05:30 PM	62	128	22	212	77	325	33	435	40	102	66	208	33	331	36	400	1255
05:45 PM	73	123	19	215	65	242	42	349	26	89	75	190	37	300	34	371	1125
Total	275	526	116	917	309	1083	126	1518	150	405	311	866	151	1296	138	1585	4886
06:00 PM	64	98	28	190	76	238	32	346	33	82	61	176	42	304	23	369	1081
06:15 PM	47	105	26	178	62	261	37	360	20	67	78	165	31	290	30	351	1054
06:30 PM	52	92	20	164	73	218	12	303	20	71	64	155	31	262	32	325	947
06:45 PM	34	80	16	130	70	238	21	329	26	72	59	157	24	275	34	333	949
Total	197	375	90	662	281	955	102	1338	99	292	262	653	128	1131	119	1378	4031
Grand Total	993	1906	466	3365	1267	4214	491	5972	515	1524	1249	3288	611	5037	544	6192	18817
Apprch %	29.5	56.6	13.8		21.2	70.6	8.2		15.7	46.4	38		9.9	81.3	8.8		
Total %	5.3	10.1	2.5	17.9	6.7	22.4	2.6	31.7	2.7	8.1	6.6	17.5	3.2	26.8	2.9	32.9	

	Hesperia Road Southbound				Bear Valley Road Westbound				Hesperia Road Northbound				Bear Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	60	127	29	216	79	303	31	413	**42**	105	88	235	41	335	33	409	1273
03:45 PM	60	116	**37**	213	85	289	**39**	413	35	**107**	85	227	41	329	**42**	412	1265
04:00 PM	**68**	124	36	228	81	**304**	29	**414**	36	87	83	206	37	341	32	410	1258
04:15 PM	57	**146**	35	**238**	**88**	286	29	403	33	103	**100**	**236**	**49**	**343**	34	**426**	**1303**
Total Volume	245	513	137	895	333	1182	128	1643	146	402	356	904	168	1348	141	1657	5099
% App. Total	27.4	57.3	15.3		20.3	71.9	7.8		16.2	44.5	39.4		10.1	81.4	8.5		
PHF	.901	.878	.926	.940	.946	.972	.821	.992	.869	.939	.890	.958	.857	.983	.839	.972	.978

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Bear Valley Road
Weather: Clear

File Name : 03_VIC_Hes_BV PM
Site Code : 23223811
Start Date : 9/6/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				03:15 PM				03:30 PM				03:30 PM			
+0 mins.	57	**146**	35	238	**96**	275	37	408	**42**	105	88	235	41	335	33	409
+15 mins.	59	123	31	213	79	303	31	413	35	**107**	85	227	41	329	**42**	412
+30 mins.	75	126	27	228	85	289	**39**	413	36	87	83	206	37	341	32	410
+45 mins.	**78**	139	**44**	**261**	81	**304**	29	**414**	33	103	**100**	**236**	**49**	**343**	34	**426**
Total Volume	269	534	137	940	341	1171	136	1648	146	402	356	904	168	1348	141	1657
% App. Total	28.6	56.8	14.6		20.7	71.1	8.3		16.2	44.5	39.4		10.1	81.4	8.5	
PHF	.862	.914	.778	.900	.888	.963	.872	.995	.869	.939	.890	.958	.857	.983	.839	.972

Location: Victorville
N/S: Hesperia Road
E/W: Bear Valley Road

Date: 9/6/2023
Day: Wednesday

PEDESTRIANS

	North Leg Hesperia Road Pedestrians	East Leg Bear Valley Road Pedestrians	South Leg Hesperia Road Pedestrians	West Leg Bear Valley Road Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	2	0	0	2
6:30 AM	0	3	0	0	3
6:45 AM	2	0	0	0	2
7:00 AM	0	2	0	0	2
7:15 AM	0	0	2	0	2
7:30 AM	0	0	0	1	1
7:45 AM	0	0	2	2	4
8:00 AM	1	1	1	2	5
8:15 AM	0	0	1	1	2
8:30 AM	0	0	0	0	0
8:45 AM	0	2	0	0	2
TOTAL VOLUMES:	3	10	6	6	25

	North Leg Hesperia Road Pedestrians	East Leg Bear Valley Road Pedestrians	South Leg Hesperia Road Pedestrians	West Leg Bear Valley Road Pedestrians	
3:00 PM	0	3	2	1	6
3:15 PM	0	3	1	0	4
3:30 PM	3	1	0	3	7
3:45 PM	1	2	1	2	6
4:00 PM	1	0	1	1	3
4:15 PM	0	2	1	1	4
4:30 PM	0	0	0	0	0
4:45 PM	1	3	0	2	6
5:00 PM	1	0	2	3	6
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	1	0	0	0	1
6:00 PM	2	0	0	1	3
6:15 PM	1	0	0	0	1
6:30 PM	1	2	0	1	4
6:45 PM	3	1	0	3	7
TOTAL VOLUMES:	15	17	8	18	58

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Victorville
N/S: Hesperia Road
E/W: Bear Valley Road

Date: 9/6/2023
Day: Wednesday

BICYCLES

	Southbound Hesperia Road			Westbound Bear Valley Road			Northbound Hesperia Road			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound Hesperia Road			Westbound Bear Valley Road			Northbound Hesperia Road			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	0	0	1

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 1st Avenue
E/W: Jasmine Street
Weather: Clear

File Name : 04_VIC_1st_Jas AM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 1

Groups Printed- Total Volume

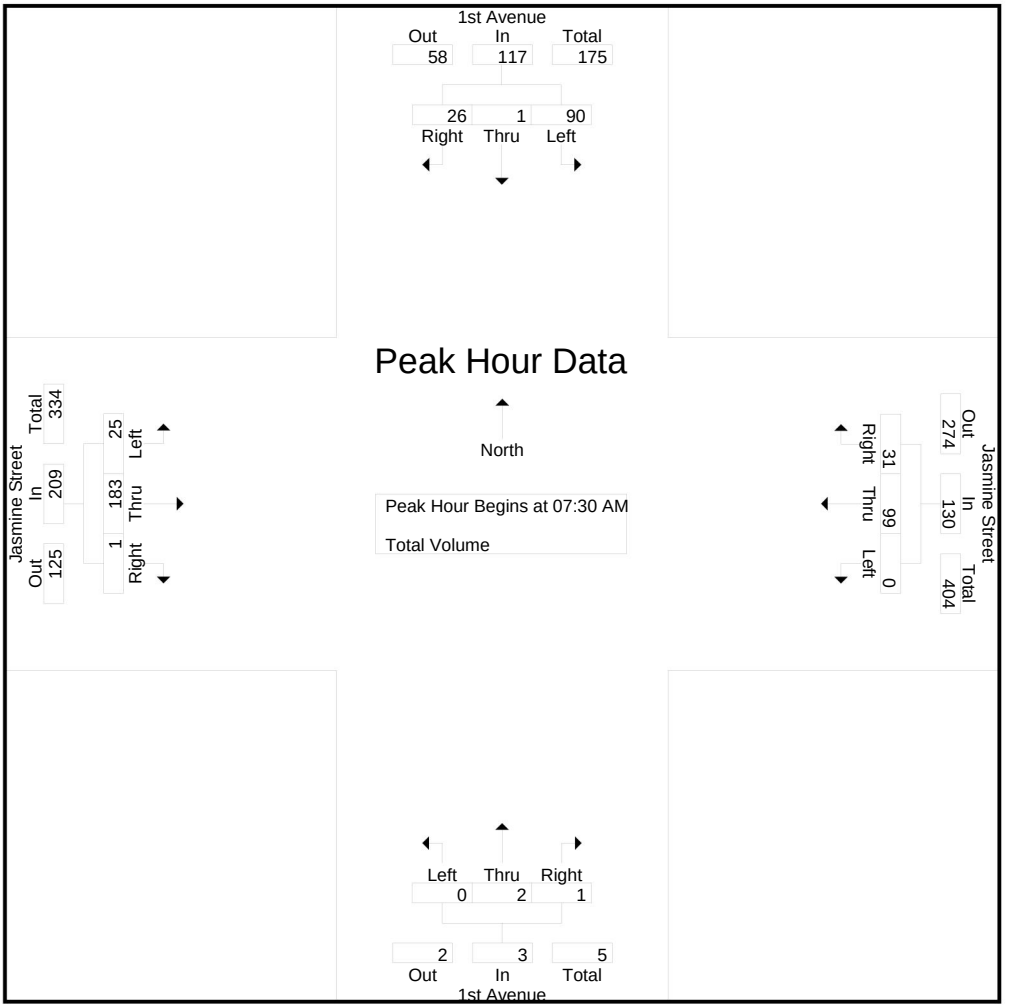
	1st Avenue Southbound				Jasmine Street Westbound				1st Avenue Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	2	0	4	6	0	5	0	5	0	0	0	0	0	6	0	6	17
06:15 AM	5	0	2	7	0	4	0	4	0	0	0	0	2	8	0	10	21
06:30 AM	6	0	7	13	0	12	2	14	0	0	0	0	1	13	0	14	41
06:45 AM	7	0	8	15	0	14	5	19	0	0	0	0	3	15	0	18	52
Total	20	0	21	41	0	35	7	42	0	0	0	0	6	42	0	48	131
07:00 AM	9	0	7	16	0	7	0	7	0	0	0	0	6	13	0	19	42
07:15 AM	18	0	8	26	0	17	13	30	0	1	2	3	3	40	0	43	102
07:30 AM	28	0	6	34	0	13	15	28	0	1	0	1	9	40	0	49	112
07:45 AM	33	0	9	42	0	25	5	30	0	0	1	1	7	60	0	67	140
Total	88	0	30	118	0	62	33	95	0	2	3	5	25	153	0	178	396
08:00 AM	20	0	5	25	0	30	5	35	0	1	0	1	5	37	0	42	103
08:15 AM	9	1	6	16	0	31	6	37	0	0	0	0	4	46	1	51	104
08:30 AM	9	0	2	11	0	25	4	29	0	1	0	1	5	31	0	36	77
08:45 AM	18	0	2	20	0	24	3	27	0	0	0	0	2	40	0	42	89
Total	56	1	15	72	0	110	18	128	0	2	0	2	16	154	1	171	373
Grand Total	164	1	66	231	0	207	58	265	0	4	3	7	47	349	1	397	900
Apprch %	71	0.4	28.6		0	78.1	21.9		0	57.1	42.9		11.8	87.9	0.3		
Total %	18.2	0.1	7.3	25.7	0	23	6.4	29.4	0	0.4	0.3	0.8	5.2	38.8	0.1	44.1	

	1st Avenue Southbound				Jasmine Street Westbound				1st Avenue Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	28	0	6	34	0	13	**15**	28	0	**1**	0	**1**	**9**	40	0	49	112
07:45 AM	**33**	0	**9**	**42**	0	25	5	30	0	0	**1**	1	7	**60**	0	**67**	**140**
08:00 AM	20	0	5	25	0	30	5	35	0	1	0	1	5	37	0	42	103
08:15 AM	9	**1**	6	16	0	**31**	6	**37**	0	0	0	0	4	46	**1**	51	104
Total Volume	90	1	26	117	0	99	31	130	0	2	1	3	25	183	1	209	459
% App. Total	76.9	0.9	22.2		0	76.2	23.8		0	66.7	33.3		12	87.6	0.5		
PHF	.682	.250	.722	.696	.000	.798	.517	.878	.000	.500	.250	.750	.694	.763	.250	.780	.820

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 1st Avenue
E/W: Jasmine Street
Weather: Clear

File Name : 04_VIC_1st_Jas AM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				07:15 AM				07:30 AM			
+0 mins.	18	0	8	26	0	25	5	30	0	**1**	**2**	**3**	**9**	40	0	49
+15 mins.	28	0	6	34	0	30	5	35	0	1	0	1	7	**60**	0	**67**
+30 mins.	**33**	0	**9**	**42**	0	**31**	**6**	**37**	0	0	1	1	5	37	0	42
+45 mins.	20	0	5	25	0	25	4	29	0	1	0	1	4	46	**1**	51
Total Volume	99	0	28	127	0	111	20	131	0	3	3	6	25	183	1	209
% App. Total	78	0	22		0	84.7	15.3		0	50	50		12	87.6	0.5	
PHF	.750	.000	.778	.756	.000	.895	.833	.885	.000	.750	.375	.500	.694	.763	.250	.780

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 1st Avenue
E/W: Jasmine Street
Weather: Clear

File Name : 04_VIC_1st_Jas PM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 1

Groups Printed- Total Volume

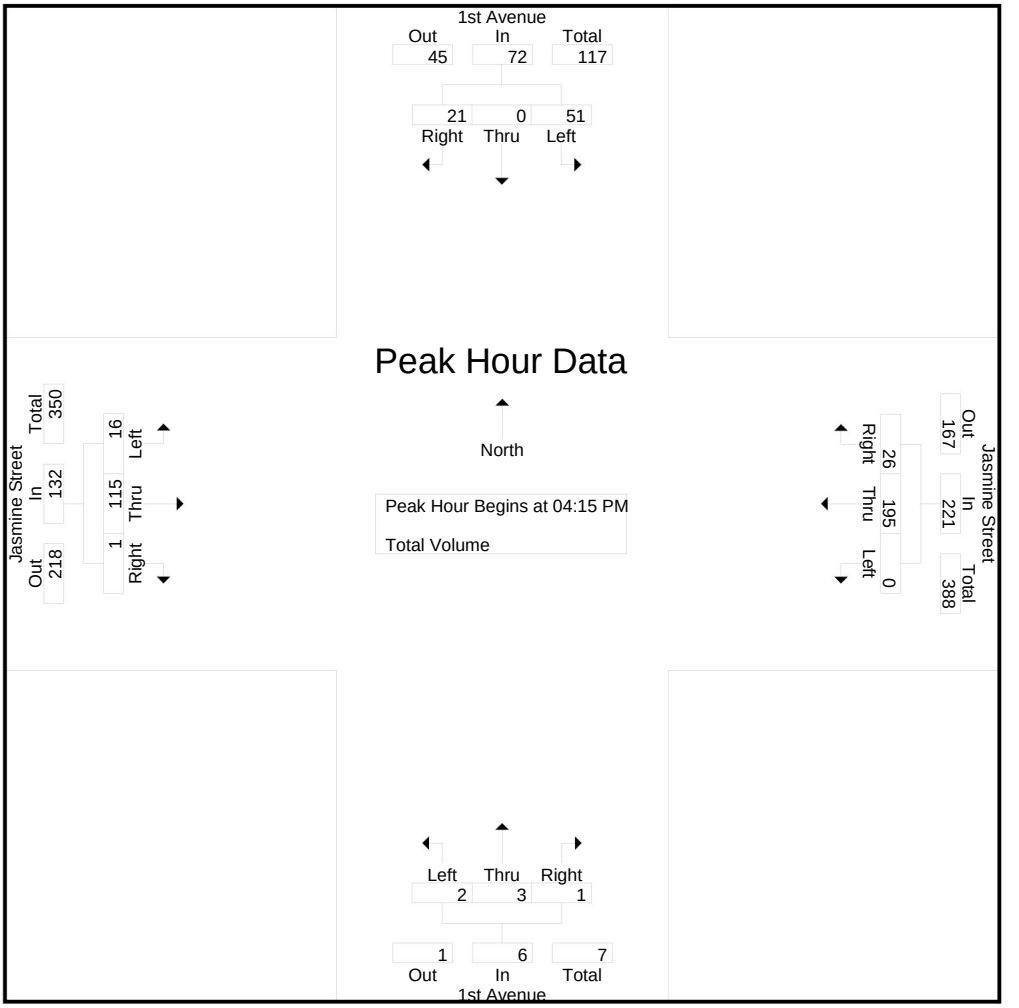
	1st Avenue Southbound				Jasmine Street Westbound				1st Avenue Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	22	1	6	29	0	40	8	48	0	0	1	1	5	34	0	39	117
03:15 PM	14	1	5	20	0	40	7	47	3	1	0	4	3	29	1	33	104
03:30 PM	8	0	9	17	0	35	5	40	2	2	1	5	2	34	0	36	98
03:45 PM	13	1	9	23	0	33	2	35	0	0	1	1	4	29	0	33	92
Total	57	3	29	89	0	148	22	170	5	3	3	11	14	126	1	141	411
04:00 PM	17	0	2	19	0	28	9	37	0	1	1	2	1	32	0	33	91
04:15 PM	10	0	5	15	0	36	8	44	1	1	1	3	2	25	1	28	90
04:30 PM	16	0	2	18	0	58	9	67	1	0	0	1	4	32	0	36	122
04:45 PM	13	0	6	19	0	42	3	45	0	0	0	0	3	26	0	29	93
Total	56	0	15	71	0	164	29	193	2	2	2	6	10	115	1	126	396
05:00 PM	12	0	8	20	0	59	6	65	0	2	0	2	7	32	0	39	126
05:15 PM	9	0	3	12	0	38	4	42	0	0	0	0	2	25	1	28	82
05:30 PM	12	0	6	18	2	31	4	37	3	2	2	7	4	23	1	28	90
05:45 PM	15	0	3	18	0	29	3	32	0	1	0	1	2	17	0	19	70
Total	48	0	20	68	2	157	17	176	3	5	2	10	15	97	2	114	368
06:00 PM	12	1	3	16	0	21	3	24	0	2	0	2	4	24	1	29	71
06:15 PM	10	0	6	16	0	22	3	25	1	0	0	1	1	24	0	25	67
06:30 PM	9	0	6	15	0	13	2	15	1	0	0	1	2	11	0	13	44
06:45 PM	9	0	7	16	0	18	2	20	0	0	0	0	2	18	0	20	56
Total	40	1	22	63	0	74	10	84	2	2	0	4	9	77	1	87	238
Grand Total	201	4	86	291	2	543	78	623	12	12	7	31	48	415	5	468	1413
Apprch %	69.1	1.4	29.6		0.3	87.2	12.5		38.7	38.7	22.6		10.3	88.7	1.1		
Total %	14.2	0.3	6.1	20.6	0.1	38.4	5.5	44.1	0.8	0.8	0.5	2.2	3.4	29.4	0.4	33.1	

	1st Avenue Southbound				Jasmine Street Westbound				1st Avenue Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	10	0	5	15	0	36	8	44	**1**	1	**1**	**3**	2	25	**1**	28	90
04:30 PM	**16**	0	2	18	0	58	**9**	**67**	1	0	0	1	4	**32**	0	36	122
04:45 PM	13	0	6	19	0	42	3	45	0	0	0	0	3	26	0	29	93
05:00 PM	12	0	**8**	**20**	0	**59**	6	65	0	**2**	0	2	**7**	32	0	**39**	**126**
Total Volume	51	0	21	72	0	195	26	221	2	3	1	6	16	115	1	132	431
% App. Total	70.8	0	29.2		0	88.2	11.8		33.3	50	16.7		12.1	87.1	0.8		
PHF	.797	.000	.656	.900	.000	.826	.722	.825	.500	.375	.250	.500	.571	.898	.250	.846	.855

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: 1st Avenue
E/W: Jasmine Street
Weather: Clear

File Name : 04_VIC_1st_Jas PM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				04:15 PM				03:15 PM				03:00 PM			
+0 mins.	**22**	**1**	6	**29**	0	36	8	44	**3**	1	0	4	**5**	**34**	0	**39**
+15 mins.	14	1	5	20	0	58	**9**	**67**	2	**2**	**1**	**5**	3	29	**1**	33
+30 mins.	8	0	**9**	17	0	42	3	45	0	0	1	1	2	34	0	36
+45 mins.	13	1	9	23	0	**59**	6	65	0	1	1	2	4	29	0	33
Total Volume	57	3	29	89	0	195	26	221	5	4	3	12	14	126	1	141
% App. Total	64	3.4	32.6		0	88.2	11.8		41.7	33.3	25		9.9	89.4	0.7	
PHF	.648	.750	.806	.767	.000	.826	.722	.825	.417	.500	.750	.600	.700	.926	.250	.904

Location: Victorville
N/S: 1st Avenue
E/W: Jasmine Street

Date: 9/14/2023
Day: Thursday

PEDESTRIANS

	North Leg 1st Avenue	East Leg Jasmine Street	South Leg 1st Avenue	West Leg Jasmine Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	2	0	0	1	3
6:30 AM	2	0	0	0	2
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	2	0	0	0	2
7:45 AM	2	0	0	0	2
8:00 AM	2	0	0	0	2
8:15 AM	3	0	0	0	3
8:30 AM	1	0	0	0	1
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	14	0	0	1	15

	North Leg 1st Avenue	East Leg Jasmine Street	South Leg 1st Avenue	West Leg Jasmine Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	0	0	0	0
3:15 PM	1	0	0	0	1
3:30 PM	2	0	0	0	2
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	1	0	0	0	1
4:30 PM	2	1	0	0	3
4:45 PM	0	1	0	0	1
5:00 PM	1	2	0	0	3
5:15 PM	1	0	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	3	0	0	1	4
6:30 PM	2	0	0	0	2
6:45 PM	0	1	0	1	2
TOTAL VOLUMES:	13	5	0	2	20

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Victorville
N/S: 1st Avenue
E/W: Jasmine Street

Date: 9/14/2023
Day: Thursday

BICYCLES

	Southbound 1st Avenue			Westbound Jasmine Street			Northbound 1st Avenue			Eastbound Jasmine Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound 1st Avenue			Westbound Jasmine Street			Northbound 1st Avenue			Eastbound Jasmine Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	1	0	0	0	0	0	1	0	0	0	0	2

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Jasmine Street
Weather: Clear

File Name : 05_VIC_Hes_Jas AM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 1

Groups Printed- Total Volume

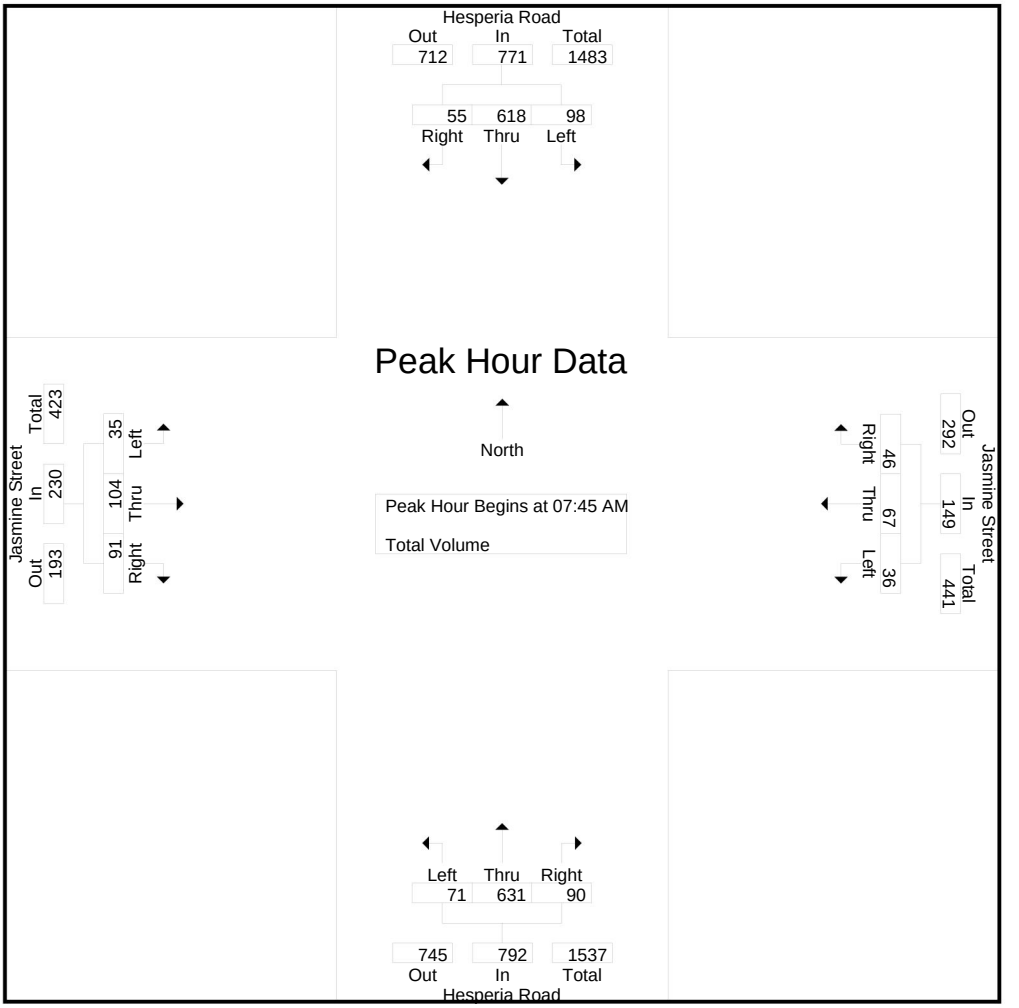
	Hesperia Road Southbound				Jasmine Street Westbound				Hesperia Road Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	6	61	1	68	2	2	3	7	4	73	8	85	2	0	2	4	164
06:15 AM	7	54	1	62	3	1	2	6	3	79	10	92	3	3	5	11	171
06:30 AM	5	71	3	79	1	6	6	13	7	73	9	89	1	8	6	15	196
06:45 AM	19	97	3	119	4	7	4	15	4	109	12	125	6	8	10	24	283
Total	37	283	8	328	10	16	15	41	18	334	39	391	12	19	23	54	814
07:00 AM	13	93	6	112	3	3	2	8	7	108	6	121	2	6	12	20	261
07:15 AM	12	95	12	119	9	17	5	31	5	137	18	160	8	21	22	51	361
07:30 AM	16	165	11	192	8	10	7	25	18	144	16	178	13	30	22	65	460
07:45 AM	29	154	19	202	7	17	8	32	19	170	22	211	6	38	28	72	517
Total	70	507	48	625	27	47	22	96	49	559	62	670	29	95	84	208	1599
08:00 AM	19	160	17	196	11	15	15	41	23	177	22	222	13	24	18	55	514
08:15 AM	27	137	11	175	5	18	14	37	17	133	26	176	5	28	26	59	447
08:30 AM	23	167	8	198	13	17	9	39	12	151	20	183	11	14	19	44	464
08:45 AM	27	173	8	208	16	17	28	61	15	141	28	184	13	18	25	56	509
Total	96	637	44	777	45	67	66	178	67	602	96	765	42	84	88	214	1934
Grand Total	203	1427	100	1730	82	130	103	315	134	1495	197	1826	83	198	195	476	4347
Apprch %	11.7	82.5	5.8		26	41.3	32.7		7.3	81.9	10.8		17.4	41.6	41		
Total %	4.7	32.8	2.3	39.8	1.9	3	2.4	7.2	3.1	34.4	4.5	42	1.9	4.6	4.5	11	

	Hesperia Road Southbound				Jasmine Street Westbound				Hesperia Road Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**29**	154	**19**	**202**	7	17	8	32	19	170	22	211	6	**38**	**28**	**72**	**517**
08:00 AM	19	160	17	196	11	15	**15**	**41**	**23**	**177**	22	**222**	**13**	24	18	55	514
08:15 AM	27	137	11	175	5	**18**	14	37	17	133	**26**	176	5	28	26	59	447
08:30 AM	23	**167**	8	198	**13**	17	9	39	12	151	20	183	11	14	19	44	464
Total Volume	98	618	55	771	36	67	46	149	71	631	90	792	35	104	91	230	1942
% App. Total	12.7	80.2	7.1		24.2	45	30.9		9	79.7	11.4		15.2	45.2	39.6		
PHF	.845	.925	.724	.954	.692	.931	.767	.909	.772	.891	.865	.892	.673	.684	.813	.799	.939

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Jasmine Street
Weather: Clear

File Name : 05_VIC_Hes_Jas AM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				07:45 AM				07:30 AM			
+0 mins.	19	160	**17**	196	11	15	15	41	19	170	22	211	**13**	30	22	65
+15 mins.	**27**	137	11	175	5	**18**	14	37	**23**	**177**	22	**222**	6	**38**	**28**	**72**
+30 mins.	23	167	8	198	13	17	9	39	17	133	**26**	176	13	24	18	55
+45 mins.	27	**173**	8	**208**	**16**	17	**28**	**61**	12	151	20	183	5	28	26	59
Total Volume	96	637	44	777	45	67	66	178	71	631	90	792	37	120	94	251
% App. Total	12.4	82	5.7		25.3	37.6	37.1		9	79.7	11.4		14.7	47.8	37.5	
PHF	.889	.921	.647	.934	.703	.931	.589	.730	.772	.891	.865	.892	.712	.789	.839	.872

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Jasmine Street
Weather: Clear

File Name : 05_VIC_Hes_Jas PM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 1

Groups Printed- Total Volume

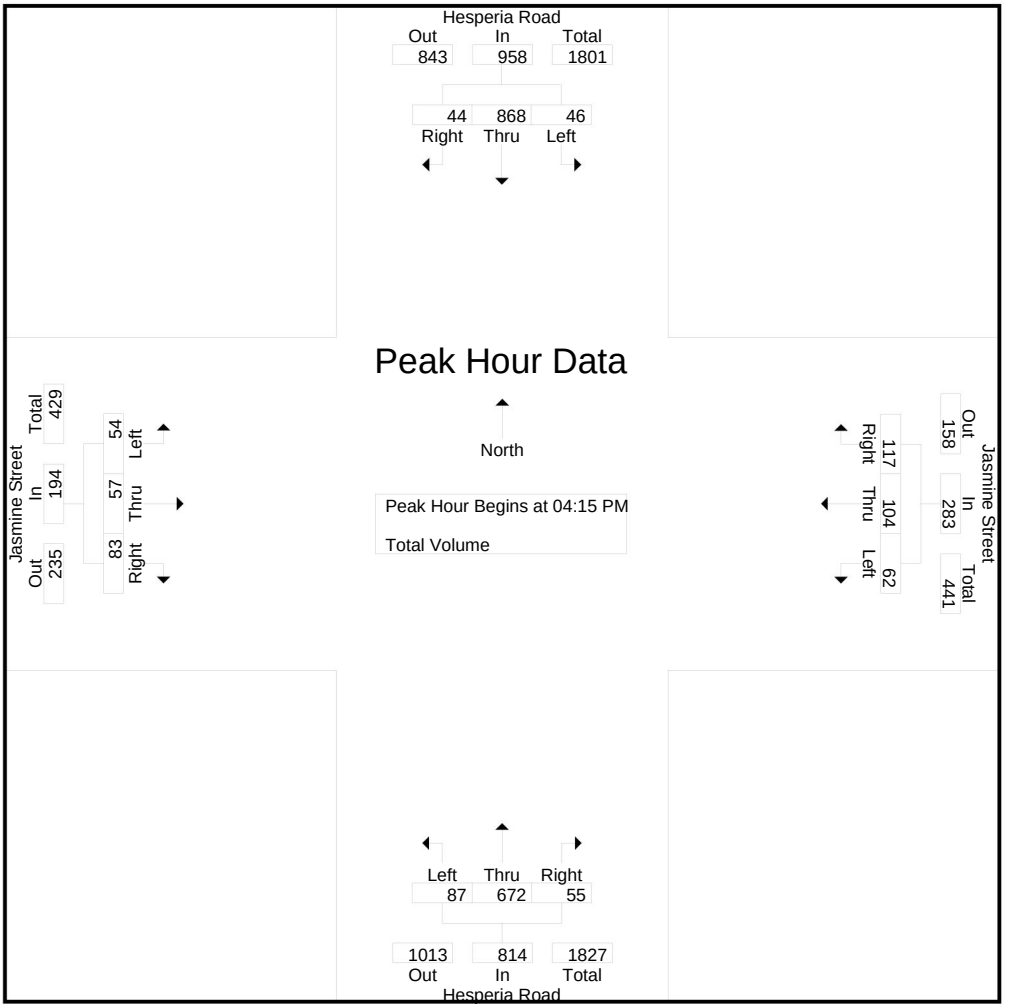
	Hesperia Road Southbound				Jasmine Street Westbound				Hesperia Road Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	11	182	9	202	11	22	28	61	28	170	13	211	14	20	32	66	540
03:15 PM	12	220	13	245	10	19	24	53	17	166	13	196	9	17	17	43	537
03:30 PM	14	196	16	226	12	15	16	43	12	159	11	182	15	19	16	50	501
03:45 PM	20	236	8	264	11	13	22	46	23	144	11	178	8	12	23	43	531
Total	57	834	46	937	44	69	90	203	80	639	48	767	46	68	88	202	2109
04:00 PM	19	198	13	230	10	17	27	54	20	189	13	222	12	16	25	53	559
04:15 PM	15	226	13	254	9	21	24	54	20	161	16	197	12	13	19	44	549
04:30 PM	15	185	13	213	16	37	31	84	19	168	12	199	13	15	24	52	548
04:45 PM	9	211	11	231	17	16	23	56	25	172	15	212	14	8	24	46	545
Total	58	820	50	928	52	91	105	248	84	690	56	830	51	52	92	195	2201
05:00 PM	7	246	7	260	20	30	39	89	23	171	12	206	15	21	16	52	607
05:15 PM	9	216	10	235	5	12	16	33	21	157	13	191	11	13	21	45	504
05:30 PM	8	194	5	207	4	19	10	33	17	158	5	180	7	17	17	41	461
05:45 PM	10	207	4	221	6	15	18	39	17	138	3	158	6	4	18	28	446
Total	34	863	26	923	35	76	83	194	78	624	33	735	39	55	72	166	2018
06:00 PM	4	175	3	182	5	8	18	31	16	153	4	173	8	7	16	31	417
06:15 PM	5	137	4	146	7	9	5	21	19	140	11	170	8	4	19	31	368
06:30 PM	6	141	6	153	6	9	2	17	8	110	6	124	5	6	13	24	318
06:45 PM	2	129	3	134	2	7	15	24	9	117	4	130	6	5	14	25	313
Total	17	582	16	615	20	33	40	93	52	520	25	597	27	22	62	111	1416
Grand Total	166	3099	138	3403	151	269	318	738	294	2473	162	2929	163	197	314	674	7744
Apprch %	4.9	91.1	4.1		20.5	36.4	43.1		10	84.4	5.5		24.2	29.2	46.6		
Total %	2.1	40	1.8	43.9	1.9	3.5	4.1	9.5	3.8	31.9	2.1	37.8	2.1	2.5	4.1	8.7	

	Hesperia Road Southbound				Jasmine Street Westbound				Hesperia Road Northbound				Jasmine Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**15**	226	**13**	254	9	21	24	54	20	161	**16**	197	12	13	19	44	549
04:30 PM	15	185	13	213	16	**37**	31	84	19	168	12	199	13	15	**24**	**52**	548
04:45 PM	9	211	11	231	17	16	23	56	**25**	**172**	15	**212**	14	8	24	46	545
05:00 PM	7	**246**	7	**260**	**20**	30	**39**	**89**	23	171	12	206	**15**	**21**	16	52	**607**
Total Volume	46	868	44	958	62	104	117	283	87	672	55	814	54	57	83	194	2249
% App. Total	4.8	90.6	4.6		21.9	36.7	41.3		10.7	82.6	6.8		27.8	29.4	42.8		
PHF	.767	.882	.846	.921	.775	.703	.750	.795	.870	.977	.859	.960	.900	.679	.865	.933	.926

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Hesperia Road
E/W: Jasmine Street
Weather: Clear

File Name : 05_VIC_Hes_Jas PM
Site Code : 23223811
Start Date : 9/14/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				04:15 PM				04:00 PM				03:00 PM			
+0 mins.	14	196	**16**	226	9	21	24	54	20	**189**	13	**222**	14	**20**	**32**	**66**
+15 mins.	**20**	**236**	8	**264**	16	**37**	31	84	20	161	**16**	197	9	17	17	43
+30 mins.	19	198	13	230	17	16	23	56	19	168	12	199	**15**	19	16	50
+45 mins.	15	226	13	254	**20**	30	**39**	**89**	**25**	172	15	212	8	12	23	43
Total Volume	68	856	50	974	62	104	117	283	84	690	56	830	46	68	88	202
% App. Total	7	87.9	5.1		21.9	36.7	41.3		10.1	83.1	6.7		22.8	33.7	43.6	
PHF	.850	.907	.781	.922	.775	.703	.750	.795	.840	.913	.875	.935	.767	.850	.688	.765

Location: Victorville
N/S: Hesperia Road
E/W: Jasmine Street



Date: 9/14/2023
Day: Thursday

PEDESTRIANS

	North Leg Hesperia Road	East Leg Jasmine Street	South Leg Hesperia Road	West Leg Jasmine Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	1	1	0	0	2
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	1	0	0	0	1
8:45 AM	1	0	1	1	3
TOTAL VOLUMES:	3	1	1	1	6

	North Leg Hesperia Road	East Leg Jasmine Street	South Leg Hesperia Road	West Leg Jasmine Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	0	0	0	0
3:15 PM	1	1	0	0	2
3:30 PM	0	0	0	2	2
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	2	2
5:30 PM	0	0	0	0	0
5:45 PM	0	0	1	0	1
6:00 PM	0	1	0	0	1
6:15 PM	0	0	2	0	2
6:30 PM	0	0	1	0	1
6:45 PM	0	0	0	0	0
TOTAL VOLUMES:	1	2	4	4	11

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Victorville
N/S: Hesperia Road
E/W: Jasmine Street

Date: 9/14/2023
Day: Thursday

BICYCLES

	Southbound Hesperia Road			Westbound Jasmine Street			Northbound Hesperia Road			Eastbound Jasmine Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL VOLUMES:	0	0	0	1	0	0	0	0	0	1	0	0	2

	Southbound Hesperia Road			Westbound Jasmine Street			Northbound Hesperia Road			Eastbound Jasmine Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
6:45 PM	0	1	0	0	0	0	0	1	0	0	0	1	3
TOTAL VOLUMES:	0	1	0	0	1	0	0	1	0	0	0	2	5

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

City of Victorville
Bear Valley Road
B/ Hesperia Road - Bornite Avenue
24 Hour Directional Volume Count

VICBVHEBO
Site Code: 232-23811

Start Time	9/7/23 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		60	577			58	355				
12:15		66	541			60	305				
12:30		73	558			44	**352**				
12:45		40	564	239	2240	36	**320**	198	1332	437	3572
01:00		41	558			43	**348**				
01:15		43	527			36	**315**				
01:30		17	602			44	314				
01:45		40	678	141	2365	52	307	175	1284	316	3649
02:00		40	533			51	305				
02:15		40	606			50	326				
02:30		27	635			51	348				
02:45		36	608	143	2382	60	296	212	1275	355	3657
03:00		51	578			72	348				
03:15		38	**701**			77	300				
03:30		63	**693**			88	346				
03:45		57	**642**	209	2614	121	336	358	1330	567	3944
04:00		42	**686**			115	342				
04:15		51	633			124	306				
04:30		69	608			185	335				
04:45		91	615	253	2542	144	308	568	1291	821	3833
05:00		92	661			117	333				
05:15		133	589			113	317				
05:30		171	628			152	342				
05:45		180	512	576	2390	157	293	539	1285	1115	3675
06:00		138	496			172	271				
06:15		213	437			160	260				
06:30		202	432			234	253				
06:45		211	453	764	1818	214	235	780	1019	1544	2837
07:00		278	428			216	270				
07:15		366	456			225	222				
07:30		574	388			205	214				
07:45		613	347	1831	1619	296	240	942	946	2773	2565
08:00		446	393			292	198				
08:15		446	328			289	211				
08:30		448	375			303	210				
08:45		486	296	1826	1392	305	199	1189	818	3015	2210
09:00		553	301			311	176				
09:15		517	181			336	161				
09:30		470	174			329	153				
09:45		448	200	1988	856	337	123	1313	613	3301	1469
10:00		536	171			333	114				
10:15		438	126			324	106				
10:30		460	154			338	73				
10:45		615	98	2049	549	328	82	1323	375	3372	924
11:00		**488**	120			**334**	69				
11:15		**520**	104			**319**	65				
11:30		**541**	98			**357**	63				
11:45		**679**	72	2228	394	**351**	61	1361	258	3589	652
Total		12247	21161	12247	21161	8958	11826	8958	11826	21205	32987
Combined Total		33408		33408		20784		20784		54192	
AM Peak	-	11:00	-	-	-	11:00	-	-	-	-	-
Vol.	-	2228	-	-	-	1361	-	-	-	-	-
P.H.F.		0.820				0.953					
PM Peak	-	-	03:15	-	-	-	00:30	-	-	-	-
Vol.	-	-	2722	-	-	-	1335	-	-	-	-
P.H.F.			0.971				0.948				
Percentage		36.7%	63.3%			43.1%	56.9%				
ADT/AADT		ADT 54,192		AADT 54,192							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Driveway
E/W: Bear Valley Road
Weather: Clear

File Name : VIC_DW_BV AM
Site Code : 231025
Start Date : 10/26/2023
Page No : 1

Groups Printed- Total Volume

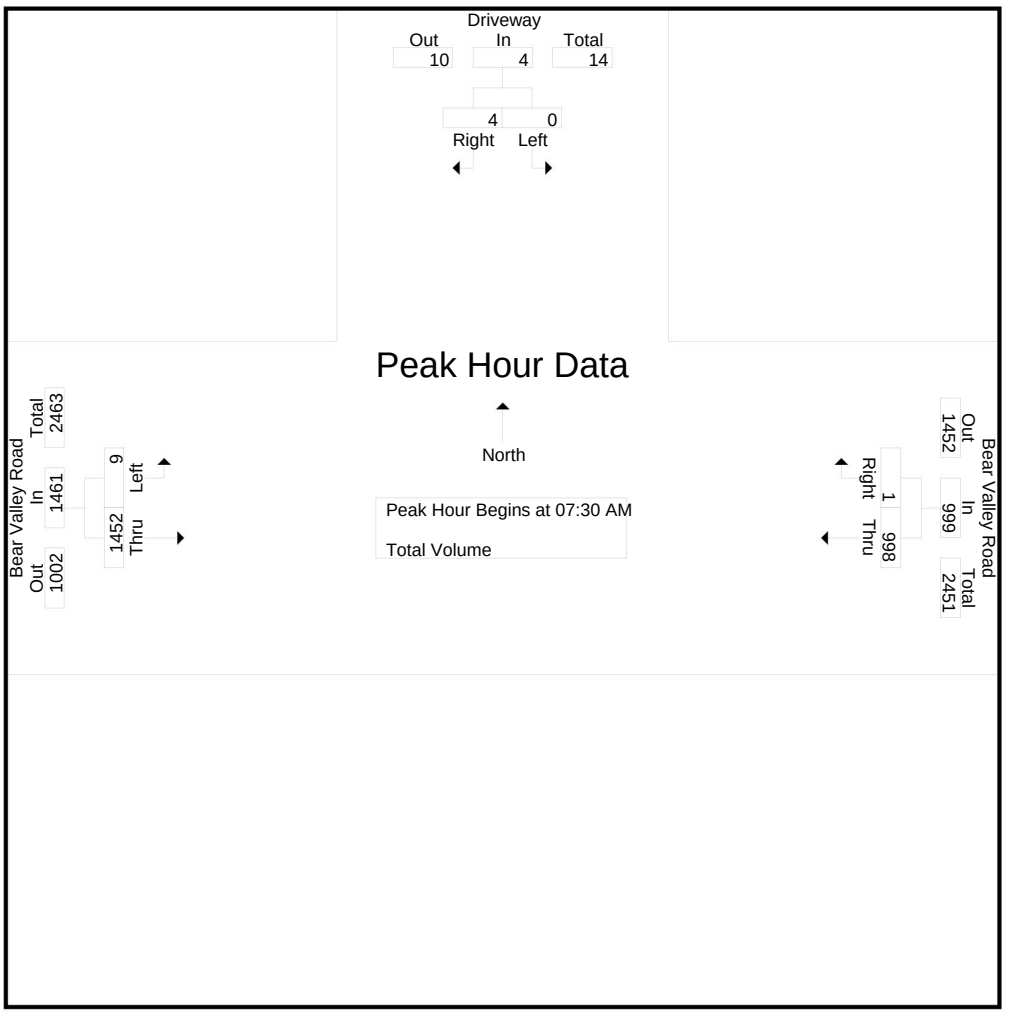
	Driveway Southbound			Bear Valley Road Westbound			Bear Valley Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
06:00 AM	0	0	0	126	0	126	1	119	120	246
06:15 AM	1	0	1	137	0	137	0	126	126	264
06:30 AM	0	0	0	177	1	178	0	162	162	340
06:45 AM	0	0	0	231	0	231	0	158	158	389
Total	1	0	1	671	1	672	1	565	566	1239
07:00 AM	0	1	1	167	0	167	3	201	204	372
07:15 AM	0	2	2	193	0	193	5	207	212	407
07:30 AM	0	1	1	231	0	231	2	377	379	611
07:45 AM	0	0	0	258	0	258	5	399	404	662
Total	0	4	4	849	0	849	15	1184	1199	2052
08:00 AM	0	2	2	238	0	238	1	311	312	552
08:15 AM	0	1	1	271	1	272	1	365	366	639
08:30 AM	0	4	4	278	0	278	9	316	325	607
08:45 AM	0	4	4	280	1	281	5	365	370	655
Total	0	11	11	1067	2	1069	16	1357	1373	2453
Grand Total	1	15	16	2587	3	2590	32	3106	3138	5744
Apprch %	6.2	93.8		99.9	0.1		1	99		
Total %	0	0.3	0.3	45	0.1	45.1	0.6	54.1	54.6	

	Driveway Southbound			Bear Valley Road Westbound			Bear Valley Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	0	1	1	231	0	231	2	377	379	611
07:45 AM	0	0	0	258	0	258	**5**	**399**	**404**	**662**
08:00 AM	0	**2**	**2**	238	0	238	1	311	312	552
08:15 AM	0	1	1	**271**	**1**	**272**	1	365	366	639
Total Volume	0	4	4	998	1	999	9	1452	1461	2464
% App. Total	0	100		99.9	0.1		0.6	99.4		
PHF	.000	.500	.500	.921	.250	.918	.450	.910	.904	.931

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Driveway
E/W: Bear Valley Road
Weather: Clear

File Name : VIC_DW_BV AM
Site Code : 231025
Start Date : 10/26/2023
Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			07:30 AM		
+0 mins.	0	2	2	238	0	238	2	377	379
+15 mins.	0	1	1	271	**1**	272	**5**	**399**	**404**
+30 mins.	0	**4**	**4**	278	0	278	1	311	312
+45 mins.	0	4	4	**280**	1	**281**	1	365	366
Total Volume	0	11	11	1067	2	1069	9	1452	1461
% App. Total	0	100		99.8	0.2		0.6	99.4	
PHF	.000	.688	.688	.953	.500	.951	.450	.910	.904

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Driveway
E/W: Bear Valley Road
Weather: Clear

File Name : VIC_DW_BV PM
Site Code : 231025
Start Date : 10/26/2023
Page No : 1

Groups Printed- Total Volume

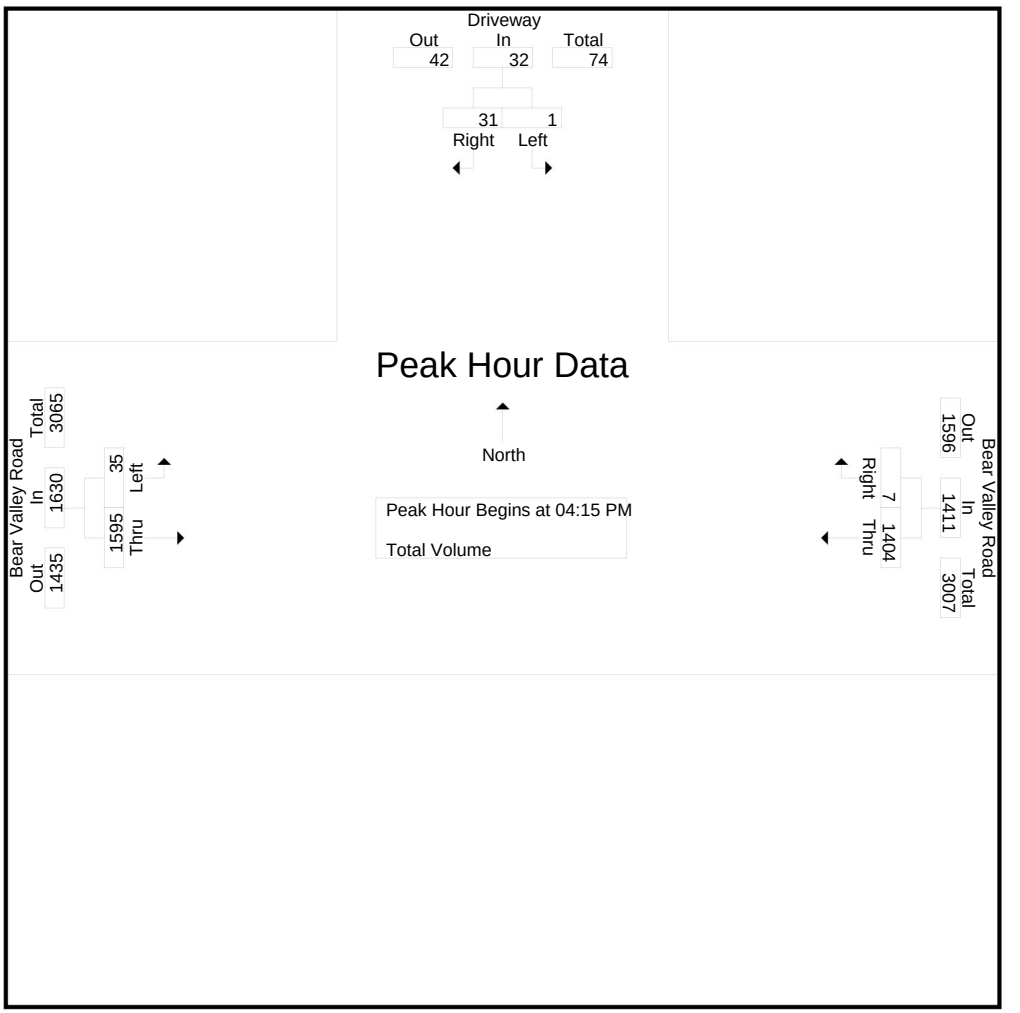
	Driveway Southbound			Bear Valley Road Westbound			Bear Valley Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
03:00 PM	0	4	4	344	0	344	7	332	339	687
03:15 PM	0	6	6	351	1	352	10	385	395	753
03:30 PM	0	7	7	329	0	329	8	388	396	732
03:45 PM	0	6	6	331	0	331	9	407	416	753
Total	0	23	23	1355	1	1356	34	1512	1546	2925
04:00 PM	1	4	5	326	2	328	7	411	418	751
04:15 PM	0	10	10	334	2	336	9	373	382	728
04:30 PM	0	10	10	357	1	358	8	408	416	784
04:45 PM	0	6	6	316	0	316	11	410	421	743
Total	1	30	31	1333	5	1338	35	1602	1637	3006
05:00 PM	1	5	6	397	4	401	7	404	411	818
05:15 PM	0	5	5	348	1	349	4	364	368	722
05:30 PM	0	4	4	329	1	330	10	378	388	722
05:45 PM	1	7	8	286	1	287	12	339	351	646
Total	2	21	23	1360	7	1367	33	1485	1518	2908
06:00 PM	0	7	7	268	1	269	14	334	348	624
06:15 PM	0	2	2	312	2	314	3	381	384	700
06:30 PM	0	7	7	304	0	304	4	315	319	630
06:45 PM	0	2	2	295	1	296	9	284	293	591
Total	0	18	18	1179	4	1183	30	1314	1344	2545
Grand Total	3	92	95	5227	17	5244	132	5913	6045	11384
Apprch %	3.2	96.8		99.7	0.3		2.2	97.8		
Total %	0	0.8	0.8	45.9	0.1	46.1	1.2	51.9	53.1	

	Driveway Southbound			Bear Valley Road Westbound			Bear Valley Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	**10**	**10**	334	2	336	9	373	382	728
04:30 PM	0	10	10	357	1	358	8	408	416	784
04:45 PM	0	6	6	316	0	316	**11**	**410**	**421**	743
05:00 PM	**1**	5	6	**397**	**4**	**401**	7	404	411	**818**
Total Volume	1	31	32	1404	7	1411	35	1595	1630	3073
% App. Total	3.1	96.9		99.5	0.5		2.1	97.9		
PHF	.250	.775	.800	.884	.438	.880	.795	.973	.968	.939

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Victorville
N/S: Driveway
E/W: Bear Valley Road
Weather: Clear

File Name : VIC_DW_BV PM
Site Code : 231025
Start Date : 10/26/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM			04:30 PM			04:00 PM		
+0 mins.	0	**10**	**10**	357	1	358	7	**411**	418
+15 mins.	0	10	10	316	0	316	9	373	382
+30 mins.	0	6	6	**397**	**4**	**401**	8	408	416
+45 mins.	**1**	5	6	348	1	349	**11**	410	**421**
Total Volume	1	31	32	1418	6	1424	35	1602	1637
% App. Total	3.1	96.9		99.6	0.4		2.1	97.9	
PHF	.250	.775	.800	.893	.375	.888	.795	.974	.972

Location: Victorville
N/S: Driveway
E/W: Bear Valley Road

Date: 10/26/2023
Day: Thursday

PEDESTRIANS

	North Leg Driveway Pedestrians	East Leg Bear Valley Road Pedestrians	South Leg Dead End Pedestrians	West Leg Bear Valley Road Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	1	0	0	0	1
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	1	0	0	0	1
8:00 AM	0	0	0	0	0
8:15 AM	1	0	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	2	0	0	0	2
TOTAL VOLUMES:	5	0	0	0	5

	North Leg Driveway Pedestrians	East Leg Bear Valley Road Pedestrians	South Leg Dead End Pedestrians	West Leg Bear Valley Road Pedestrians	
3:00 PM	2	0	0	0	2
3:15 PM	1	0	0	0	1
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	2	0	0	0	2
5:15 PM	1	0	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	2	0	0	0	2
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	1	1
TOTAL VOLUMES:	8	0	0	1	9

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Victorville
N/S: Driveway
E/W: Bear Valley Road

Date: 10/26/2023
Day: Thursday

BICYCLES

	Southbound Driveway			Westbound Bear Valley Road			Northbound Dead End			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound Driveway			Westbound Bear Valley Road			Northbound Dead End			Eastbound Bear Valley Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	0	0	0	1	0	0	0	0	0	2	0	4

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

City of Victorville

Radar Speed Survey

Speed	EB	WB	MPH	Vehicles Surveyed — Eastbound / Westbound	TOT. VEH.	PACE
65	0	0	65		0	
64	0	0	64		0	
63	0	0	63		0	
62	0	0	62		0	
61	0	0	61		0	
60	0	0	60		0	
59	0	0	59		0	
58	1	0	58	X	1	
57	1	0	57	X	1	
56	2	1	56	X X / X	3	
55	1	0	55	X	1	
54	1	3	54	X / X X X	4	
53	2	2	53	X X / X X	4	
52	2	2	52	X X / X X	4	*
51	2	6	51	X X / X X X X X X	8	*
50	1	2	50	X / X X	3	*
49	6	4	49	X X X X X X / X X X X	10	P
48	4	2	48	X X X X / X X	6	A
47	3	7	47	X X X / X X X X X X X	10	C
46	1	5	46	X / X X X X X	6	E
45	3	4	45	X X X / X X X X	7	*
44	2	3	44	X X / X X X	5	*
43	3	4	43	X X X / X X X X	7	*
42	3	1	42	X X X / X	4	
41	2	2	41	X X / X X	4	
40	1	0	40	X	1	
39	1	2	39	X / X X	3	
38	2	0	38	X X	2	
37	2	0	37	X X	2	
36	2	0	36	X X	2	
35	1	0	35	X	1	
34	1	0	34	X	1	
33	0	0	33		0	
32	0	0	32		0	
31	0	0	31		0	
30	0	0	30		0	
29	0	0	29		0	
28	0	0	28		0	
27	0	0	27		0	
26	0	0	26		0	
25	0	0	25		0	
24	0	0	24		0	
23	0	0	23		0	
22	0	0	22		0	
21	0	0	21		0	
20	0	0	20		0	
19	0	0	19		0	
18	0	0	18		0	
17	0	0	17		0	
16	0	0	16		0	
15	0	0	15		0	
Total	50	50		GRAND TOTALS	100	

Location: Bear Valley Road

Between: Hesperia Road - Bornite Avenue

Weather: Clear

Date: 9/12/23

Time From: 9:00

Time To: 9:20

Existing Speed Limit: 50 MPH

	Eastbound	Westbound	Combined Statistics
% Over Pace:	20%	12%	14%
% In Pace:	56%	78%	66%
% Under Pace:	24%	10%	20%
Average Speed:	46 MPH	47 MPH	47 MPH
Pace Speed:	42 - 51 MPH	43 - 52 MPH	43 - 52 MPH
15th Percentile / Critical Speed:	38 MPH	43 MPH	41 MPH
50th Percentile / Critical Speed:	47 MPH	47 MPH	47 MPH
85th Percentile / Critical Speed:	53 MPH	52 MPH	52 MPH

Radar Survey Conducted By:

Counts Unlimited, Inc.

PO Box 1178

Corona, CA 92880

T 951-268-6268 F 951-268-6267

Appendix C: Existing Intersection LOS Analysis Worksheets

1: 2nd Ave & Bear Valley Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	141	1629	7	992	46	65	46	21	101
v/c Ratio	0.62	0.46	0.07	0.37	0.05	0.44	0.40	0.09	0.22
Control Delay	51.3	8.9	33.0	7.4	0.1	41.1	55.5	34.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	8.9	33.0	7.4	0.1	41.1	55.5	34.4	7.1
Queue Length 50th (ft)	85	163	5	72	0	28	28	13	11
Queue Length 95th (ft)	141	275	m11	71	m1	69	#81	30	35
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	242	3524	98	2661	887	529	116	773	463
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.46	0.07	0.37	0.05	0.12	0.40	0.03	0.22

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	1456	10	6	893	41	14	27	17	41	19	91
Future Volume (veh/h)	127	1456	10	6	893	41	14	27	17	41	19	91
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	141	1618	11	7	992	46	16	30	19	46	21	101
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	1768	12	573	2986	927	61	43	24	58	247	368
Arrive On Green	0.10	0.35	0.35	0.35	0.61	0.61	0.05	0.05	0.05	0.04	0.14	0.14
Sat Flow, veh/h	1622	5040	34	1622	4918	1527	296	821	461	1622	1801	1527
Grp Volume(v), veh/h	141	1053	576	7	992	46	65	0	0	46	21	101
Grp Sat Flow(s),veh/h/ln	1622	1639	1795	1622	1639	1527	1578	0	0	1622	1801	1527
Q Serve(g_s), s	8.5	30.7	30.7	0.3	9.9	1.2	2.9	0.0	0.0	2.8	1.0	5.4
Cycle Q Clear(g_c), s	8.5	30.7	30.7	0.3	9.9	1.2	4.0	0.0	0.0	2.8	1.0	5.4
Prop In Lane	1.00		0.02	1.00		1.00	0.25		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	168	1150	630	573	2986	927	128	0	0	58	247	368
V/C Ratio(X)	0.84	0.91	0.91	0.01	0.33	0.05	0.51	0.00	0.00	0.79	0.09	0.27
Avail Cap(c_a), veh/h	203	1174	643	573	2986	927	555	0	0	83	776	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	31.0	31.0	21.0	9.7	8.0	46.7	0.0	0.0	47.8	37.7	30.9
Incr Delay (d2), s/veh	22.1	12.6	20.1	0.0	0.1	0.0	3.1	0.0	0.0	26.9	0.1	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	4.3	13.1	15.6	0.1	3.0	0.4	1.7	0.0	0.0	1.5	0.4	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.1	43.7	51.2	21.0	9.7	8.0	49.8	0.0	0.0	74.7	37.8	31.3
LnGrp LOS	E	D	D	C	A	A	D	A	A	E	D	C
Approach Vol, veh/h		1770			1045			65			168	
Approach Delay, s/veh		47.9			9.7			49.8			44.0	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.5	40.3		19.2	14.9	65.9	8.4	10.8
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	6.1	* 36		* 43	12.5	29.4	* 5.1	* 33
Max Q Clear Time (g_c+I1), s	2.3	32.7		7.4	10.5	11.9	4.8	6.0
Green Ext Time (p_c), s	0.0	2.4		0.4	0.1	6.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

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

2: Bornite Ave/Hospital Drwy 1 & Bear Valley Rd

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	1483	14	9	977	47	1	0	15	1	0	10
Future Vol, veh/h	31	1483	14	9	977	47	1	0	15	1	0	10
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	100	-	-	225	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	1648	16	10	1086	52	1	0	17	1	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1138	0	0	1664	0	0	2178	2882	832	1859	2864	569
Stage 1	-	-	-	-	-	-	1724	1724	-	1132	1132	-
Stage 2	-	-	-	-	-	-	454	1158	-	727	1732	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	336	-	-	185	-	-	49	16	268	78	16	399
Stage 1	-	-	-	-	-	-	61	142	-	161	276	-
Stage 2	-	-	-	-	-	-	508	269	-	347	141	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	336	-	-	185	-	-	42	14	268	65	14	399
Mov Cap-2 Maneuver	-	-	-	-	-	-	42	14	-	65	14	-
Stage 1	-	-	-	-	-	-	55	128	-	145	261	-
Stage 2	-	-	-	-	-	-	467	254	-	292	127	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	24.6	18.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	336	-	-	185	-	-	272
HCM Lane V/C Ratio	0.088	0.103	-	-	0.054	-	-	0.045
HCM Control Delay (s)	24.6	16.9	-	-	25.6	-	-	18.9
HCM Lane LOS	C	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.2	-	-	0.1

4: Bear Valley Rd & 1st Ave

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1490	1029	1	0	4
Future Vol, veh/h	9	1490	1029	1	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	1602	1106	1	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1107	0	-	0	1768	554
Stage 1	-	-	-	-	1107	-
Stage 2	-	-	-	-	661	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	347	-	-	-	125	408
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	433	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	347	-	-	-	121	408
Mov Cap-2 Maneuver	-	-	-	-	169	-
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	433	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	347	-	-	-	408
HCM Lane V/C Ratio	0.028	-	-	-	0.011
HCM Control Delay (s)	15.7	-	-	-	13.9
HCM Lane LOS	C	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0

5: Hesperia Rd & Bear Valley Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	214	1164	122	248	840	100	119	567	345	186	485
v/c Ratio	0.64	0.65	0.14	0.84	0.48	0.12	0.32	0.80	0.64	0.55	0.74
Control Delay	49.9	41.6	13.1	69.7	26.1	3.9	44.0	48.7	14.2	47.4	42.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	41.6	13.1	69.7	26.1	3.9	44.0	48.7	14.2	47.4	42.1
Queue Length 50th (ft)	72	283	25	81	150	6	36	182	32	58	144
Queue Length 95th (ft)	115	339	90	#148	189	28	68	#301	131	90	186
Internal Link Dist (ft)		807			1732			606			1362
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	335	1797	884	294	1748	961	375	705	540	589	846
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.65	0.14	0.84	0.48	0.10	0.32	0.80	0.64	0.32	0.57

Intersection Summary

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

5: Hesperia Rd & Bear Valley Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	1094	115	233	790	94	112	533	324	175	358	98
Future Volume (veh/h)	201	1094	115	233	790	94	112	533	324	175	358	98
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	1605	1801	1801	1605	1801	1801	1605	1801	1801	1605	1801	1801
Adj Flow Rate, veh/h	214	1164	122	248	840	100	119	567	345	186	381	104
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	1805	648	519	2140	794	171	547	244	252	470	127
Arrive On Green	0.04	0.12	0.12	0.18	0.44	0.44	0.06	0.16	0.16	0.08	0.18	0.18
Sat Flow, veh/h	2965	4918	1527	2965	4918	1527	2965	3423	1527	2965	2665	719
Grp Volume(v), veh/h	214	1164	122	248	840	100	119	567	345	186	243	242
Grp Sat Flow(s),veh/h/ln	1482	1639	1527	1482	1639	1527	1482	1711	1527	1482	1711	1672
Q Serve(g_s), s	7.1	22.6	1.3	7.5	11.6	3.4	3.9	16.0	10.6	6.1	13.6	13.9
Cycle Q Clear(g_c), s	7.1	22.6	1.3	7.5	11.6	3.4	3.9	16.0	10.6	6.1	13.6	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	338	1805	648	519	2140	794	171	547	244	252	302	295
V/C Ratio(X)	0.63	0.64	0.19	0.48	0.39	0.13	0.70	1.04	1.41	0.74	0.81	0.82
Avail Cap(c_a), veh/h	338	1805	648	519	2140	794	208	547	244	593	426	416
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	46.1	37.7	25.9	37.1	19.2	12.3	46.3	42.0	18.3	44.7	39.5	39.7
Incr Delay (d2), s/veh	8.7	1.8	0.6	3.1	0.5	0.3	7.6	48.2	208.6	3.9	7.0	8.1
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	3.0	10.0	2.4	2.8	4.1	1.1	1.6	10.0	17.5	2.3	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	39.5	26.5	40.2	19.8	12.6	53.9	90.2	227.0	48.6	46.5	47.8
LnGrp LOS	D	D	C	D	B	B	D	F	F	D	D	D
Approach Vol, veh/h		1500			1188			1031			671	
Approach Delay, s/veh		40.6			23.4			131.8			47.5	
Approach LOS		D			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	42.0	11.5	23.7	16.0	48.8	13.5	21.7
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	9.5	24.6	5.9	15.9	9.1	13.6	8.1	18.0
Green Ext Time (p_c), s	0.0	2.4	0.0	1.7	0.1	1.8	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	58.4
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

6: 1st Ave & Jasmine St

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	183	1	0	99	31	0	2	1	90	1	26
Future Vol, veh/h	25	183	1	0	99	31	0	2	1	90	1	26
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	223	1	0	121	38	0	2	1	110	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	159	0	0	224	0	0	345	443	112	313	424	80
Stage 1	-	-	-	-	-	-	284	284	-	140	140	-
Stage 2	-	-	-	-	-	-	61	159	-	173	284	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1418	-	-	1342	-	-	585	508	920	616	520	964
Stage 1	-	-	-	-	-	-	699	675	-	849	780	-
Stage 2	-	-	-	-	-	-	943	765	-	812	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1418	-	-	1342	-	-	555	496	920	602	508	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	555	496	-	602	508	-
Stage 1	-	-	-	-	-	-	682	659	-	829	780	-
Stage 2	-	-	-	-	-	-	911	765	-	789	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	11.2	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	586	1418	-	-	1342	-	-	656
HCM Lane V/C Ratio	0.006	0.022	-	-	-	-	-	0.218
HCM Control Delay (s)	11.2	7.6	0.1	-	0	-	-	12
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.8

7: Hesperia Rd & Jasmine St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	208	38	120	76	767	104	716
v/c Ratio	0.27	0.53	0.28	0.35	0.45	0.41	0.68	0.38
Control Delay	43.0	25.2	43.1	25.6	45.2	14.8	62.8	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	25.2	43.1	25.6	45.2	14.8	62.8	15.1
Queue Length 50th (ft)	20	31	21	20	41	144	58	131
Queue Length 95th (ft)	49	63	50	45	81	222	#131	219
Internal Link Dist (ft)		962		1302		1362		1054
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	293	639	293	598	180	1873	159	1874
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.33	0.13	0.20	0.42	0.41	0.65	0.38

Intersection Summary

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

7: Hesperia Rd & Jasmine St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	104	91	36	67	46	71	631	90	98	618	55
Future Volume (veh/h)	35	104	91	36	67	46	71	631	90	98	618	55
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	37	111	97	38	71	49	76	671	96	104	657	59
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	169	135	55	201	127	95	902	129	523	1833	164
Arrive On Green	0.03	0.09	0.09	0.03	0.10	0.10	0.06	0.30	0.30	0.32	0.58	0.58
Sat Flow, veh/h	1622	1807	1446	1622	2011	1273	1622	3006	430	1622	3177	285
Grp Volume(v), veh/h	37	105	103	38	59	61	76	382	385	104	354	362
Grp Sat Flow(s),veh/h/ln	1622	1711	1541	1622	1711	1572	1622	1711	1724	1622	1711	1750
Q Serve(g_s), s	2.0	5.3	5.9	2.1	2.9	3.2	4.2	18.1	18.1	4.2	9.9	9.9
Cycle Q Clear(g_c), s	2.0	5.3	5.9	2.1	2.9	3.2	4.2	18.1	18.1	4.2	9.9	9.9
Prop In Lane	1.00		0.94	1.00		0.81	1.00		0.25	1.00		0.16
Lane Grp Cap(c), veh/h	54	160	144	55	171	157	95	513	517	523	988	1010
V/C Ratio(X)	0.68	0.65	0.72	0.69	0.35	0.39	0.80	0.74	0.74	0.20	0.36	0.36
Avail Cap(c_a), veh/h	296	302	272	296	299	274	148	513	517	523	988	1010
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	0.67	0.67	0.67	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	39.4	39.6	43.0	37.8	37.9	41.9	28.4	28.4	22.1	10.1	10.1
Incr Delay (d2), s/veh	13.9	4.4	6.5	14.1	1.2	1.5	10.9	6.4	6.4	0.2	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.3	2.4	1.0	1.2	1.3	1.9	7.6	7.7	1.5	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	43.8	46.1	57.1	39.0	39.5	52.8	34.8	34.8	22.3	11.2	11.1
LnGrp LOS	E	D	D	E	D	D	D	C	C	C	B	B
Approach Vol, veh/h		245			158			843			820	
Approach Delay, s/veh		46.7			43.5			36.5			12.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.1	33.0	8.4	13.5	10.1	58.0	7.6	14.3
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 27	* 16	* 16	* 8.2	* 29	16.4	15.7
Max Q Clear Time (g_c+I1), s	6.2	20.1	4.1	7.9	6.2	11.9	4.0	5.2
Green Ext Time (p_c), s	0.0	2.4	0.0	0.6	0.0	3.6	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

1: 2nd Ave & Bear Valley Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	88	1744	24	1487	47	77	66	40	148
v/c Ratio	0.50	0.51	0.23	0.52	0.05	0.49	0.66	0.15	0.32
Control Delay	50.8	10.5	31.0	8.2	0.1	38.7	77.6	34.6	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	10.5	31.0	8.2	0.1	38.7	77.6	34.6	12.2
Queue Length 50th (ft)	54	159	13	74	0	29	42	21	29
Queue Length 95th (ft)	99	318	m19	142	m1	73	#119	48	63
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	182	3442	112	2863	945	516	100	775	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.51	0.21	0.52	0.05	0.15	0.66	0.05	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

1: 2nd Ave & Bear Valley Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	1634	23	23	1413	45	22	24	28	63	38	141
Future Volume (veh/h)	84	1634	23	23	1413	45	22	24	28	63	38	141
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	88	1720	24	24	1487	47	23	25	29	66	40	148
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	1739	24	66	1614	501	69	39	37	82	295	352
Arrive On Green	0.07	0.35	0.35	0.04	0.33	0.33	0.06	0.06	0.06	0.05	0.16	0.16
Sat Flow, veh/h	1622	4998	70	1622	4918	1527	342	597	567	1622	1801	1527
Grp Volume(v), veh/h	88	1128	616	24	1487	47	77	0	0	66	40	148
Grp Sat Flow(s),veh/h/ln	1622	1639	1789	1622	1639	1527	1506	0	0	1622	1801	1527
Q Serve(g_s), s	5.4	34.2	34.2	1.4	29.1	2.1	3.6	0.0	0.0	4.0	1.9	8.3
Cycle Q Clear(g_c), s	5.4	34.2	34.2	1.4	29.1	2.1	5.0	0.0	0.0	4.0	1.9	8.3
Prop In Lane	1.00		0.04	1.00		1.00	0.30		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	109	1141	623	66	1614	501	145	0	0	82	295	352
V/C Ratio(X)	0.81	0.99	0.99	0.37	0.92	0.09	0.53	0.00	0.00	0.80	0.14	0.42
Avail Cap(c_a), veh/h	138	1141	623	114	1638	508	531	0	0	84	778	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	32.4	32.4	46.7	32.4	23.3	46.0	0.0	0.0	47.0	35.8	32.8
Incr Delay (d2), s/veh	23.4	23.9	33.2	3.4	10.2	0.4	3.0	0.0	0.0	40.5	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	16.1	19.2	0.6	12.1	0.8	2.0	0.0	0.0	2.5	0.8	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	56.3	65.6	50.1	42.5	23.7	49.0	0.0	0.0	87.5	36.0	33.5
LnGrp LOS	E	E	E	D	D	C	D	A	A	F	D	C
Approach Vol, veh/h		1832			1558			77			254	
Approach Delay, s/veh		60.0			42.1			49.0			48.0	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	40.0		21.9	11.2	38.0	9.9	12.0				
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5				
Max Green Setting (Gmax), s	7.0	* 35		* 43	8.5	33.3	* 5.2	* 33				
Max Q Clear Time (g_c+I1), s	3.4	36.2		10.3	7.4	31.1	6.0	7.0				
Green Ext Time (p_c), s	0.0	0.0		0.6	0.0	1.7	0.0	0.4				

Intersection Summary			
HCM 6th Ctrl Delay		51.5	
HCM 6th LOS		D	

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1726	13	19	1459	17	0	0	24	11	0	38
Future Vol, veh/h	4	1726	13	19	1459	17	0	0	24	11	0	38
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	100	-	-	225	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1798	14	20	1520	18	0	0	25	11	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1538	0	0	1812	0	0	2461	3391	906	2296	3389	769
Stage 1	-	-	-	-	-	-	1813	1813	-	1569	1569	-
Stage 2	-	-	-	-	-	-	648	1578	-	727	1820	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	213	-	-	156	-	-	33	7	240	41	7	295
Stage 1	-	-	-	-	-	-	53	128	-	79	170	-
Stage 2	-	-	-	-	-	-	387	168	-	347	127	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	213	-	-	156	-	-	25	6	240	33	6	295
Mov Cap-2 Maneuver	-	-	-	-	-	-	25	6	-	33	6	-
Stage 1	-	-	-	-	-	-	52	126	-	77	148	-
Stage 2	-	-	-	-	-	-	292	146	-	305	125	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	21.7	67.1
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	240	213	-	-	156	-	-	106
HCM Lane V/C Ratio	0.104	0.02	-	-	0.127	-	-	0.482
HCM Control Delay (s)	21.7	22.2	-	-	31.4	-	-	67.1
HCM Lane LOS	C	C	-	-	D	-	-	F
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.4	-	-	2.1

4: Bear Valley Rd & 1st Ave

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	1726	1464	7	1	31
Future Vol, veh/h	35	1726	1464	7	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	1836	1557	7	1	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1564	0	-	0	2369	782
Stage 1	-	-	-	-	1561	-
Stage 2	-	-	-	-	808	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	207	-	-	-	59	289
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	362	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	207	-	-	-	48	289
Mov Cap-2 Maneuver	-	-	-	-	77	-
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	362	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	20.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	207	-	-	-	266
HCM Lane V/C Ratio	0.18	-	-	-	0.128
HCM Control Delay (s)	26.2	-	-	-	20.5
HCM Lane LOS	D	-	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	0.4

5: Hesperia Rd & Bear Valley Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	171	1376	144	340	1206	131	149	410	363	250	663
v/c Ratio	0.46	0.74	0.18	1.16	0.69	0.15	0.67	0.69	0.78	0.62	0.84
Control Delay	48.9	41.9	17.9	143.0	29.9	3.5	61.2	46.3	26.7	47.1	45.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	41.9	17.9	143.0	29.9	3.5	61.2	46.3	26.7	47.1	45.2
Queue Length 50th (ft)	57	285	35	~132	237	8	48	128	69	78	198
Queue Length 95th (ft)	m92	376	m116	#222	289	32	#95	#212	#233	113	266
Internal Link Dist (ft)		810			1732			593			1360
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	369	1853	812	294	1748	969	222	594	466	589	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.74	0.18	1.16	0.69	0.14	0.67	0.69	0.78	0.42	0.78

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

5: Hesperia Rd & Bear Valley Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	1348	141	333	1182	128	146	402	356	245	513	137
Future Volume (veh/h)	168	1348	141	333	1182	128	146	402	356	245	513	137
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	1605	1801	1801	1605	1801	1801	1605	1801	1801	1605	1801	1801
Adj Flow Rate, veh/h	171	1376	144	340	1206	131	149	410	363	250	523	140
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	1805	664	348	1856	740	202	668	298	319	597	159
Arrive On Green	0.11	0.37	0.37	0.12	0.38	0.38	0.07	0.20	0.20	0.11	0.22	0.22
Sat Flow, veh/h	2965	4918	1527	2965	4918	1527	2965	3423	1527	2965	2673	712
Grp Volume(v), veh/h	171	1376	144	340	1206	131	149	410	363	250	334	329
Grp Sat Flow(s),veh/h/ln	1482	1639	1527	1482	1639	1527	1482	1711	1527	1482	1711	1673
Q Serve(g_s), s	5.4	24.6	0.0	11.4	20.2	4.8	4.9	11.0	14.0	8.2	18.8	19.0
Cycle Q Clear(g_c), s	5.4	24.6	0.0	11.4	20.2	4.8	4.9	11.0	14.0	8.2	18.8	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	338	1805	664	348	1856	740	202	668	298	319	382	374
V/C Ratio(X)	0.51	0.76	0.22	0.98	0.65	0.18	0.74	0.61	1.22	0.78	0.87	0.88
Avail Cap(c_a), veh/h	338	1805	664	348	1856	740	208	668	298	593	426	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	41.7	27.8	17.6	44.0	25.7	14.5	45.7	36.8	20.7	43.5	37.5	37.5
Incr Delay (d2), s/veh	5.3	3.1	0.7	42.8	1.8	0.5	12.6	1.7	125.0	3.5	14.1	15.2
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	2.1	9.3	2.0	6.0	7.5	1.6	2.1	4.5	14.9	3.0	8.9	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	30.9	18.4	86.8	27.5	15.0	58.3	38.5	145.7	47.0	51.6	52.7
LnGrp LOS	D	C	B	F	C	B	E	D	F	D	D	D
Approach Vol, veh/h		1691			1677			922			913	
Approach Delay, s/veh		31.5			38.5			83.9			50.7	
Approach LOS		C			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	42.0	12.5	28.4	16.0	43.0	15.8	25.2
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	13.4	26.6	6.9	21.0	7.4	22.2	10.2	16.0
Green Ext Time (p_c), s	0.0	2.8	0.0	1.3	0.2	2.6	0.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

6: 1st Ave & Jasmine St

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	115	1	0	195	26	2	3	1	51	0	21
Future Vol, veh/h	16	115	1	0	195	26	2	3	1	51	0	21
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	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	135	1	0	229	31	2	4	1	60	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	260	0	0	136	0	0	289	434	68	353	419	130
Stage 1	-	-	-	-	-	-	174	174	-	245	245	-
Stage 2	-	-	-	-	-	-	115	260	-	108	174	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1302	-	-	1446	-	-	641	514	981	577	524	896
Stage 1	-	-	-	-	-	-	811	754	-	737	702	-
Stage 2	-	-	-	-	-	-	877	692	-	886	754	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1302	-	-	1446	-	-	616	506	981	566	516	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	616	506	-	566	516	-
Stage 1	-	-	-	-	-	-	798	742	-	725	702	-
Stage 2	-	-	-	-	-	-	853	692	-	867	742	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	11.2	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	589	1302	-	-	1446	-	-	634
HCM Lane V/C Ratio	0.012	0.014	-	-	-	-	-	0.134
HCM Control Delay (s)	11.2	7.8	0	-	0	-	-	11.6
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.5

7: Hesperia Rd & Jasmine St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	150	67	238	94	782	49	980
v/c Ratio	0.38	0.44	0.37	0.57	0.54	0.42	0.35	0.56
Control Delay	44.3	21.5	41.6	23.4	50.4	15.8	45.4	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	21.5	41.6	23.4	50.4	15.8	45.4	19.4
Queue Length 50th (ft)	32	17	36	32	51	154	26	214
Queue Length 95th (ft)	67	45	73	65	#113	240	62	314
Internal Link Dist (ft)		969		1302		1360		1085
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	221	487	242	551	178	1867	159	1753
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.31	0.28	0.43	0.53	0.42	0.31	0.56

Intersection Summary

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

7: Hesperia Rd & Jasmine St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	57	83	62	104	117	87	672	55	46	868	44
Future Volume (veh/h)	54	57	83	62	104	117	87	672	55	46	868	44
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	58	61	89	67	112	126	94	723	59	49	933	47
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	137	122	106	182	163	117	1211	99	368	1810	91
Arrive On Green	0.04	0.08	0.08	0.07	0.11	0.11	0.07	0.38	0.38	0.23	0.55	0.55
Sat Flow, veh/h	1622	1711	1527	1622	1711	1527	1622	3204	261	1622	3316	167
Grp Volume(v), veh/h	58	61	89	67	112	126	94	386	396	49	482	498
Grp Sat Flow(s),veh/h/ln	1622	1711	1527	1622	1711	1527	1622	1711	1754	1622	1711	1771
Q Serve(g_s), s	3.2	3.1	5.1	3.6	5.6	7.2	5.1	16.3	16.3	2.2	16.0	16.0
Cycle Q Clear(g_c), s	3.2	3.1	5.1	3.6	5.6	7.2	5.1	16.3	16.3	2.2	16.0	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	72	137	122	106	182	163	117	647	663	368	934	967
V/C Ratio(X)	0.80	0.44	0.73	0.63	0.61	0.77	0.81	0.60	0.60	0.13	0.52	0.52
Avail Cap(c_a), veh/h	223	226	202	241	241	215	148	647	663	368	934	967
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	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	39.5	40.4	41.0	38.4	39.2	41.1	22.5	22.5	27.7	12.9	12.9
Incr Delay (d2), s/veh	18.2	2.2	8.0	6.1	3.3	11.9	18.8	3.4	3.3	0.2	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.3	2.1	1.6	2.4	3.1	2.5	6.5	6.6	0.8	5.6	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.8	41.7	48.4	47.1	41.8	51.0	59.9	25.9	25.8	27.9	14.9	14.9
LnGrp LOS	E	D	D	D	D	D	E	C	C	C	B	B
Approach Vol, veh/h		208			305			876			1029	
Approach Delay, s/veh		49.9			46.8			29.5			15.5	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.5	40.0	11.2	12.3	11.3	55.2	8.6	14.9
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 34	* 13	* 12	* 8.2	* 36	12.4	12.7
Max Q Clear Time (g_c+I1), s	4.2	18.3	5.6	7.1	7.1	18.0	5.2	9.2
Green Ext Time (p_c), s	0.0	3.8	0.1	0.3	0.0	5.3	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

Appendix D: Opening Year 2027 Intersection LOS Analysis Worksheets



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	150	1728	6	1056	50	72	50	22	106
v/c Ratio	0.62	0.49	0.06	0.40	0.06	0.46	0.45	0.10	0.23
Control Delay	50.8	9.1	32.6	7.2	0.2	40.6	59.4	34.9	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	9.1	32.6	7.2	0.2	40.6	59.4	34.9	7.5
Queue Length 50th (ft)	91	183	4	74	0	31	31	14	14
Queue Length 95th (ft)	148	304	m9	75	m0	72	#89	31	37
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	250	3532	98	2636	880	532	110	773	465
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.49	0.06	0.40	0.06	0.14	0.45	0.03	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	1545	10	5	950	45	15	30	20	45	20	95
Future Volume (veh/h)	135	1545	10	5	950	45	15	30	20	45	20	95
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	150	1717	11	6	1056	50	17	33	22	50	22	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	1800	12	550	2920	907	61	48	28	62	261	388
Arrive On Green	0.11	0.36	0.36	0.34	0.59	0.59	0.06	0.06	0.06	0.04	0.14	0.14
Sat Flow, veh/h	1622	5042	32	1622	4918	1527	275	824	483	1622	1801	1527
Grp Volume(v), veh/h	150	1116	612	6	1056	50	72	0	0	50	22	106
Grp Sat Flow(s),veh/h/ln	1622	1639	1796	1622	1639	1527	1582	0	0	1622	1801	1527
Q Serve(g_s), s	9.1	33.2	33.2	0.2	11.1	1.4	3.0	0.0	0.0	3.1	1.1	5.6
Cycle Q Clear(g_c), s	9.1	33.2	33.2	0.2	11.1	1.4	4.5	0.0	0.0	3.1	1.1	5.6
Prop In Lane	1.00		0.02	1.00		1.00	0.24		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	178	1171	641	550	2920	907	137	0	0	62	261	388
V/C Ratio(X)	0.84	0.95	0.95	0.01	0.36	0.06	0.52	0.00	0.00	0.81	0.08	0.27
Avail Cap(c_a), veh/h	203	1174	643	550	2920	907	556	0	0	83	776	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	31.3	31.3	21.9	10.5	8.5	46.3	0.0	0.0	47.7	37.0	29.9
Incr Delay (d2), s/veh	24.2	17.3	25.8	0.0	0.1	0.0	3.1	0.0	0.0	34.1	0.1	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	4.7	14.7	17.6	0.1	3.4	0.4	1.9	0.0	0.0	1.8	0.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.9	48.6	57.2	21.9	10.6	8.6	49.4	0.0	0.0	81.8	37.2	30.3
LnGrp LOS	E	D	E	C	B	A	D	A	A	F	D	C
Approach Vol, veh/h		1878			1112			72			178	
Approach Delay, s/veh		52.9			10.6			49.4			45.6	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.1	40.9		20.0	15.5	64.6	8.6	11.4
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	6.1	* 36		* 43	12.5	29.4	* 5.1	* 33
Max Q Clear Time (g_c+I1), s	2.2	35.2		7.6	11.1	13.1	5.1	6.5
Green Ext Time (p_c), s	0.0	0.5		0.4	0.0	6.2	0.0	0.3

Intersection Summary		
HCM 6th Ctrl Delay		37.9
HCM 6th LOS		D

Notes

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	1575	15	10	1035	47	1	0	15	1	0	10
Future Vol, veh/h	31	1575	15	10	1035	47	1	0	15	1	0	10
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	100	-	-	225	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	1750	17	11	1150	52	1	0	17	1	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1202	0	0	1767	0	0	2309	3051	884	1966	3033	601
Stage 1	-	-	-	-	-	-	1827	1827	-	1198	1198	-
Stage 2	-	-	-	-	-	-	482	1224	-	768	1835	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	312	-	-	164	-	-	41	12	248	67	13	380
Stage 1	-	-	-	-	-	-	51	126	-	145	257	-
Stage 2	-	-	-	-	-	-	488	250	-	327	125	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	312	-	-	164	-	-	35	10	248	54	11	380
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	10	-	54	11	-
Stage 1	-	-	-	-	-	-	45	112	-	129	240	-
Stage 2	-	-	-	-	-	-	442	233	-	272	111	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	27.2	20.5
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	312	-	-	164	-	-	245
HCM Lane V/C Ratio	0.099	0.11	-	-	0.068	-	-	0.05
HCM Control Delay (s)	27.2	18	-	-	28.5	-	-	20.5
HCM Lane LOS	D	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1580	1090	1	0	4
Future Vol, veh/h	9	1580	1090	1	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	1699	1172	1	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1173	0	-	0	1873	587
Stage 1	-	-	-	-	1173	-
Stage 2	-	-	-	-	700	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	323	-	-	-	110	388
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	413	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	323	-	-	-	107	388
Mov Cap-2 Maneuver	-	-	-	-	153	-
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	413	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	323	-	-	-	388
HCM Lane V/C Ratio	0.03	-	-	-	0.011
HCM Control Delay (s)	16.5	-	-	-	14.4
HCM Lane LOS	C	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0

5: Hesperia Rd & Bear Valley Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	229	1234	128	261	894	106	128	601	367	197	516
v/c Ratio	0.68	0.69	0.15	0.89	0.51	0.13	0.37	0.87	0.70	0.56	0.75
Control Delay	50.7	42.9	14.7	75.9	26.6	4.0	45.8	54.0	18.4	47.3	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	42.9	14.7	75.9	26.6	4.0	45.8	54.0	18.4	47.3	42.0
Queue Length 50th (ft)	78	310	35	86	162	8	39	196	50	61	153
Queue Length 95th (ft)	#123	357	102	#158	203	30	#77	#333	#186	94	198
Internal Link Dist (ft)		807			1732			606			1362
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	335	1797	866	294	1748	961	349	692	528	589	846
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.69	0.15	0.89	0.51	0.11	0.37	0.87	0.70	0.33	0.61

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	1160	120	245	840	100	120	565	345	185	380	105
Future Volume (veh/h)	215	1160	120	245	840	100	120	565	345	185	380	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1605	1801	1801	1605	1801	1801	1605	1801	1801	1605	1801	1801
Adj Flow Rate, veh/h	229	1234	128	261	894	106	128	601	367	197	404	112
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	1805	653	483	2080	781	180	576	257	264	492	135
Arrive On Green	0.04	0.12	0.12	0.16	0.42	0.42	0.06	0.17	0.17	0.09	0.19	0.19
Sat Flow, veh/h	2965	4918	1527	2965	4918	1527	2965	3423	1527	2965	2654	728
Grp Volume(v), veh/h	229	1234	128	261	894	106	128	601	367	197	259	257
Grp Sat Flow(s),veh/h/ln	1482	1639	1527	1482	1639	1527	1482	1711	1527	1482	1711	1670
Q Serve(g_s), s	7.6	24.0	1.3	8.1	12.8	3.6	4.2	16.8	11.3	6.5	14.5	14.8
Cycle Q Clear(g_c), s	7.6	24.0	1.3	8.1	12.8	3.6	4.2	16.8	11.3	6.5	14.5	14.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	338	1805	653	483	2080	781	180	576	257	264	317	309
V/C Ratio(X)	0.68	0.68	0.20	0.54	0.43	0.14	0.71	1.04	1.43	0.75	0.82	0.83
Avail Cap(c_a), veh/h	338	1805	653	483	2080	781	208	576	257	593	426	416
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	46.3	38.4	25.7	38.4	20.3	12.8	46.1	41.6	18.8	44.5	39.1	39.2
Incr Delay (d2), s/veh	10.4	2.1	0.7	4.3	0.7	0.4	9.1	49.5	214.3	3.9	8.2	9.4
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	3.3	10.7	2.6	3.1	4.6	1.2	1.7	10.6	18.9	2.4	6.5	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	40.5	26.4	42.7	21.0	13.2	55.2	91.1	233.1	48.3	47.3	48.6
LnGrp LOS	E	D	C	D	C	B	E	F	F	D	D	D
Approach Vol, veh/h		1591			1261			1096			713	
Approach Delay, s/veh		41.7			24.8			134.5			48.0	
Approach LOS		D			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	42.0	11.8	24.6	16.0	47.6	13.9	22.5
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	10.1	26.0	6.2	16.8	9.6	14.8	8.5	18.8
Green Ext Time (p_c), s	0.0	2.5	0.0	1.7	0.1	2.0	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	59.9
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑↑↑			↑↑↑	
Traffic Vol, veh/h	25	195	1	0	105	35	0	2	1	95	1	30
Future Vol, veh/h	25	195	1	0	105	35	0	2	1	95	1	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	238	1	0	128	43	0	2	1	116	1	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	239	0	0	364	470	120	330	449	86
Stage 1	-	-	-	-	-	-	299	299	-	150	150	-
Stage 2	-	-	-	-	-	-	65	171	-	180	299	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1404	-	-	1325	-	-	567	490	909	599	504	956
Stage 1	-	-	-	-	-	-	685	665	-	837	772	-
Stage 2	-	-	-	-	-	-	938	756	-	804	665	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1325	-	-	534	478	909	585	491	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	534	478	-	585	491	-
Stage 1	-	-	-	-	-	-	668	648	-	816	772	-
Stage 2	-	-	-	-	-	-	901	756	-	780	648	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	11.4	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	568	1404	-	-	1325	-	-	643
HCM Lane V/C Ratio	0.006	0.022	-	-	-	-	-	0.239
HCM Control Delay (s)	11.4	7.6	0.1	-	0	-	-	12.3
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.9



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	218	43	127	80	814	112	761
v/c Ratio	0.27	0.54	0.30	0.35	0.45	0.47	0.70	0.41
Control Delay	43.0	25.3	43.3	24.7	45.0	16.3	64.1	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	25.3	43.3	24.7	45.0	16.3	64.1	16.1
Queue Length 50th (ft)	20	33	23	21	43	158	63	145
Queue Length 95th (ft)	49	66	54	45	84	243	#144	241
Internal Link Dist (ft)		962		1302		1362		1054
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	293	643	293	600	184	1746	159	1847
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.34	0.15	0.21	0.43	0.47	0.70	0.41

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	110	95	40	70	50	75	670	95	105	655	60
Future Volume (veh/h)	35	110	95	40	70	50	75	670	95	105	655	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	37	117	101	43	74	53	80	713	101	112	697	64
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	176	140	59	209	137	100	903	128	513	1801	165
Arrive On Green	0.03	0.10	0.10	0.04	0.11	0.11	0.06	0.30	0.30	0.32	0.57	0.57
Sat Flow, veh/h	1622	1815	1439	1622	1981	1298	1622	3010	426	1622	3170	291
Grp Volume(v), veh/h	37	110	108	43	63	64	80	405	409	112	376	385
Grp Sat Flow(s),veh/h/ln	1622	1711	1542	1622	1711	1568	1622	1711	1725	1622	1711	1749
Q Serve(g_s), s	2.0	5.6	6.1	2.4	3.1	3.4	4.4	19.5	19.6	4.6	10.9	11.0
Cycle Q Clear(g_c), s	2.0	5.6	6.1	2.4	3.1	3.4	4.4	19.5	19.6	4.6	10.9	11.0
Prop In Lane	1.00		0.93	1.00		0.83	1.00		0.25	1.00		0.17
Lane Grp Cap(c), veh/h	54	166	150	59	181	166	100	513	517	513	972	994
V/C Ratio(X)	0.68	0.66	0.72	0.72	0.35	0.39	0.80	0.79	0.79	0.22	0.39	0.39
Avail Cap(c_a), veh/h	296	302	272	296	299	273	148	513	517	513	972	994
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	0.60	0.60	0.60	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	39.2	39.5	42.9	37.4	37.5	41.7	28.9	28.9	22.6	10.8	10.8
Incr Delay (d2), s/veh	13.9	4.4	6.5	15.3	1.1	1.5	10.9	7.3	7.3	0.2	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.5	2.5	1.2	1.3	1.3	2.0	8.3	8.4	1.6	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	43.6	45.9	58.2	38.5	39.0	52.6	36.2	36.2	22.8	11.9	11.9
LnGrp LOS	E	D	D	E	D	D	D	D	D	C	B	B
Approach Vol, veh/h		255			170			894			873	
Approach Delay, s/veh		46.5			43.7			37.7			13.3	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.6	33.0	8.6	13.8	10.3	57.2	7.6	14.8
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 27	* 16	* 16	* 8.2	* 29	16.4	15.7
Max Q Clear Time (g_c+I1), s	6.6	21.6	4.4	8.1	6.4	13.0	4.0	5.4
Green Ext Time (p_c), s	0.0	2.1	0.0	0.6	0.0	3.7	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

1: 2nd Ave & Bear Valley Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	95	1852	26	1579	53	84	68	42	158
v/c Ratio	0.51	0.56	0.25	0.58	0.06	0.51	0.76	0.16	0.33
Control Delay	50.6	11.3	31.8	8.4	0.3	38.8	94.7	34.4	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	11.3	31.8	8.4	0.3	38.8	94.7	34.4	12.7
Queue Length 50th (ft)	58	178	13	78	0	32	44	22	33
Queue Length 95th (ft)	105	356	m19	164	m0	77	#123	49	67
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	190	3296	115	2744	911	513	89	771	480
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.56	0.23	0.58	0.06	0.16	0.76	0.05	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1735	25	25	1500	50	25	25	30	65	40	150
Future Volume (veh/h)	90	1735	25	25	1500	50	25	25	30	65	40	150
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	95	1826	26	26	1579	53	26	26	32	68	42	158
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	1739	25	85	1647	511	72	41	41	84	308	372
Arrive On Green	0.07	0.35	0.35	0.05	0.33	0.33	0.07	0.07	0.07	0.05	0.17	0.17
Sat Flow, veh/h	1622	4996	71	1622	4918	1527	350	575	570	1622	1801	1527
Grp Volume(v), veh/h	95	1198	654	26	1579	53	84	0	0	68	42	158
Grp Sat Flow(s),veh/h/ln	1622	1639	1789	1622	1639	1527	1495	0	0	1622	1801	1527
Q Serve(g_s), s	5.8	34.8	34.8	1.5	31.5	2.4	3.9	0.0	0.0	4.1	2.0	8.7
Cycle Q Clear(g_c), s	5.8	34.8	34.8	1.5	31.5	2.4	5.5	0.0	0.0	4.1	2.0	8.7
Prop In Lane	1.00		0.04	1.00		1.00	0.31		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	117	1141	622	85	1647	511	154	0	0	84	308	372
V/C Ratio(X)	0.81	1.05	1.05	0.31	0.96	0.10	0.55	0.00	0.00	0.81	0.14	0.42
Avail Cap(c_a), veh/h	138	1141	622	117	1648	511	524	0	0	84	775	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	32.6	32.6	45.6	32.6	22.9	45.6	0.0	0.0	46.9	35.2	31.9
Incr Delay (d2), s/veh	25.8	40.8	50.1	2.0	14.3	0.4	3.0	0.0	0.0	41.8	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	19.0	22.3	0.6	13.6	0.9	2.2	0.0	0.0	2.6	0.9	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.5	73.4	82.7	47.7	46.9	23.3	48.6	0.0	0.0	88.7	35.4	32.7
LnGrp LOS	E	F	F	D	D	C	D	A	A	F	D	C
Approach Vol, veh/h		1947			1658			84			268	
Approach Delay, s/veh		76.4			46.1			48.6			47.3	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	40.0		22.6	11.7	38.7	10.0	12.6
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	7.2	* 35		* 43	8.5	33.5	* 5.2	* 33
Max Q Clear Time (g_c+I1), s	3.5	36.8		10.7	7.8	33.5	6.1	7.5
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		61.2
HCM 6th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1830	15	20	1550	17	0	0	25	11	0	38
Future Vol, veh/h	4	1830	15	20	1550	17	0	0	25	11	0	38
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	100	-	-	225	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1906	16	21	1615	18	0	0	26	11	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1633	0	0	1922	0	0	2610	3597	961	2436	3596	817
Stage 1	-	-	-	-	-	-	1922	1922	-	1666	1666	-
Stage 2	-	-	-	-	-	-	688	1675	-	770	1930	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	191	-	-	137	-	-	26	5	220	34	5	274
Stage 1	-	-	-	-	-	-	44	113	-	67	152	-
Stage 2	-	-	-	-	-	-	366	150	-	326	112	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	191	-	-	137	-	-	19	4	220	26	4	274
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	4	-	26	4	-
Stage 1	-	-	-	-	-	-	43	111	-	66	129	-
Stage 2	-	-	-	-	-	-	265	127	-	281	110	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	23.5	93.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	220	191	-	-	137	-	-	87
HCM Lane V/C Ratio	0.118	0.022	-	-	0.152	-	-	0.587
HCM Control Delay (s)	23.5	24.3	-	-	35.9	-	-	93.3
HCM Lane LOS	C	C	-	-	E	-	-	F
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.5	-	-	2.7

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	1830	1555	7	1	31
Future Vol, veh/h	35	1830	1555	7	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	1947	1654	7	1	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1661	0	-	0	2511	831
Stage 1	-	-	-	-	1658	-
Stage 2	-	-	-	-	853	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	185	-	-	-	49	269
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	342	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	185	-	-	-	39	269
Mov Cap-2 Maneuver	-	-	-	-	65	-
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	342	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	185	-	-	-	245
HCM Lane V/C Ratio	0.201	-	-	-	0.139
HCM Control Delay (s)	29.3	-	-	-	22.1
HCM Lane LOS	D	-	-	-	C
HCM 95th %tile Q(veh)	0.7	-	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	184	1459	153	362	1281	138	158	434	388	265	704
v/c Ratio	0.53	0.80	0.19	1.23	0.73	0.16	0.71	0.72	0.84	0.63	0.87
Control Delay	50.1	43.9	18.5	169.4	31.0	4.6	63.7	47.8	33.6	47.1	47.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	43.9	18.5	169.4	31.0	4.6	63.7	47.8	33.6	47.1	47.6
Queue Length 50th (ft)	62	313	41	~147	257	15	52	137	94	82	214
Queue Length 95th (ft)	m97	404	m126	#239	312	38	#103	#236	#283	119	#304
Internal Link Dist (ft)		810			1732			593			1360
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	350	1822	804	294	1748	963	223	599	462	589	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.80	0.19	1.23	0.73	0.14	0.71	0.72	0.84	0.45	0.83

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	1430	150	355	1255	135	155	425	380	260	545	145
Future Volume (veh/h)	180	1430	150	355	1255	135	155	425	380	260	545	145
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	1605	1801	1801	1605	1801	1801	1605	1801	1801	1605	1801	1801
Adj Flow Rate, veh/h	184	1459	153	362	1281	138	158	434	388	265	556	148
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	1805	667	315	1802	731	208	688	307	334	622	165
Arrive On Green	0.11	0.37	0.37	0.11	0.37	0.37	0.07	0.20	0.20	0.11	0.23	0.23
Sat Flow, veh/h	2965	4918	1527	2965	4918	1527	2965	3423	1527	2965	2675	710
Grp Volume(v), veh/h	184	1459	153	362	1281	138	158	434	388	265	355	349
Grp Sat Flow(s),veh/h/ln	1482	1639	1527	1482	1639	1527	1482	1711	1527	1482	1711	1674
Q Serve(g_s), s	5.9	26.7	0.0	10.6	22.3	5.2	5.2	11.6	14.6	8.7	20.1	20.2
Cycle Q Clear(g_c), s	5.9	26.7	0.0	10.6	22.3	5.2	5.2	11.6	14.6	8.7	20.1	20.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	338	1805	667	315	1802	731	208	688	307	334	398	389
V/C Ratio(X)	0.54	0.81	0.23	1.15	0.71	0.19	0.76	0.63	1.27	0.79	0.89	0.90
Avail Cap(c_a), veh/h	338	1805	667	315	1802	731	208	688	307	593	426	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	41.8	28.5	17.6	44.7	27.1	14.9	45.7	36.6	21.2	43.2	37.1	37.2
Incr Delay (d2), s/veh	6.2	4.0	0.8	96.9	2.4	0.6	15.2	1.9	142.8	3.4	16.3	17.2
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	2.3	10.2	2.2	8.0	8.4	1.7	2.3	4.8	16.9	3.2	9.7	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	32.5	18.4	141.6	29.6	15.5	60.9	38.4	164.0	46.6	53.4	54.4
LnGrp LOS	D	C	B	F	C	B	E	D	F	D	D	D
Approach Vol, veh/h		1796			1781			980			969	
Approach Delay, s/veh		32.9			51.2			91.8			51.9	
Approach LOS		C			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	42.0	12.7	29.4	16.0	41.9	16.3	25.8
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	12.6	28.7	7.2	22.2	7.9	24.3	10.7	16.6
Green Ext Time (p_c), s	0.0	2.7	0.0	1.0	0.2	2.7	0.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	120	1	0	205	30	2	5	1	55	0	20
Future Vol, veh/h	15	120	1	0	205	30	2	5	1	55	0	20
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	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	141	1	0	241	35	2	6	1	65	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	276	0	0	142	0	0	299	454	71	369	437	138
Stage 1	-	-	-	-	-	-	178	178	-	259	259	-
Stage 2	-	-	-	-	-	-	121	276	-	110	178	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1284	-	-	1438	-	-	631	500	977	562	512	885
Stage 1	-	-	-	-	-	-	806	751	-	723	692	-
Stage 2	-	-	-	-	-	-	870	680	-	883	751	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1284	-	-	1438	-	-	607	493	977	550	504	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	607	493	-	550	504	-
Stage 1	-	-	-	-	-	-	794	740	-	712	692	-
Stage 2	-	-	-	-	-	-	847	680	-	862	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	11.6	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	553	1284	-	-	1438	-	-	612
HCM Lane V/C Ratio	0.017	0.014	-	-	-	-	-	0.144
HCM Control Delay (s)	11.6	7.8	0	-	0	-	-	11.9
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.5



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	162	70	252	97	834	54	1037
v/c Ratio	0.38	0.46	0.38	0.58	0.56	0.48	0.37	0.59
Control Delay	44.4	21.4	41.8	23.4	51.3	17.9	45.5	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	21.4	41.8	23.4	51.3	17.9	45.5	20.3
Queue Length 50th (ft)	32	18	37	33	52	169	29	235
Queue Length 95th (ft)	68	47	75	67	#121	261	66	339
Internal Link Dist (ft)		969		1302		1360		1085
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	221	494	243	557	179	1745	159	1743
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.33	0.29	0.45	0.54	0.48	0.34	0.59

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	60	90	65	110	125	90	715	60	50	920	45
Future Volume (veh/h)	55	60	90	65	110	125	90	715	60	50	920	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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	59	65	97	70	118	134	97	769	65	54	989	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	147	131	106	191	170	120	1207	102	358	1787	87
Arrive On Green	0.05	0.09	0.09	0.07	0.11	0.11	0.07	0.38	0.38	0.22	0.54	0.54
Sat Flow, veh/h	1622	1711	1527	1622	1711	1527	1622	3194	270	1622	3323	161
Grp Volume(v), veh/h	59	65	97	70	118	134	97	412	422	54	509	528
Grp Sat Flow(s),veh/h/ln	1622	1711	1527	1622	1711	1527	1622	1711	1753	1622	1711	1772
Q Serve(g_s), s	3.2	3.2	5.6	3.8	5.9	7.7	5.3	17.8	17.8	2.4	17.6	17.6
Cycle Q Clear(g_c), s	3.2	3.2	5.6	3.8	5.9	7.7	5.3	17.8	17.8	2.4	17.6	17.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	74	147	131	106	191	170	120	647	662	358	921	953
V/C Ratio(X)	0.80	0.44	0.74	0.66	0.62	0.79	0.81	0.64	0.64	0.15	0.55	0.55
Avail Cap(c_a), veh/h	223	226	202	241	241	215	148	647	662	358	921	953
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	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	39.1	40.2	41.1	38.2	38.9	41.0	22.9	22.9	28.3	13.7	13.7
Incr Delay (d2), s/veh	17.9	2.1	8.0	6.7	3.2	13.9	19.0	3.8	3.7	0.2	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	2.3	1.7	2.6	3.4	2.6	7.1	7.2	0.9	6.2	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	41.2	48.1	47.8	41.4	52.8	60.0	26.8	26.7	28.4	16.1	16.0
LnGrp LOS	E	D	D	D	D	D	E	C	C	C	B	B
Approach Vol, veh/h		221			322			931			1091	
Approach Delay, s/veh		49.4			47.5			30.2			16.6	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	40.0	11.2	12.8	11.5	54.5	8.7	15.3
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 34	* 13	* 12	* 8.2	* 36	12.4	12.7
Max Q Clear Time (g_c+I1), s	4.4	19.8	5.8	7.6	7.3	19.6	5.2	9.7
Green Ext Time (p_c), s	0.0	4.0	0.1	0.3	0.0	5.5	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	161	1744	17	1067	50	72	56	22	111
v/c Ratio	0.63	0.51	0.18	0.41	0.06	0.46	0.51	0.10	0.24
Control Delay	49.8	10.4	35.6	7.5	0.2	40.6	63.6	35.5	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	10.4	35.6	7.5	0.2	40.6	63.6	35.5	7.9
Queue Length 50th (ft)	96	190	11	76	0	31	34	14	17
Queue Length 95th (ft)	156	308	m22	78	m0	72	#101	31	39
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	263	3436	98	2595	869	532	109	773	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.51	0.17	0.41	0.06	0.14	0.51	0.03	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1560	10	15	960	45	15	30	20	50	20	100
Future Volume (veh/h)	145	1560	10	15	960	45	15	30	20	50	20	100
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	161	1733	11	17	1067	50	17	33	22	56	22	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	1804	11	541	2863	889	61	48	28	69	269	406
Arrive On Green	0.12	0.36	0.36	0.33	0.58	0.58	0.06	0.06	0.06	0.04	0.15	0.15
Sat Flow, veh/h	1622	5042	32	1622	4918	1527	275	823	483	1622	1801	1527
Grp Volume(v), veh/h	161	1127	617	17	1067	50	72	0	0	56	22	111
Grp Sat Flow(s),veh/h/ln	1622	1639	1796	1622	1639	1527	1580	0	0	1622	1801	1527
Q Serve(g_s), s	9.7	33.6	33.6	0.7	11.6	1.4	3.0	0.0	0.0	3.4	1.1	5.8
Cycle Q Clear(g_c), s	9.7	33.6	33.6	0.7	11.6	1.4	4.5	0.0	0.0	3.4	1.1	5.8
Prop In Lane	1.00		0.02	1.00		1.00	0.24		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	189	1173	642	541	2863	889	137	0	0	69	269	406
V/C Ratio(X)	0.85	0.96	0.96	0.03	0.37	0.06	0.52	0.00	0.00	0.81	0.08	0.27
Avail Cap(c_a), veh/h	203	1174	643	541	2863	889	555	0	0	83	776	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	31.4	31.4	22.4	11.1	9.0	46.3	0.0	0.0	47.5	36.6	29.1
Incr Delay (d2), s/veh	26.7	18.4	27.1	0.0	0.1	0.0	3.1	0.0	0.0	37.4	0.1	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	5.1	15.1	18.1	0.3	3.6	0.5	1.9	0.0	0.0	2.1	0.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	49.8	58.5	22.5	11.2	9.1	49.4	0.0	0.0	84.9	36.7	29.4
LnGrp LOS	E	D	E	C	B	A	D	A	A	F	D	C
Approach Vol, veh/h		1905			1134			72			189	
Approach Delay, s/veh		54.3			11.3			49.4			46.7	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.6	41.0		20.5	16.1	63.4	9.1	11.4
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	6.1	* 36		* 43	12.5	29.4	* 5.1	* 33
Max Q Clear Time (g_c+I1), s	2.7	35.6		7.8	11.7	13.6	5.4	6.5
Green Ext Time (p_c), s	0.0	0.1		0.4	0.0	6.2	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1630	15	0	1055	48	0	0	15	0	0	11
Future Vol, veh/h	0	1630	15	0	1055	48	0	0	15	0	0	11
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	-	-	Stop
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1811	17	0	1172	53	0	0	17	0	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	914	-	-	586
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	237	0	0	389
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	237	-	-	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	21.3	14.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	237	-	-	-	-	389
HCM Lane V/C Ratio	0.07	-	-	-	-	0.031
HCM Control Delay (s)	21.3	-	-	-	-	14.6
HCM Lane LOS	C	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	1645	1100	9	0	4
Future Vol, veh/h	0	1645	1100	9	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	250	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1788	1196	10	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	598
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	382
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	382
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	382
HCM Lane V/C Ratio	-	-	-	0.011
HCM Control Delay (s)	-	-	-	14.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	1590	1105	5	0	5
Future Vol, veh/h	55	1590	1105	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	1710	1188	5	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1193	0	-	0	-	597
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	315	-	-	-	0	382
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	315	-	-	-	-	382
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	315	-	-	-	382
HCM Lane V/C Ratio	0.188	-	-	-	0.014
HCM Control Delay (s)	19.1	-	-	-	14.6
HCM Lane LOS	C	-	-	-	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	229	1234	128	261	899	106	138	601	367	197	522
v/c Ratio	0.68	0.69	0.15	0.89	0.51	0.13	0.40	0.87	0.70	0.56	0.75
Control Delay	51.2	43.6	15.4	75.9	26.6	4.0	46.6	54.0	18.4	47.3	42.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	43.6	15.4	75.9	26.6	4.0	46.6	54.0	18.4	47.3	42.2
Queue Length 50th (ft)	78	310	36	86	163	8	42	196	50	61	156
Queue Length 95th (ft)	#122	357	102	#158	204	30	#86	#333	#186	94	202
Internal Link Dist (ft)		807			1732			606			1362
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	335	1797	862	294	1748	961	345	692	528	589	846
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.69	0.15	0.89	0.51	0.11	0.40	0.87	0.70	0.33	0.62

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	1160	120	245	845	100	130	565	345	185	385	105
Future Volume (veh/h)	215	1160	120	245	845	100	130	565	345	185	385	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1605	1801	1801	1605	1801	1801	1605	1801	1801	1605	1801	1801
Adj Flow Rate, veh/h	229	1234	128	261	899	106	138	601	367	197	410	112
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	1805	659	468	2054	773	191	593	265	264	498	135
Arrive On Green	0.04	0.12	0.12	0.16	0.42	0.42	0.06	0.17	0.17	0.09	0.19	0.19
Sat Flow, veh/h	2965	4918	1527	2965	4918	1527	2965	3423	1527	2965	2663	720
Grp Volume(v), veh/h	229	1234	128	261	899	106	138	601	367	197	262	260
Grp Sat Flow(s),veh/h/ln	1482	1639	1527	1482	1639	1527	1482	1711	1527	1482	1711	1672
Q Serve(g_s), s	7.6	24.0	1.0	8.1	13.0	3.7	4.6	17.3	11.7	6.5	14.7	15.0
Cycle Q Clear(g_c), s	7.6	24.0	1.0	8.1	13.0	3.7	4.6	17.3	11.7	6.5	14.7	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	338	1805	659	468	2054	773	191	593	265	264	320	312
V/C Ratio(X)	0.68	0.68	0.19	0.56	0.44	0.14	0.72	1.01	1.39	0.75	0.82	0.83
Avail Cap(c_a), veh/h	338	1805	659	468	2054	773	208	593	265	593	426	416
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	46.3	38.4	25.4	38.9	20.7	13.1	45.9	41.3	18.9	44.5	39.0	39.1
Incr Delay (d2), s/veh	10.4	2.1	0.7	4.7	0.7	0.4	10.7	40.2	195.7	3.9	8.4	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.7	2.5	3.1	4.7	1.2	1.9	10.2	18.1	2.4	6.6	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	40.5	26.1	43.6	21.4	13.4	56.6	81.5	214.5	48.3	47.5	48.7
LnGrp LOS	E	D	C	D	C	B	E	F	F	D	D	D
Approach Vol, veh/h		1591			1266			1106			719	
Approach Delay, s/veh		41.7			25.3			122.5			48.2	
Approach LOS		D			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	42.0	12.1	24.8	16.0	47.1	13.9	23.0
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	10.1	26.0	6.6	17.0	9.6	15.0	8.5	19.3
Green Ext Time (p_c), s	0.0	2.5	0.0	1.7	0.1	2.0	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.4
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	195	1	2	105	35	0	2	5	95	1	30
Future Vol, veh/h	25	195	1	2	105	35	0	2	5	95	1	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	238	1	2	128	43	0	2	6	116	1	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	239	0	0	368	474	120	334	453	86
Stage 1	-	-	-	-	-	-	299	299	-	154	154	-
Stage 2	-	-	-	-	-	-	69	175	-	180	299	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1404	-	-	1325	-	-	563	488	909	596	501	956
Stage 1	-	-	-	-	-	-	685	665	-	833	769	-
Stage 2	-	-	-	-	-	-	933	753	-	804	665	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1325	-	-	529	475	909	578	487	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	529	475	-	578	487	-
Stage 1	-	-	-	-	-	-	668	648	-	812	767	-
Stage 2	-	-	-	-	-	-	894	751	-	776	648	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.1	10.1	12.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	721	1404	-	-	1325	-	-	637
HCM Lane V/C Ratio	0.012	0.022	-	-	0.002	-	-	0.241
HCM Control Delay (s)	10.1	7.6	0.1	-	7.7	0	-	12.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.9



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	223	43	127	80	814	112	761
v/c Ratio	0.27	0.55	0.30	0.35	0.45	0.47	0.70	0.41
Control Delay	43.0	24.9	43.3	24.7	45.0	16.3	64.1	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	24.9	43.3	24.7	45.0	16.3	64.1	16.1
Queue Length 50th (ft)	20	33	23	21	43	158	63	145
Queue Length 95th (ft)	49	66	54	45	84	243	#144	241
Internal Link Dist (ft)		962		1302		1362		1054
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	293	646	293	600	184	1746	159	1847
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.35	0.15	0.21	0.43	0.47	0.70	0.41

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	110	100	40	70	50	75	670	95	105	655	60
Future Volume (veh/h)	35	110	100	40	70	50	75	670	95	105	655	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	37	117	106	43	74	53	80	713	101	112	697	64
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	176	146	59	213	140	100	903	128	510	1795	165
Arrive On Green	0.03	0.10	0.10	0.04	0.11	0.11	0.06	0.30	0.30	0.31	0.57	0.57
Sat Flow, veh/h	1622	1775	1473	1622	1981	1298	1622	3010	426	1622	3170	291
Grp Volume(v), veh/h	37	112	111	43	63	64	80	405	409	112	376	385
Grp Sat Flow(s),veh/h/ln	1622	1711	1536	1622	1711	1568	1622	1711	1725	1622	1711	1749
Q Serve(g_s), s	2.0	5.7	6.3	2.4	3.1	3.4	4.4	19.5	19.6	4.6	11.0	11.0
Cycle Q Clear(g_c), s	2.0	5.7	6.3	2.4	3.1	3.4	4.4	19.5	19.6	4.6	11.0	11.0
Prop In Lane	1.00		0.96	1.00		0.83	1.00		0.25	1.00		0.17
Lane Grp Cap(c), veh/h	54	169	152	59	184	169	100	513	517	510	969	991
V/C Ratio(X)	0.68	0.66	0.73	0.72	0.34	0.38	0.80	0.79	0.79	0.22	0.39	0.39
Avail Cap(c_a), veh/h	296	302	271	296	299	273	148	513	517	510	969	991
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	0.60	0.60	0.60	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	39.1	39.4	42.9	37.2	37.4	41.7	28.9	28.9	22.7	10.8	10.9
Incr Delay (d2), s/veh	13.9	4.4	6.5	15.3	1.1	1.4	10.9	7.3	7.3	0.2	1.2	1.2
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	1.0	2.5	2.6	1.2	1.3	1.3	2.0	8.3	8.4	1.6	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	43.5	45.9	58.2	38.3	38.8	52.6	36.2	36.2	22.9	12.0	12.0
LnGrp LOS	E	D	D	E	D	D	D	D	D	C	B	B
Approach Vol, veh/h		260			170			894			873	
Approach Delay, s/veh		46.4			43.5			37.7			13.4	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.4	33.0	8.6	14.0	10.3	57.1	7.6	15.0
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 27	* 16	* 16	* 8.2	* 29	16.4	15.7
Max Q Clear Time (g_c+I1), s	6.6	21.6	4.4	8.3	6.4	13.0	4.0	5.4
Green Ext Time (p_c), s	0.0	2.1	0.0	0.6	0.0	3.7	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	100	1863	47	1595	53	84	84	42	168
v/c Ratio	0.50	0.59	0.44	0.60	0.06	0.51	0.83	0.16	0.34
Control Delay	48.8	12.9	46.5	8.9	0.1	38.8	101.5	34.4	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	12.9	46.5	8.9	0.1	38.8	101.5	34.4	13.2
Queue Length 50th (ft)	60	268	31	81	0	32	~55	22	36
Queue Length 95th (ft)	109	357	m46	396	m1	77	#154	49	73
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	201	3150	112	2661	887	516	101	775	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.59	0.42	0.60	0.06	0.16	0.83	0.05	0.34

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1745	25	45	1515	50	25	25	30	80	40	160
Future Volume (veh/h)	95	1745	25	45	1515	50	25	25	30	80	40	160
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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	100	1837	26	47	1595	53	26	26	32	84	42	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	1739	25	100	1681	522	72	41	41	84	309	376
Arrive On Green	0.08	0.35	0.35	0.06	0.34	0.34	0.07	0.07	0.07	0.05	0.17	0.17
Sat Flow, veh/h	1622	4997	71	1622	4918	1527	349	574	568	1622	1801	1527
Grp Volume(v), veh/h	100	1205	658	47	1595	53	84	0	0	84	42	168
Grp Sat Flow(s),veh/h/ln	1622	1639	1789	1622	1639	1527	1491	0	0	1622	1801	1527
Q Serve(g_s), s	6.1	34.8	34.8	2.8	31.6	2.4	3.9	0.0	0.0	5.2	2.0	9.3
Cycle Q Clear(g_c), s	6.1	34.8	34.8	2.8	31.6	2.4	5.5	0.0	0.0	5.2	2.0	9.3
Prop In Lane	1.00		0.04	1.00		1.00	0.31		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	122	1141	622	100	1681	522	154	0	0	84	309	376
V/C Ratio(X)	0.82	1.06	1.06	0.47	0.95	0.10	0.55	0.00	0.00	1.00	0.14	0.45
Avail Cap(c_a), veh/h	122	1141	622	114	1687	524	525	0	0	84	778	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	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	32.6	32.6	45.3	32.1	22.4	45.6	0.0	0.0	47.4	35.1	31.9
Incr Delay (d2), s/veh	34.5	42.8	52.0	3.4	12.8	0.4	3.0	0.0	0.0	96.6	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	19.3	22.7	1.2	13.4	0.9	2.2	0.0	0.0	4.3	0.9	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	75.4	84.6	48.7	44.8	22.8	48.6	0.0	0.0	144.0	35.3	32.7
LnGrp LOS	F	F	F	D	D	C	D	A	A	F	D	C
Approach Vol, veh/h		1963			1695			84			294	
Approach Delay, s/veh		78.7			44.2			48.6			64.9	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	40.0		22.6	12.0	39.4	10.0	12.6
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	7.0	* 35		* 43	7.5	34.3	* 5.2	* 33
Max Q Clear Time (g_c+I1), s	4.8	36.8		11.3	8.1	33.6	7.2	7.5
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.6	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		62.6
HCM 6th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1860	15	0	1585	18	0	0	25	0	0	39
Future Vol, veh/h	0	1860	15	0	1585	18	0	0	25	0	0	39
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	-	-	Stop
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1938	16	0	1651	19	0	0	26	0	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	977	-	-	826
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	215	0	0	271
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	215	-	-	271
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	24	20.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	215	-	-	-	-	271
HCM Lane V/C Ratio	0.121	-	-	-	-	0.15
HCM Control Delay (s)	24	-	-	-	-	20.6
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	-	0.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	1885	1595	5	0	8
Future Vol, veh/h	0	1885	1595	5	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	250	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2049	1734	5	0	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	867
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	254
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	254
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	254
HCM Lane V/C Ratio	-	-	-	0.034
HCM Control Delay (s)	-	-	-	19.7
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	1840	1560	10	0	40
Future Vol, veh/h	45	1840	1560	10	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	1957	1660	11	0	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1671	0	-	0	-	836
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	183	-	-	-	0	267
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	183	-	-	-	-	267
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	21
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	183	-	-	-	267
HCM Lane V/C Ratio	0.262	-	-	-	0.159
HCM Control Delay (s)	31.5	-	-	-	21
HCM Lane LOS	D	-	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	184	1464	153	362	1286	138	163	434	388	265	709
v/c Ratio	0.53	0.80	0.19	1.23	0.74	0.16	0.73	0.72	0.84	0.63	0.87
Control Delay	36.2	38.4	11.4	169.4	31.1	4.6	66.0	47.8	33.6	47.1	47.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	38.4	11.4	169.4	31.1	4.6	66.0	47.8	33.6	47.1	47.8
Queue Length 50th (ft)	58	353	54	~147	258	15	53	137	94	82	216
Queue Length 95th (ft)	m92	402	m106	#239	313	38	#107	#236	#283	119	#308
Internal Link Dist (ft)		810			1732			593			1360
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	350	1822	803	294	1748	963	222	599	462	589	846
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.80	0.19	1.23	0.74	0.14	0.73	0.72	0.84	0.45	0.84

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	1435	150	355	1260	135	160	425	380	260	550	145
Future Volume (veh/h)	180	1435	150	355	1260	135	160	425	380	260	550	145
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	1605	1801	1801	1605	1801	1801	1605	1801	1801	1605	1801	1801
Adj Flow Rate, veh/h	184	1464	153	362	1286	138	163	434	388	265	561	148
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	1805	667	312	1797	730	208	691	308	334	626	165
Arrive On Green	0.11	0.37	0.37	0.11	0.37	0.37	0.07	0.20	0.20	0.11	0.23	0.23
Sat Flow, veh/h	2965	4918	1527	2965	4918	1527	2965	3423	1527	2965	2681	705
Grp Volume(v), veh/h	184	1464	153	362	1286	138	163	434	388	265	357	352
Grp Sat Flow(s),veh/h/ln	1482	1639	1527	1482	1639	1527	1482	1711	1527	1482	1711	1675
Q Serve(g_s), s	5.9	26.8	0.0	10.5	22.5	5.2	5.4	11.6	14.7	8.7	20.2	20.4
Cycle Q Clear(g_c), s	5.9	26.8	0.0	10.5	22.5	5.2	5.4	11.6	14.7	8.7	20.2	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	338	1805	667	312	1797	730	208	691	308	334	400	391
V/C Ratio(X)	0.54	0.81	0.23	1.16	0.72	0.19	0.79	0.63	1.26	0.79	0.89	0.90
Avail Cap(c_a), veh/h	338	1805	667	312	1797	730	208	691	308	593	426	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	41.8	28.5	17.6	44.7	27.3	15.0	45.8	36.5	21.3	43.2	37.1	37.2
Incr Delay (d2), s/veh	6.2	4.1	0.8	101.2	2.5	0.6	17.8	1.8	140.1	3.4	16.6	17.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	10.3	2.2	8.1	8.4	1.7	2.4	4.7	16.8	3.2	9.7	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	32.6	18.4	146.0	29.7	15.5	63.6	38.3	161.4	46.6	53.7	54.7
LnGrp LOS	D	C	B	F	C	B	E	D	F	D	D	D
Approach Vol, veh/h		1801			1786			985			974	
Approach Delay, s/veh		33.0			52.2			91.0			52.1	
Approach LOS		C			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	42.0	12.7	29.5	16.0	41.8	16.3	25.9
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	12.5	28.8	7.4	22.4	7.9	24.5	10.7	16.7
Green Ext Time (p_c), s	0.0	2.7	0.0	1.0	0.2	2.7	0.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	120	1	1	205	30	2	5	10	55	0	20
Future Vol, veh/h	15	120	1	1	205	30	2	5	10	55	0	20
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	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	141	1	1	241	35	2	6	12	65	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	276	0	0	142	0	0	301	456	71	371	439	138
Stage 1	-	-	-	-	-	-	178	178	-	261	261	-
Stage 2	-	-	-	-	-	-	123	278	-	110	178	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1284	-	-	1438	-	-	629	499	977	561	510	885
Stage 1	-	-	-	-	-	-	806	751	-	721	691	-
Stage 2	-	-	-	-	-	-	868	679	-	883	751	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1284	-	-	1438	-	-	605	491	977	542	502	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	605	491	-	542	502	-
Stage 1	-	-	-	-	-	-	794	740	-	710	690	-
Stage 2	-	-	-	-	-	-	844	678	-	852	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	10.2	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	717	1284	-	-	1438	-	-	604
HCM Lane V/C Ratio	0.028	0.014	-	-	0.001	-	-	0.146
HCM Control Delay (s)	10.2	7.8	0	-	7.5	0	-	12
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.5



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	173	70	252	97	834	54	1037
v/c Ratio	0.38	0.48	0.38	0.58	0.56	0.48	0.37	0.59
Control Delay	44.4	20.6	42.0	23.4	51.3	17.9	45.5	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	20.6	42.0	23.4	51.3	17.9	45.5	20.3
Queue Length 50th (ft)	32	18	38	33	52	169	29	235
Queue Length 95th (ft)	68	48	75	67	#121	261	66	339
Internal Link Dist (ft)		969		1302		1360		1085
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	221	502	242	557	179	1745	159	1743
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.34	0.29	0.45	0.54	0.48	0.34	0.59

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	60	100	65	110	125	90	715	60	50	920	45
Future Volume (veh/h)	55	60	100	65	110	125	90	715	60	50	920	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	1703	1801	1801	1703	1801	1801	1703	1801	1801	1703	1801	1801
Adj Flow Rate, veh/h	59	65	108	70	118	134	97	769	65	54	989	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	159	142	95	191	170	120	1207	102	358	1787	87
Arrive On Green	0.05	0.09	0.09	0.06	0.11	0.11	0.07	0.38	0.38	0.22	0.54	0.54
Sat Flow, veh/h	1622	1711	1527	1622	1711	1527	1622	3194	270	1622	3323	161
Grp Volume(v), veh/h	59	65	108	70	118	134	97	412	422	54	509	528
Grp Sat Flow(s),veh/h/ln	1622	1711	1527	1622	1711	1527	1622	1711	1753	1622	1711	1772
Q Serve(g_s), s	3.2	3.2	6.2	3.8	5.9	7.7	5.3	17.8	17.8	2.4	17.6	17.6
Cycle Q Clear(g_c), s	3.2	3.2	6.2	3.8	5.9	7.7	5.3	17.8	17.8	2.4	17.6	17.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	74	159	142	95	191	170	120	647	662	358	921	953
V/C Ratio(X)	0.80	0.41	0.76	0.74	0.62	0.79	0.81	0.64	0.64	0.15	0.55	0.55
Avail Cap(c_a), veh/h	223	226	202	241	241	215	148	647	662	358	921	953
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	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	38.5	39.8	41.7	38.2	38.9	41.0	22.9	22.9	28.3	13.7	13.7
Incr Delay (d2), s/veh	17.9	1.7	10.0	10.7	3.2	13.9	19.0	3.8	3.7	0.2	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	2.6	1.8	2.6	3.4	2.6	7.1	7.2	0.9	6.2	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	40.2	49.9	52.4	41.4	52.8	60.0	26.8	26.7	28.4	16.1	16.0
LnGrp LOS	E	D	D	D	D	D	E	C	C	C	B	B
Approach Vol, veh/h		232			322			931			1091	
Approach Delay, s/veh		49.8			48.5			30.2			16.6	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	40.0	10.6	13.5	11.5	54.5	8.7	15.3
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 34	* 13	* 12	* 8.2	* 36	12.4	12.7
Max Q Clear Time (g_c+I1), s	4.4	19.8	5.8	8.2	7.3	19.6	5.2	9.7
Green Ext Time (p_c), s	0.0	4.0	0.1	0.3	0.0	5.5	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

Appendix E: Horizon Year 2037 Intersection LOS Analysis Worksheets



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	432	2127	5	1247	58	84	58	26	184
v/c Ratio	0.62	0.56	0.05	0.84	0.10	0.49	0.66	0.11	0.21
Control Delay	31.1	9.5	32.0	23.8	0.9	40.9	80.7	35.4	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	9.5	32.0	23.8	0.9	40.9	80.7	35.4	7.6
Queue Length 50th (ft)	231	216	3	284	0	37	37	16	44
Queue Length 95th (ft)	#396	412	m5	m331	m1	82	#103	35	54
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	701	3791	105	1523	565	557	88	813	876
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.56	0.05	0.82	0.10	0.15	0.66	0.03	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	2010	10	5	1185	55	20	35	25	55	25	175
Future Volume (veh/h)	410	2010	10	5	1185	55	20	35	25	55	25	175
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	1801	1900	1900	1801	1900	1900	1900	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	432	2116	11	5	1247	58	21	37	26	58	26	184
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	1906	10	558	2931	910	65	56	34	73	300	455
Arrive On Green	0.13	0.36	0.36	0.33	0.57	0.57	0.07	0.07	0.07	0.04	0.16	0.16
Sat Flow, veh/h	1716	5325	28	1716	5187	1610	298	828	505	1716	1900	1610
Grp Volume(v), veh/h	432	1374	753	5	1247	58	84	0	0	58	26	184
Grp Sat Flow(s),veh/h/ln	1716	1729	1895	1716	1729	1610	1631	0	0	1716	1900	1610
Q Serve(g_s), s	12.5	35.8	35.8	0.2	13.8	1.6	3.4	0.0	0.0	3.3	1.2	9.3
Cycle Q Clear(g_c), s	12.5	35.8	35.8	0.2	13.8	1.6	5.0	0.0	0.0	3.3	1.2	9.3
Prop In Lane	1.00		0.01	1.00		1.00	0.25		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	214	1238	678	558	2931	910	154	0	0	73	300	455
V/C Ratio(X)	2.01	1.11	1.11	0.01	0.43	0.06	0.54	0.00	0.00	0.79	0.09	0.40
Avail Cap(c_a), veh/h	214	1238	678	558	2931	910	569	0	0	86	817	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	32.1	32.1	22.8	12.4	9.8	45.8	0.0	0.0	47.4	36.0	29.0
Incr Delay (d2), s/veh	472.6	61.2	68.9	0.0	0.1	0.0	3.0	0.0	0.0	33.5	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.2	24.1	27.8	0.1	4.6	0.6	2.2	0.0	0.0	2.1	0.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	516.3	93.3	101.0	22.8	12.5	9.8	48.7	0.0	0.0	80.9	36.1	29.6
LnGrp LOS	F	F	F	C	B	A	D	A	A	F	D	C
Approach Vol, veh/h		2559			1310			84			268	
Approach Delay, s/veh		167.0			12.5			48.7			41.3	
Approach LOS		F			B			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.7	41.0		21.3	17.0	61.7	9.1	12.2
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	6.2	* 36		* 43	12.5	29.5	* 5	* 33
Max Q Clear Time (g_c+I1), s	2.2	37.8		11.3	14.5	15.8	5.3	7.0
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	6.7	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		108.7
HCM 6th LOS		F

Notes

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	2045	20	9	1310	47	1	0	20	1	0	10
Future Vol, veh/h	31	2045	20	9	1310	47	1	0	20	1	0	10
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	100	-	-	225	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	2153	21	9	1379	49	1	0	21	1	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1428	0	0	2174	0	0	2800	3676	1087	2349	3662	714
Stage 1	-	-	-	-	-	-	2230	2230	-	1422	1422	-
Stage 2	-	-	-	-	-	-	570	1446	-	927	2240	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	242	-	-	102	-	-	20	5	181	38	5	321
Stage 1	-	-	-	-	-	-	26	79	-	101	200	-
Stage 2	-	-	-	-	-	-	432	195	-	261	78	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	242	-	-	102	-	-	16	4	181	28	4	321
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	4	-	28	4	-
Stage 1	-	-	-	-	-	-	22	68	-	87	182	-
Stage 2	-	-	-	-	-	-	381	178	-	199	67	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	41.3	28.5
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	121	242	-	-	102	-	-	165
HCM Lane V/C Ratio	0.183	0.135	-	-	0.093	-	-	0.07
HCM Control Delay (s)	41.3	22.2	-	-	43.9	-	-	28.5
HCM Lane LOS	E	C	-	-	E	-	-	D
HCM 95th %tile Q(veh)	0.6	0.5	-	-	0.3	-	-	0.2

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	140	1925	1330	220	0	35
Future Vol, veh/h	140	1925	1330	220	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	2026	1400	232	0	37

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1632	0	-	0	2620	816
Stage 1	-	-	-	-	1516	-
Stage 2	-	-	-	-	1104	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	192	-	-	-	43	275
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	251	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	192	-	-	-	10	275
Mov Cap-2 Maneuver	-	-	-	-	24	-
Stage 1	-	-	-	-	27	-
Stage 2	-	-	-	-	251	-

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	20.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	192	-	-	-	275
HCM Lane V/C Ratio	0.768	-	-	-	0.134
HCM Control Delay (s)	67.4	-	-	-	20.1
HCM Lane LOS	F	-	-	-	C
HCM 95th %tile Q(veh)	5.2	-	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	274	1489	153	316	1174	126	284	726	442	263	653
v/c Ratio	0.77	0.79	0.18	1.01	0.64	0.14	0.97	1.09	0.90	0.61	0.81
Control Delay	51.5	44.2	16.4	100.2	28.7	4.5	94.4	100.7	42.5	46.7	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	44.2	16.4	100.2	28.7	4.5	94.4	100.7	42.5	46.7	43.1
Queue Length 50th (ft)	89	375	51	~107	225	13	~108	~275	135	82	195
Queue Length 95th (ft)	#153	423	m129	#196	273	36	#203	#441	#353	118	257
Internal Link Dist (ft)		807			1732			606			1362
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	356	1895	864	312	1844	1012	292	668	491	625	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.79	0.18	1.01	0.64	0.12	0.97	1.09	0.90	0.42	0.73

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	1415	145	300	1115	120	270	690	420	250	490	130
Future Volume (veh/h)	260	1415	145	300	1115	120	270	690	420	250	490	130
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	1703	1900	1900	1703	1900	1900	1703	1900	1900	1703	1900	1900
Adj Flow Rate, veh/h	274	1489	153	316	1174	126	284	726	442	263	516	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1904	704	395	2000	793	220	676	301	337	603	159
Arrive On Green	0.04	0.12	0.12	0.13	0.39	0.39	0.07	0.19	0.19	0.11	0.21	0.21
Sat Flow, veh/h	3147	5187	1610	3147	5187	1610	3147	3610	1610	3147	2824	746
Grp Volume(v), veh/h	274	1489	153	316	1174	126	284	726	442	263	329	324
Grp Sat Flow(s),veh/h/ln	1573	1729	1610	1573	1729	1610	1573	1805	1610	1573	1805	1766
Q Serve(g_s), s	8.6	27.9	1.4	9.8	18.0	4.3	7.0	18.7	13.3	8.1	17.5	17.7
Cycle Q Clear(g_c), s	8.6	27.9	1.4	9.8	18.0	4.3	7.0	18.7	13.3	8.1	17.5	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	359	1904	704	395	2000	793	220	676	301	337	385	377
V/C Ratio(X)	0.76	0.78	0.22	0.80	0.59	0.16	1.29	1.07	1.47	0.78	0.85	0.86
Avail Cap(c_a), veh/h	359	1904	704	395	2000	793	220	676	301	629	449	440
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	46.8	40.1	25.3	42.5	24.4	14.0	46.5	40.6	20.5	43.5	37.8	37.9
Incr Delay (d2), s/veh	14.3	3.3	0.7	15.5	1.3	0.4	159.9	56.4	227.4	3.4	11.6	12.4
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	4.1	13.3	3.0	4.4	7.0	1.5	7.5	13.1	23.6	3.2	8.5	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	43.4	26.0	58.0	25.7	14.4	206.4	97.0	247.9	46.9	49.4	50.3
LnGrp LOS	E	D	C	E	C	B	F	F	F	D	D	D
Approach Vol, veh/h		1916			1616			1452			916	
Approach Delay, s/veh		44.5			31.1			164.3			49.0	
Approach LOS		D			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	42.0	12.7	27.4	16.0	43.9	15.7	24.4
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	11.8	29.9	9.0	19.7	10.6	20.0	10.1	20.7
Green Ext Time (p_c), s	0.0	2.5	0.0	1.6	0.1	2.6	0.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	71.0
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	245	1	7	150	45	0	2	55	115	1	35
Future Vol, veh/h	30	245	1	7	150	45	0	2	55	115	1	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	258	1	7	158	47	0	2	58	121	1	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	205	0	0	259	0	0	417	542	130	390	519	103
Stage 1	-	-	-	-	-	-	323	323	-	196	196	-
Stage 2	-	-	-	-	-	-	94	219	-	194	323	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1364	-	-	1303	-	-	520	446	896	543	460	932
Stage 1	-	-	-	-	-	-	663	649	-	787	737	-
Stage 2	-	-	-	-	-	-	902	721	-	789	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1364	-	-	1303	-	-	486	431	896	494	445	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	431	-	494	445	-
Stage 1	-	-	-	-	-	-	645	631	-	766	733	-
Stage 2	-	-	-	-	-	-	860	717	-	716	631	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3	9.5	14.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	863	1364	-	-	1303	-	-	554
HCM Lane V/C Ratio	0.07	0.023	-	-	0.006	-	-	0.287
HCM Control Delay (s)	9.5	7.7	0.1	-	7.8	0	-	14.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.2



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	316	53	152	95	979	137	953
v/c Ratio	0.34	0.63	0.34	0.38	0.48	0.54	0.82	0.50
Control Delay	43.5	22.5	43.5	24.3	44.6	18.2	75.6	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	22.5	43.5	24.3	44.6	18.2	75.6	18.3
Queue Length 50th (ft)	29	40	29	25	51	205	78	198
Queue Length 95th (ft)	63	78	63	52	95	312	#178	326
Internal Link Dist (ft)		962		1302		1362		1054
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	310	725	310	640	204	1807	168	1888
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.44	0.17	0.24	0.47	0.54	0.82	0.50

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	135	165	50	85	60	90	815	115	130	800	105
Future Volume (veh/h)	50	135	165	50	85	60	90	815	115	130	800	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1801	1900	1900	1801	1900	1900	1801	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	53	142	174	53	89	63	95	858	121	137	842	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	243	217	70	294	191	120	953	134	471	1661	219
Arrive On Green	0.04	0.13	0.13	0.04	0.14	0.14	0.07	0.30	0.30	0.27	0.52	0.52
Sat Flow, veh/h	1716	1805	1610	1716	2094	1365	1716	3176	448	1716	3206	423
Grp Volume(v), veh/h	53	142	174	53	76	76	95	488	491	137	474	479
Grp Sat Flow(s),veh/h/ln	1716	1805	1610	1716	1805	1654	1716	1805	1819	1716	1805	1824
Q Serve(g_s), s	2.8	6.7	9.4	2.8	3.4	3.7	4.9	23.3	23.3	5.7	15.4	15.4
Cycle Q Clear(g_c), s	2.8	6.7	9.4	2.8	3.4	3.7	4.9	23.3	23.3	5.7	15.4	15.4
Prop In Lane	1.00		1.00	1.00		0.83	1.00		0.25	1.00		0.23
Lane Grp Cap(c), veh/h	70	243	217	70	253	232	120	541	546	471	935	945
V/C Ratio(X)	0.76	0.58	0.80	0.76	0.30	0.33	0.79	0.90	0.90	0.29	0.51	0.51
Avail Cap(c_a), veh/h	313	319	284	313	315	289	156	541	546	471	935	945
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	0.31	0.31	0.31	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	36.6	37.8	42.7	34.7	34.9	41.2	30.2	30.2	25.7	14.2	14.2
Incr Delay (d2), s/veh	15.2	2.2	11.7	15.2	0.7	0.8	6.4	7.9	7.9	0.3	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	4.3	1.4	1.5	1.5	2.2	10.3	10.4	2.2	5.8	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	38.8	49.5	57.9	35.4	35.7	47.6	38.1	38.1	26.1	16.1	16.1
LnGrp LOS	E	D	D	E	D	D	D	D	D	C	B	B
Approach Vol, veh/h		369			205			1074			1090	
Approach Delay, s/veh		46.6			41.3			38.9			17.4	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.8	33.0	9.0	17.2	11.1	52.7	8.3	17.9
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 27	* 16	* 16	* 8.2	* 29	16.4	15.7
Max Q Clear Time (g_c+I1), s	7.7	25.3	4.8	11.4	6.9	17.4	4.8	5.7
Green Ext Time (p_c), s	0.0	0.9	0.1	0.7	0.0	4.2	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	200	2300	32	2058	63	101	84	53	447
v/c Ratio	0.49	0.69	0.29	0.93	0.08	0.55	0.95	0.16	0.58
Control Delay	38.1	15.1	37.3	22.7	0.8	41.0	133.9	32.6	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	15.1	37.3	22.7	0.8	41.0	133.9	32.6	18.5
Queue Length 50th (ft)	114	379	16	203	1	43	55	28	161
Queue Length 95th (ft)	184	501	m21	m#574	m1	91	#150	58	223
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	411	3338	119	2220	764	539	88	817	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.69	0.27	0.93	0.08	0.19	0.95	0.06	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	2155	30	30	1955	60	30	30	35	80	50	425
Future Volume (veh/h)	190	2155	30	30	1955	60	30	30	35	80	50	425
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	1801	1900	1900	1801	1900	1900	1900	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	200	2268	32	32	2058	63	32	32	37	84	53	447
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1834	26	108	1727	536	106	106	95	89	533	589
Arrive On Green	0.09	0.35	0.35	0.06	0.33	0.33	0.18	0.18	0.18	0.05	0.28	0.28
Sat Flow, veh/h	1716	5270	74	1716	5187	1610	326	587	528	1716	1900	1610
Grp Volume(v), veh/h	200	1487	813	32	2058	63	101	0	0	84	53	447
Grp Sat Flow(s),veh/h/ln	1716	1729	1887	1716	1729	1610	1441	0	0	1716	1900	1610
Q Serve(g_s), s	8.5	34.8	34.8	1.8	33.3	2.7	1.0	0.0	0.0	4.9	2.1	24.4
Cycle Q Clear(g_c), s	8.5	34.8	34.8	1.8	33.3	2.7	5.2	0.0	0.0	4.9	2.1	24.4
Prop In Lane	1.00		0.04	1.00		1.00	0.32		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	146	1203	657	108	1727	536	308	0	0	89	533	589
V/C Ratio(X)	1.37	1.24	1.24	0.30	1.19	0.12	0.33	0.00	0.00	0.94	0.10	0.76
Avail Cap(c_a), veh/h	146	1203	657	120	1727	536	508	0	0	89	821	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	32.6	32.6	44.7	33.3	23.2	35.6	0.0	0.0	47.2	26.6	27.9
Incr Delay (d2), s/veh	204.4	113.4	120.1	1.5	92.3	0.4	0.6	0.0	0.0	75.9	0.1	2.6
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	11.7	32.2	36.3	0.8	27.5	1.1	2.2	0.0	0.0	3.9	0.9	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	250.2	146.0	152.7	46.2	125.6	23.6	36.2	0.0	0.0	123.2	26.7	30.4
LnGrp LOS	F	F	F	D	F	C	D	A	A	F	C	C
Approach Vol, veh/h		2500			2153			101			584	
Approach Delay, s/veh		156.5			121.4			36.2			43.4	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	40.0		33.6	13.0	38.5	10.0	23.6
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	7.0	* 35		* 43	8.5	33.3	* 5.2	* 33
Max Q Clear Time (g_c+I1), s	3.8	36.8		26.4	10.5	35.3	6.9	7.2
Green Ext Time (p_c), s	0.0	0.0		1.7	0.0	0.0	0.0	0.6

Intersection Summary		
HCM 6th Ctrl Delay		127.7
HCM 6th LOS		F

Notes

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

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	2275	20	19	2025	17	0	0	30	11	0	38
Future Vol, veh/h	4	2275	20	19	2025	17	0	0	30	11	0	38
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	100	-	-	225	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	2395	21	20	2132	18	0	0	32	12	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2150	0	0	2416	0	0	3307	4604	1208	3147	4605	1075
Stage 1	-	-	-	-	-	-	2414	2414	-	2181	2181	-
Stage 2	-	-	-	-	-	-	893	2190	-	966	2424	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	105	-	-	77	-	-	9	1	150	12	1	185
Stage 1	-	-	-	-	-	-	19	63	-	28	83	-
Stage 2	-	-	-	-	-	-	274	82	-	247	62	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	105	-	-	77	-	-	5	1	150	~ 7	1	185
Mov Cap-2 Maneuver	-	-	-	-	-	-	5	1	-	~ 7	1	-
Stage 1	-	-	-	-	-	-	18	61	-	27	61	-
Stage 2	-	-	-	-	-	-	159	61	-	188	60	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	35.3	$ 700.5
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	150	105	-	-	77	-	-	28
HCM Lane V/C Ratio	0.211	0.04	-	-	0.26	-	-	1.842
HCM Control Delay (s)	35.3	40.7	-	-	67.4	-	-	$ 700.5
HCM Lane LOS	E	E	-	-	F	-	-	F
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.9	-	-	6.1

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

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	85	2230	1895	80	0	165
Future Vol, veh/h	85	2230	1895	80	0	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	2347	1995	84	0	174

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2079	0	-	0	3154	1040
Stage 1	-	-	-	-	2037	-
Stage 2	-	-	-	-	1117	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	114	-	-	-	21	195
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	247	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	114	-	-	-	5	195
Mov Cap-2 Maneuver	-	-	-	-	11	-
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	247	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	88.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	114	-	-	-	195
HCM Lane V/C Ratio	0.785	-	-	-	0.891
HCM Control Delay (s)	104.3	-	-	-	88.3
HCM Lane LOS	F	-	-	-	F
HCM 95th %tile Q(veh)	4.5	-	-	-	6.8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	232	1837	195	458	1642	174	242	547	489	432	1010
v/c Ratio	0.65	0.97	0.24	1.47	0.89	0.18	1.11	1.06	1.24	0.77	1.14
Control Delay	51.4	56.5	20.8	261.3	37.7	5.1	137.7	100.0	152.9	48.7	109.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	56.5	20.8	261.3	37.7	5.1	137.7	100.0	152.9	48.7	109.9
Queue Length 50th (ft)	79	413	83	~207	356	24	~91	~214	~286	134	~391
Queue Length 95th (ft)	m114	m#545	m153	#306	423	51	#169	#336	#496	186	#522
Internal Link Dist (ft)		810			1732			593			1360
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	356	1895	828	312	1844	1012	218	515	394	625	889
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.97	0.24	1.47	0.89	0.17	1.11	1.06	1.24	0.69	1.14

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1745	185	435	1560	165	230	520	465	410	785	175
Future Volume (veh/h)	220	1745	185	435	1560	165	230	520	465	410	785	175
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	1703	1900	1900	1703	1900	1900	1703	1900	1900	1703	1900	1900
Adj Flow Rate, veh/h	232	1837	195	458	1642	174	242	547	489	432	826	184
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1904	704	1353	3579	1369	220	612	273	505	730	163
Arrive On Green	0.11	0.37	0.37	0.43	0.69	0.69	0.07	0.17	0.17	0.16	0.25	0.25
Sat Flow, veh/h	3147	5187	1610	3147	5187	1610	3147	3610	1610	3147	2934	653
Grp Volume(v), veh/h	232	1837	195	458	1642	174	242	547	489	432	508	502
Grp Sat Flow(s),veh/h/ln	1573	1729	1610	1573	1729	1610	1573	1805	1610	1573	1805	1782
Q Serve(g_s), s	7.1	34.7	0.8	9.7	14.4	1.8	7.0	14.8	12.9	13.4	24.9	24.9
Cycle Q Clear(g_c), s	7.1	34.7	0.8	9.7	14.4	1.8	7.0	14.8	12.9	13.4	24.9	24.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	359	1904	704	1353	3579	1369	220	612	273	505	449	444
V/C Ratio(X)	0.65	0.97	0.28	0.34	0.46	0.13	1.10	0.89	1.79	0.86	1.13	1.13
Avail Cap(c_a), veh/h	359	1904	704	1353	3579	1369	220	612	273	629	449	444
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	0.62	0.62	0.62
Uniform Delay (d), s/veh	42.4	31.0	18.0	19.0	7.0	1.3	46.5	40.6	23.9	40.9	37.5	37.6
Incr Delay (d2), s/veh	8.7	13.9	1.0	0.7	0.4	0.2	89.5	15.5	370.1	6.1	75.5	75.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	15.5	2.8	3.3	4.0	0.1	5.3	7.5	32.6	5.3	19.6	19.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	44.9	19.0	19.7	7.5	1.4	136.0	56.1	394.0	47.0	113.1	113.3
LnGrp LOS	D	D	B	B	A	A	F	E	F	D	F	F
Approach Vol, veh/h		2264			2274			1278			1442	
Approach Delay, s/veh		43.3			9.5			200.6			93.4	
Approach LOS		D			A			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.3	42.0	12.7	31.0	16.0	75.3	21.0	22.7
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	11.7	36.7	9.0	26.9	9.1	16.4	15.4	16.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	4.2	0.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	70.3
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	170	1	2	260	35	2	6	220	65	0	25
Future Vol, veh/h	20	170	1	2	260	35	2	6	220	65	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	179	1	2	274	37	2	6	232	68	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	311	0	0	180	0	0	363	537	90	432	519	156
Stage 1	-	-	-	-	-	-	222	222	-	297	297	-
Stage 2	-	-	-	-	-	-	141	315	-	135	222	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1246	-	-	1393	-	-	568	449	950	507	460	862
Stage 1	-	-	-	-	-	-	760	718	-	687	666	-
Stage 2	-	-	-	-	-	-	847	654	-	854	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	1393	-	-	542	440	950	373	450	862
Mov Cap-2 Maneuver	-	-	-	-	-	-	542	440	-	373	450	-
Stage 1	-	-	-	-	-	-	746	704	-	674	665	-
Stage 2	-	-	-	-	-	-	819	653	-	628	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	10.3	15.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	916	1246	-	-	1393	-	-	443
HCM Lane V/C Ratio	0.262	0.017	-	-	0.002	-	-	0.214
HCM Control Delay (s)	10.3	7.9	0.1	-	7.6	0	-	15.3
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	0.8



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	421	84	300	116	995	63	1247
v/c Ratio	0.52	0.71	0.41	0.62	0.63	0.56	0.41	0.74
Control Delay	47.2	17.3	41.9	23.5	55.9	20.3	46.4	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	17.3	41.9	23.5	55.9	20.3	46.4	24.8
Queue Length 50th (ft)	54	28	44	40	62	224	34	325
Queue Length 95th (ft)	103	72	87	77	#152	324	74	#440
Internal Link Dist (ft)		969		1302		1360		1085
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	234	694	253	602	185	1778	168	1685
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.61	0.33	0.50	0.63	0.56	0.38	0.74

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	75	325	80	135	150	110	870	75	60	1120	65
Future Volume (veh/h)	95	75	325	80	135	150	110	870	75	60	1120	65
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	1801	1900	1900	1801	1900	1900	1801	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	100	79	342	84	142	158	116	916	79	63	1179	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	239	213	107	228	204	144	1270	110	304	1681	97
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.08	0.38	0.38	0.18	0.48	0.48
Sat Flow, veh/h	1716	1805	1610	1716	1805	1610	1716	3363	290	1716	3469	200
Grp Volume(v), veh/h	100	79	342	84	142	158	116	492	503	63	613	634
Grp Sat Flow(s),veh/h/ln	1716	1805	1610	1716	1805	1610	1716	1805	1848	1716	1805	1864
Q Serve(g_s), s	5.2	3.6	11.9	4.3	6.7	8.6	6.0	21.0	21.0	2.8	23.9	23.9
Cycle Q Clear(g_c), s	5.2	3.6	11.9	4.3	6.7	8.6	6.0	21.0	21.0	2.8	23.9	23.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.11
Lane Grp Cap(c), veh/h	127	239	213	107	228	204	144	682	698	304	875	903
V/C Ratio(X)	0.79	0.33	1.61	0.78	0.62	0.78	0.81	0.72	0.72	0.21	0.70	0.70
Avail Cap(c_a), veh/h	236	239	213	255	255	227	156	682	698	304	875	903
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	0.50	0.50	0.50	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	35.4	39.1	41.6	37.3	38.1	40.5	23.9	23.9	31.6	18.1	18.1
Incr Delay (d2), s/veh	10.3	0.8	293.7	11.6	3.9	14.0	13.5	3.3	3.2	0.3	4.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.6	21.9	2.1	3.1	4.0	2.9	8.6	8.8	1.1	9.6	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	36.2	332.8	53.1	41.1	52.1	54.0	27.3	27.2	31.9	22.8	22.7
LnGrp LOS	D	D	F	D	D	D	D	C	C	C	C	C
Approach Vol, veh/h		521			384			1111			1310	
Approach Delay, s/veh		233.8			48.3			30.0			23.1	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.1	40.0	10.9	17.0	12.3	49.7	11.2	16.7
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 34	* 13	* 12	* 8.2	* 36	12.4	12.7
Max Q Clear Time (g_c+I1), s	4.8	23.0	6.3	13.9	8.0	25.9	7.2	10.6
Green Ext Time (p_c), s	0.0	4.3	0.1	0.0	0.0	5.1	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	61.3
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	442	2143	16	1258	58	84	63	26	189
v/c Ratio	0.63	0.58	0.16	0.84	0.10	0.49	0.70	0.11	0.22
Control Delay	31.7	11.1	33.9	24.2	1.0	40.9	85.8	35.4	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	11.1	33.9	24.2	1.0	40.9	85.8	35.4	7.8
Queue Length 50th (ft)	238	218	10	287	0	37	40	16	46
Queue Length 95th (ft)	#412	417	m16	m331	m1	82	#113	35	56
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	701	3681	105	1523	565	557	90	813	875
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.58	0.15	0.83	0.10	0.15	0.70	0.03	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	2025	10	15	1195	55	20	35	25	60	25	180
Future Volume (veh/h)	420	2025	10	15	1195	55	20	35	25	60	25	180
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	1801	1900	1900	1801	1900	1900	1900	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	442	2132	11	16	1258	58	21	37	26	63	26	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	1906	10	551	2911	904	65	55	34	80	307	462
Arrive On Green	0.13	0.36	0.36	0.32	0.56	0.56	0.07	0.07	0.07	0.05	0.16	0.16
Sat Flow, veh/h	1716	5325	27	1716	5187	1610	296	825	502	1716	1900	1610
Grp Volume(v), veh/h	442	1384	759	16	1258	58	84	0	0	63	26	189
Grp Sat Flow(s),veh/h/ln	1716	1729	1895	1716	1729	1610	1623	0	0	1716	1900	1610
Q Serve(g_s), s	12.5	35.8	35.8	0.6	14.1	1.6	3.4	0.0	0.0	3.6	1.2	9.5
Cycle Q Clear(g_c), s	12.5	35.8	35.8	0.6	14.1	1.6	5.0	0.0	0.0	3.6	1.2	9.5
Prop In Lane	1.00		0.01	1.00		1.00	0.25		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	214	1238	678	551	2911	904	154	0	0	80	307	462
V/C Ratio(X)	2.06	1.12	1.12	0.03	0.43	0.06	0.54	0.00	0.00	0.79	0.08	0.41
Avail Cap(c_a), veh/h	214	1238	678	551	2911	904	566	0	0	86	817	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	32.1	32.1	23.3	12.7	10.0	45.8	0.0	0.0	47.2	35.6	28.8
Incr Delay (d2), s/veh	493.2	64.5	72.0	0.0	0.1	0.0	3.0	0.0	0.0	35.7	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.4	24.6	28.4	0.2	4.7	0.6	2.2	0.0	0.0	2.3	0.5	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	537.0	96.6	104.1	23.3	12.8	10.0	48.7	0.0	0.0	82.9	35.7	29.4
LnGrp LOS	F	F	F	C	B	B	D	A	A	F	D	C
Approach Vol, veh/h		2585			1332			84			278	
Approach Delay, s/veh		174.1			12.8			48.7			42.1	
Approach LOS		F			B			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.3	41.0		21.7	17.0	61.3	9.5	12.2
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	6.2	* 36		* 43	12.5	29.5	* 5	* 33
Max Q Clear Time (g_c+I1), s	2.6	37.8		11.5	14.5	16.1	5.6	7.0
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	6.7	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		112.9
HCM 6th LOS		F

Notes

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2095	20	0	1325	48	0	0	20	0	0	11
Future Vol, veh/h	0	2095	20	0	1325	48	0	0	20	0	0	11
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	-	-	Stop
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2205	21	0	1395	51	0	0	21	0	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1113	-	-	698
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	174	0	0	328
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	174	-	-	328
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	28.5	16.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	174	-	-	-	-	328
HCM Lane V/C Ratio	0.121	-	-	-	-	0.035
HCM Control Delay (s)	28.5	-	-	-	-	16.4
HCM Lane LOS	D	-	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	2115	1370	9	0	4
Future Vol, veh/h	0	2115	1370	9	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	250	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2226	1442	9	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	721
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	317
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	317
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	317
HCM Lane V/C Ratio	-	-	-	0.013
HCM Control Delay (s)	-	-	-	16.5
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	185	1930	1340	225	0	40
Future Vol, veh/h	185	1930	1340	225	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	195	2032	1411	237	0	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1648	0	-	0	-	824
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	~ 188	-	-	-	0	271
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	~ 188	-	-	-	-	271
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	11.1	0	20.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	~ 188	-	-	-	271
HCM Lane V/C Ratio	1.036	-	-	-	0.155
HCM Control Delay (s)	127	-	-	-	20.7
HCM Lane LOS	F	-	-	-	C
HCM 95th %tile Q(veh)	9	-	-	-	0.5

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	274	1489	153	316	1179	126	295	726	442	263	658
v/c Ratio	0.77	0.79	0.18	1.01	0.64	0.14	1.02	1.09	0.90	0.61	0.81
Control Delay	52.4	44.6	17.0	100.2	28.7	4.5	106.2	100.7	42.5	46.7	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	44.6	17.0	100.2	28.7	4.5	106.2	100.7	42.5	46.7	43.3
Queue Length 50th (ft)	89	375	51	~107	226	13	~117	~275	135	82	197
Queue Length 95th (ft)	#154	423	m128	#196	275	36	#212	#441	#353	118	260
Internal Link Dist (ft)		807			1732			606			1362
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	356	1895	863	312	1844	1012	289	668	491	625	890
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.79	0.18	1.01	0.64	0.12	1.02	1.09	0.90	0.42	0.74

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	1415	145	300	1120	120	280	690	420	250	495	130
Future Volume (veh/h)	260	1415	145	300	1120	120	280	690	420	250	495	130
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	1703	1900	1900	1703	1900	1900	1703	1900	1900	1703	1900	1900
Adj Flow Rate, veh/h	274	1489	153	316	1179	126	295	726	442	263	521	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1904	704	392	1994	792	220	680	303	337	607	159
Arrive On Green	0.04	0.12	0.12	0.12	0.38	0.38	0.07	0.19	0.19	0.11	0.21	0.21
Sat Flow, veh/h	3147	5187	1610	3147	5187	1610	3147	3610	1610	3147	2831	741
Grp Volume(v), veh/h	274	1489	153	316	1179	126	295	726	442	263	331	327
Grp Sat Flow(s),veh/h/ln	1573	1729	1610	1573	1729	1610	1573	1805	1610	1573	1805	1767
Q Serve(g_s), s	8.6	27.9	1.4	9.8	18.1	4.3	7.0	18.8	13.4	8.1	17.7	17.8
Cycle Q Clear(g_c), s	8.6	27.9	1.4	9.8	18.1	4.3	7.0	18.8	13.4	8.1	17.7	17.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	359	1904	704	392	1994	792	220	680	303	337	387	379
V/C Ratio(X)	0.76	0.78	0.22	0.81	0.59	0.16	1.34	1.07	1.46	0.78	0.86	0.86
Avail Cap(c_a), veh/h	359	1904	704	392	1994	792	220	680	303	629	449	440
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	46.8	40.1	25.3	42.6	24.5	14.0	46.5	40.6	20.5	43.5	37.8	37.8
Incr Delay (d2), s/veh	14.3	3.3	0.7	16.2	1.3	0.4	180.1	54.1	223.5	3.4	11.8	12.6
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	4.1	13.3	3.0	4.5	7.0	1.5	8.1	13.0	23.4	3.2	8.6	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	43.4	26.0	58.8	25.8	14.4	226.6	94.7	244.0	46.9	49.6	50.5
LnGrp LOS	E	D	C	E	C	B	F	F	F	D	D	D
Approach Vol, veh/h		1916			1621			1463			921	
Approach Delay, s/veh		44.5			31.4			166.4			49.1	
Approach LOS		D			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	42.0	12.7	27.6	16.0	43.7	15.7	24.5
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	11.8	29.9	9.0	19.8	10.6	20.1	10.1	20.8
Green Ext Time (p_c), s	0.0	2.5	0.0	1.6	0.1	2.6	0.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	71.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	245	1	9	150	45	0	2	60	115	1	35
Future Vol, veh/h	30	245	1	9	150	45	0	2	60	115	1	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	258	1	9	158	47	0	2	63	121	1	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	205	0	0	259	0	0	421	546	130	394	523	103
Stage 1	-	-	-	-	-	-	323	323	-	200	200	-
Stage 2	-	-	-	-	-	-	98	223	-	194	323	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1364	-	-	1303	-	-	517	444	896	540	457	932
Stage 1	-	-	-	-	-	-	663	649	-	783	735	-
Stage 2	-	-	-	-	-	-	898	718	-	789	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1364	-	-	1303	-	-	482	428	896	487	441	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	482	428	-	487	441	-
Stage 1	-	-	-	-	-	-	645	631	-	762	729	-
Stage 2	-	-	-	-	-	-	854	712	-	711	631	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3	9.5	14.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	865	1364	-	-	1303	-	-	547
HCM Lane V/C Ratio	0.075	0.023	-	-	0.007	-	-	0.291
HCM Control Delay (s)	9.5	7.7	0.1	-	7.8	0	-	14.3
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.2



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	321	53	152	95	979	137	953
v/c Ratio	0.34	0.63	0.34	0.38	0.48	0.54	0.82	0.51
Control Delay	43.5	22.3	43.5	24.2	44.6	18.2	75.6	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	22.3	43.5	24.2	44.6	18.2	75.6	18.4
Queue Length 50th (ft)	29	40	29	25	51	205	78	198
Queue Length 95th (ft)	63	78	63	51	95	313	#178	326
Internal Link Dist (ft)		962		1302		1362		1054
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	310	729	310	640	204	1806	168	1887
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.44	0.17	0.24	0.47	0.54	0.82	0.51

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	135	170	50	85	60	90	815	115	130	800	105
Future Volume (veh/h)	50	135	170	50	85	60	90	815	115	130	800	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1801	1900	1900	1801	1900	1900	1801	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	53	142	179	53	89	63	95	858	121	137	842	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	248	221	70	299	195	120	953	134	466	1652	218
Arrive On Green	0.04	0.14	0.14	0.04	0.14	0.14	0.07	0.30	0.30	0.27	0.52	0.52
Sat Flow, veh/h	1716	1805	1610	1716	2094	1365	1716	3176	448	1716	3206	423
Grp Volume(v), veh/h	53	142	179	53	76	76	95	488	491	137	474	479
Grp Sat Flow(s),veh/h/ln	1716	1805	1610	1716	1805	1654	1716	1805	1819	1716	1805	1824
Q Serve(g_s), s	2.8	6.6	9.7	2.8	3.4	3.7	4.9	23.3	23.3	5.7	15.5	15.5
Cycle Q Clear(g_c), s	2.8	6.6	9.7	2.8	3.4	3.7	4.9	23.3	23.3	5.7	15.5	15.5
Prop In Lane	1.00		1.00	1.00		0.83	1.00		0.25	1.00		0.23
Lane Grp Cap(c), veh/h	70	248	221	70	258	236	120	541	546	466	930	940
V/C Ratio(X)	0.76	0.57	0.81	0.76	0.29	0.32	0.79	0.90	0.90	0.29	0.51	0.51
Avail Cap(c_a), veh/h	313	319	284	313	315	289	156	541	546	466	930	940
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	0.31	0.31	0.31	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	36.3	37.7	42.7	34.5	34.7	41.2	30.2	30.2	25.9	14.3	14.3
Incr Delay (d2), s/veh	15.2	2.1	12.6	15.2	0.6	0.8	6.4	7.9	7.9	0.3	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	4.4	1.4	1.5	1.5	2.2	10.3	10.4	2.2	5.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	38.4	50.3	57.9	35.1	35.4	47.6	38.1	38.1	26.3	16.3	16.3
LnGrp LOS	E	D	D	E	D	D	D	D	D	C	B	B
Approach Vol, veh/h		374			205			1074			1090	
Approach Delay, s/veh		46.9			41.1			38.9			17.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.6	33.0	9.0	17.5	11.1	52.5	8.3	18.2
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 27	* 16	* 16	* 8.2	* 29	16.4	15.7
Max Q Clear Time (g_c+I1), s	7.7	25.3	4.8	11.7	6.9	17.5	4.8	5.7
Green Ext Time (p_c), s	0.0	0.9	0.1	0.7	0.0	4.2	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	205	2311	53	2074	63	101	105	53	458
v/c Ratio	0.48	0.72	0.46	0.95	0.08	0.55	1.19	0.16	0.58
Control Delay	37.6	16.7	41.0	24.8	0.8	41.0	199.8	32.6	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	16.7	41.0	24.8	0.8	41.0	199.8	32.6	18.5
Queue Length 50th (ft)	116	382	28	207	1	43	~81	28	166
Queue Length 95th (ft)	187	505	m35	m#583	m1	91	#188	58	230
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	423	3220	119	2186	754	539	88	817	783
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.72	0.45	0.95	0.08	0.19	1.19	0.06	0.58

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	2165	30	50	1970	60	30	30	35	100	50	435
Future Volume (veh/h)	195	2165	30	50	1970	60	30	30	35	100	50	435
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	1801	1900	1900	1801	1900	1900	1900	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	205	2279	32	53	2074	63	32	32	37	105	53	458
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1834	26	108	1727	536	109	108	98	89	545	599
Arrive On Green	0.09	0.35	0.35	0.06	0.33	0.33	0.19	0.19	0.19	0.05	0.29	0.29
Sat Flow, veh/h	1716	5271	74	1716	5187	1610	327	581	525	1716	1900	1610
Grp Volume(v), veh/h	205	1494	817	53	2074	63	101	0	0	105	53	458
Grp Sat Flow(s),veh/h/ln	1716	1729	1887	1716	1729	1610	1433	0	0	1716	1900	1610
Q Serve(g_s), s	8.5	34.8	34.8	3.0	33.3	2.7	0.9	0.0	0.0	5.2	2.0	25.0
Cycle Q Clear(g_c), s	8.5	34.8	34.8	3.0	33.3	2.7	5.1	0.0	0.0	5.2	2.0	25.0
Prop In Lane	1.00		0.04	1.00		1.00	0.32		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	146	1203	657	108	1727	536	315	0	0	89	545	599
V/C Ratio(X)	1.41	1.24	1.24	0.49	1.20	0.12	0.32	0.00	0.00	1.18	0.10	0.77
Avail Cap(c_a), veh/h	146	1203	657	120	1727	536	506	0	0	89	821	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	32.6	32.6	45.3	33.3	23.2	35.1	0.0	0.0	47.4	26.2	27.6
Incr Delay (d2), s/veh	218.3	115.9	122.6	3.4	96.2	0.4	0.6	0.0	0.0	150.6	0.1	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	32.6	36.8	1.3	28.1	1.1	2.2	0.0	0.0	5.9	0.9	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	264.1	148.5	155.2	48.7	129.6	23.6	35.6	0.0	0.0	198.0	26.2	30.4
LnGrp LOS	F	F	F	D	F	C	D	A	A	F	C	C
Approach Vol, veh/h		2516			2190			101			616	
Approach Delay, s/veh		160.1			124.6			35.6			58.6	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	40.0		34.2	13.0	38.5	10.0	24.2
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	7.0	* 35		* 43	8.5	33.3	* 5.2	* 33
Max Q Clear Time (g_c+I1), s	5.0	36.8		27.0	10.5	35.3	7.2	7.1
Green Ext Time (p_c), s	0.0	0.0		1.7	0.0	0.0	0.0	0.6

Intersection Summary		
HCM 6th Ctrl Delay		131.9
HCM 6th LOS		F

Notes

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2305	20	0	2055	18	0	0	30	0	0	39
Future Vol, veh/h	0	2305	20	0	2055	18	0	0	30	0	0	39
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	-	-	Stop
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2426	21	0	2163	19	0	0	32	0	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1224	-	-	1082
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	147	0	0	183
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	147	-	-	183
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	36.1	30.3
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	147	-	-	-	-	183
HCM Lane V/C Ratio	0.215	-	-	-	-	0.224
HCM Control Delay (s)	36.1	-	-	-	-	30.3
HCM Lane LOS	E	-	-	-	-	D
HCM 95th %tile Q(veh)	0.8	-	-	-	-	0.8

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	2335	2065	5	0	8
Future Vol, veh/h	0	2335	2065	5	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	250	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2458	2174	5	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1087
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	181
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	181
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.9
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	181
HCM Lane V/C Ratio	-	-	-	0.047
HCM Control Delay (s)	-	-	-	25.9
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	95	2240	1900	85	0	170
Future Vol, veh/h	95	2240	1900	85	0	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	2358	2000	89	0	179

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2089	0	-	0	-	1045
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	113	-	-	-	0	194
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	113	-	-	-	-	194
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	95.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	113	-	-	-	194
HCM Lane V/C Ratio	0.885	-	-	-	0.922
HCM Control Delay (s)	126.5	-	-	-	95.6
HCM Lane LOS	F	-	-	-	F
HCM 95th %tile Q(veh)	5.4	-	-	-	7.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	232	1842	195	458	1647	174	247	547	489	432	1016
v/c Ratio	0.65	0.97	0.24	1.47	0.89	0.18	1.13	1.06	1.24	0.77	1.14
Control Delay	51.3	57.0	21.2	261.3	37.9	5.1	144.7	100.0	152.9	48.7	112.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	57.0	21.2	261.3	37.9	5.1	144.7	100.0	152.9	48.7	112.4
Queue Length 50th (ft)	78	415	82	~207	358	24	~94	~214	~286	134	~395
Queue Length 95th (ft)	m108	m#538	m143	#306	424	51	#173	#336	#496	186	#526
Internal Link Dist (ft)		810			1732			593			1360
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	356	1895	828	312	1844	1012	218	515	394	625	889
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.97	0.24	1.47	0.89	0.17	1.13	1.06	1.24	0.69	1.14

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1750	185	435	1565	165	235	520	465	410	790	175
Future Volume (veh/h)	220	1750	185	435	1565	165	235	520	465	410	790	175
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	1703	1900	1900	1703	1900	1900	1703	1900	1900	1703	1900	1900
Adj Flow Rate, veh/h	232	1842	195	458	1647	174	247	547	489	432	832	184
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1904	704	1353	3579	1369	220	612	273	505	732	162
Arrive On Green	0.11	0.37	0.37	0.43	0.69	0.69	0.07	0.17	0.17	0.16	0.25	0.25
Sat Flow, veh/h	3147	5187	1610	3147	5187	1610	3147	3610	1610	3147	2938	650
Grp Volume(v), veh/h	232	1842	195	458	1647	174	247	547	489	432	511	505
Grp Sat Flow(s),veh/h/ln	1573	1729	1610	1573	1729	1610	1573	1805	1610	1573	1805	1783
Q Serve(g_s), s	7.1	34.9	0.8	9.7	14.4	1.8	7.0	14.8	12.9	13.4	24.9	24.9
Cycle Q Clear(g_c), s	7.1	34.9	0.8	9.7	14.4	1.8	7.0	14.8	12.9	13.4	24.9	24.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	359	1904	704	1353	3579	1369	220	612	273	505	449	444
V/C Ratio(X)	0.65	0.97	0.28	0.34	0.46	0.13	1.12	0.89	1.79	0.86	1.14	1.14
Avail Cap(c_a), veh/h	359	1904	704	1353	3579	1369	220	612	273	629	449	444
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	0.62	0.62	0.62
Uniform Delay (d), s/veh	42.4	31.1	18.0	19.0	7.0	1.3	46.5	40.6	23.9	40.9	37.5	37.6
Incr Delay (d2), s/veh	8.7	14.3	1.0	0.7	0.4	0.2	97.1	15.5	370.1	6.1	78.0	78.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	15.6	2.8	3.3	4.0	0.1	5.6	7.5	32.6	5.3	19.9	19.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	45.4	19.0	19.7	7.5	1.4	143.6	56.1	394.0	47.0	115.6	115.8
LnGrp LOS	D	D	B	B	A	A	F	E	F	D	F	F
Approach Vol, veh/h		2269			2279			1283			1448	
Approach Delay, s/veh		43.7			9.5			201.8			95.2	
Approach LOS		D			A			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.3	42.0	12.7	31.0	16.0	75.3	21.0	22.7
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	11.7	36.9	9.0	26.9	9.1	16.4	15.4	16.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	4.2	0.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	71.1
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	170	1	3	260	35	2	6	230	65	0	25
Future Vol, veh/h	20	170	1	3	260	35	2	6	230	65	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	179	1	3	274	37	2	6	242	68	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	311	0	0	180	0	0	365	539	90	434	521	156
Stage 1	-	-	-	-	-	-	222	222	-	299	299	-
Stage 2	-	-	-	-	-	-	143	317	-	135	222	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1246	-	-	1393	-	-	566	448	950	506	458	862
Stage 1	-	-	-	-	-	-	760	718	-	685	665	-
Stage 2	-	-	-	-	-	-	845	653	-	854	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	1393	-	-	539	438	950	367	448	862
Mov Cap-2 Maneuver	-	-	-	-	-	-	539	438	-	367	448	-
Stage 1	-	-	-	-	-	-	746	704	-	672	663	-
Stage 2	-	-	-	-	-	-	817	651	-	619	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	10.4	15.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	917	1246	-	-	1393	-	-	437
HCM Lane V/C Ratio	0.273	0.017	-	-	0.002	-	-	0.217
HCM Control Delay (s)	10.4	7.9	0.1	-	7.6	0	-	15.5
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	0.8



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	432	84	300	116	995	63	1247
v/c Ratio	0.52	0.72	0.42	0.62	0.63	0.56	0.41	0.74
Control Delay	47.2	18.1	42.4	23.5	55.9	20.3	46.4	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	18.1	42.4	23.5	55.9	20.3	46.4	24.8
Queue Length 50th (ft)	54	32	45	40	62	224	34	325
Queue Length 95th (ft)	103	76	87	77	#152	324	74	#440
Internal Link Dist (ft)		969		1302		1360		1085
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	234	694	253	602	185	1778	168	1685
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.62	0.33	0.50	0.63	0.56	0.38	0.74

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	75	335	80	135	150	110	870	75	60	1120	65
Future Volume (veh/h)	95	75	335	80	135	150	110	870	75	60	1120	65
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	1801	1900	1900	1801	1900	1900	1801	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	100	79	353	84	142	158	116	916	79	63	1179	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	239	213	107	228	204	144	1270	110	304	1681	97
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.08	0.38	0.38	0.18	0.48	0.48
Sat Flow, veh/h	1716	1805	1610	1716	1805	1610	1716	3363	290	1716	3469	200
Grp Volume(v), veh/h	100	79	353	84	142	158	116	492	503	63	613	634
Grp Sat Flow(s),veh/h/ln	1716	1805	1610	1716	1805	1610	1716	1805	1848	1716	1805	1864
Q Serve(g_s), s	5.2	3.6	11.9	4.3	6.7	8.6	6.0	21.0	21.0	2.8	23.9	23.9
Cycle Q Clear(g_c), s	5.2	3.6	11.9	4.3	6.7	8.6	6.0	21.0	21.0	2.8	23.9	23.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.11
Lane Grp Cap(c), veh/h	127	239	213	107	228	204	144	682	698	304	875	903
V/C Ratio(X)	0.79	0.33	1.66	0.78	0.62	0.78	0.81	0.72	0.72	0.21	0.70	0.70
Avail Cap(c_a), veh/h	236	239	213	255	255	227	156	682	698	304	875	903
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	0.50	0.50	0.50	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	35.4	39.1	41.6	37.3	38.1	40.5	23.9	23.9	31.6	18.1	18.1
Incr Delay (d2), s/veh	10.3	0.8	316.1	11.6	3.9	14.0	13.5	3.3	3.2	0.3	4.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.6	23.2	2.1	3.1	4.0	2.9	8.6	8.8	1.1	9.6	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	36.2	355.2	53.1	41.1	52.1	54.0	27.3	27.2	31.9	22.8	22.7
LnGrp LOS	D	D	F	D	D	D	D	C	C	C	C	C
Approach Vol, veh/h		532			384			1111			1310	
Approach Delay, s/veh		250.7			48.3			30.0			23.1	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.1	40.0	10.9	17.0	12.3	49.7	11.2	16.7
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 34	* 13	* 12	* 8.2	* 36	12.4	12.7
Max Q Clear Time (g_c+I1), s	4.8	23.0	6.3	13.9	8.0	25.9	7.2	10.6
Green Ext Time (p_c), s	0.0	4.3	0.1	0.0	0.0	5.1	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	64.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

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

Appendix F: Signal Warrant Analysis Worksheets, Volumes, and Distribution

Existing Conditions
Peak Hour Volume Warrant (Rural Conditions)

Peak Hour: AM

Major Street: Bear Valley Road

Minor Street: 1st Avenue

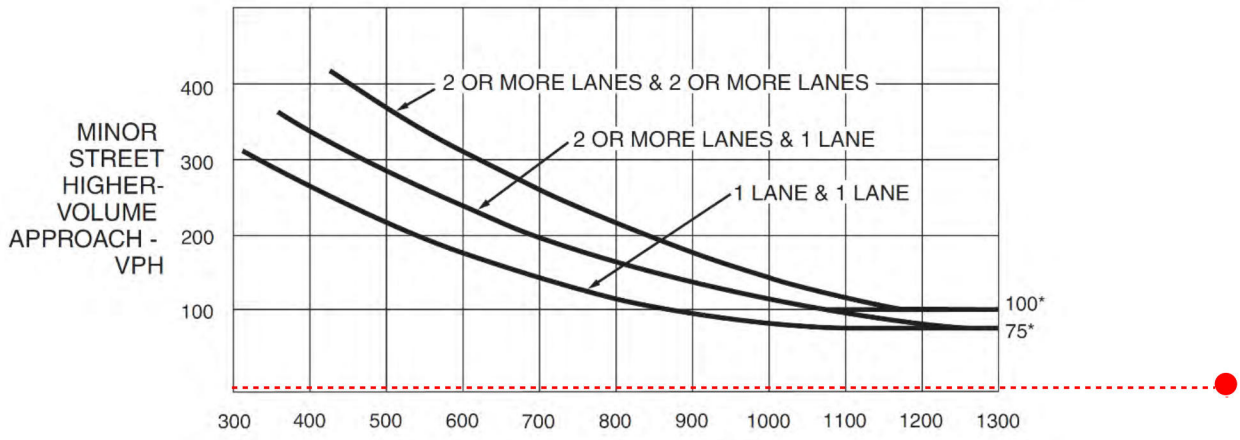
Total of Both Approaches (VPH): 2529
Number of Approach Lanes: 4

Higher Volume Approach (VPH): 5
Number of Approach Lanes: 2

SIGNAL WARRANT NOT SATISFIED

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Existing Conditions
Peak Hour Volume Warrant (Rural Conditions)

Peak Hour: PM

Major Street: Bear Valley Road

Minor Street: 1st Avenue

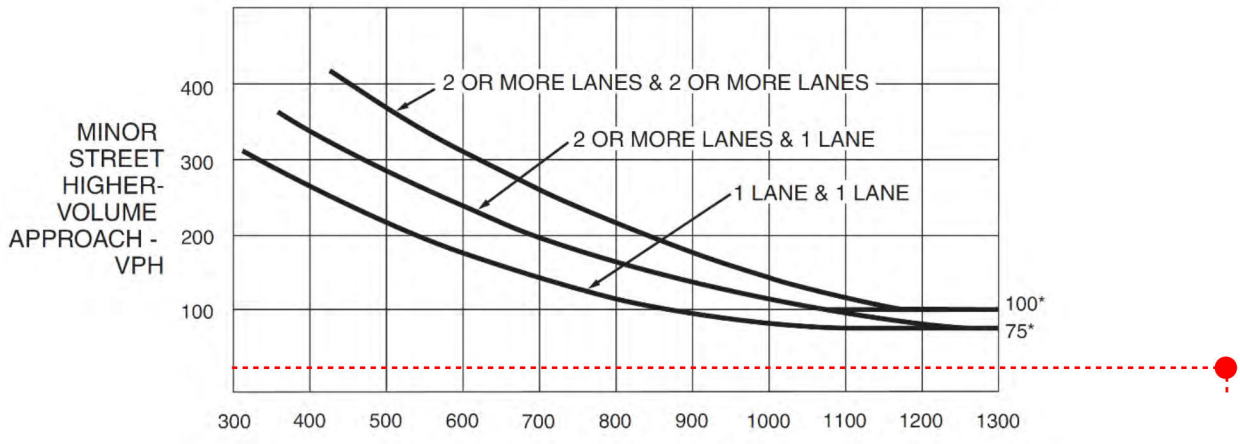
Total of Both Approaches (VPH): 3232
Number of Approach Lanes: 4

Higher Volume Approach (VPH): 32
Number of Approach Lanes: 2

SIGNAL WARRANT NOT SATISFIED

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Opening Year 2027 With Project Conditions
Peak Hour Volume Warrant (Rural Conditions)

Peak Hour: AM

Major Street: Bear Valley Road

Minor Street: 1st Avenue

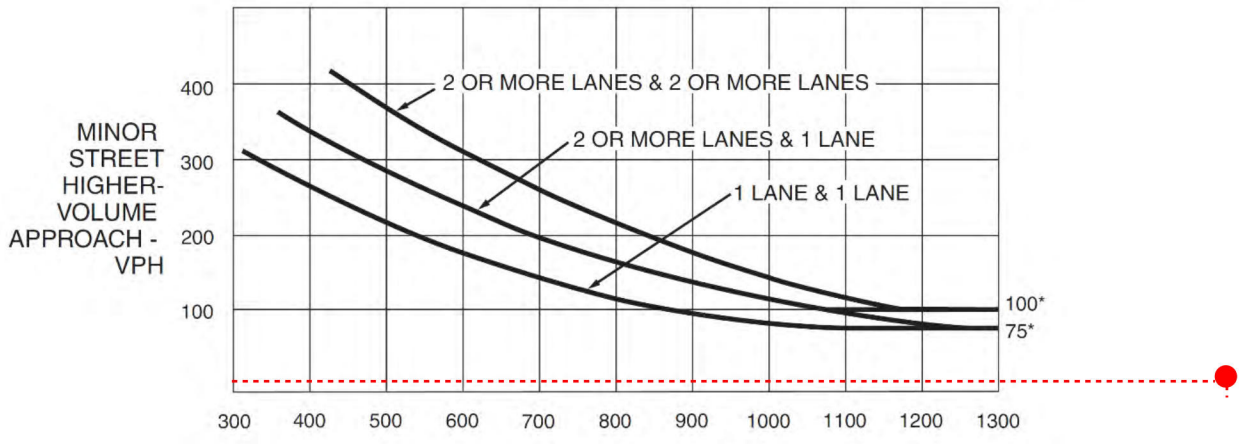
Total of Both Approaches (VPH): 2765
Number of Approach Lanes: 4

Higher Volume Approach (VPH): 20
Number of Approach Lanes: 2

SIGNAL WARRANT NOT SATISFIED

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Opening Year 2027 With Project Conditions
Peak Hour Volume Warrant (Rural Conditions)

Peak Hour: PM

Major Street: Bear Valley Road

Minor Street: 1st Avenue

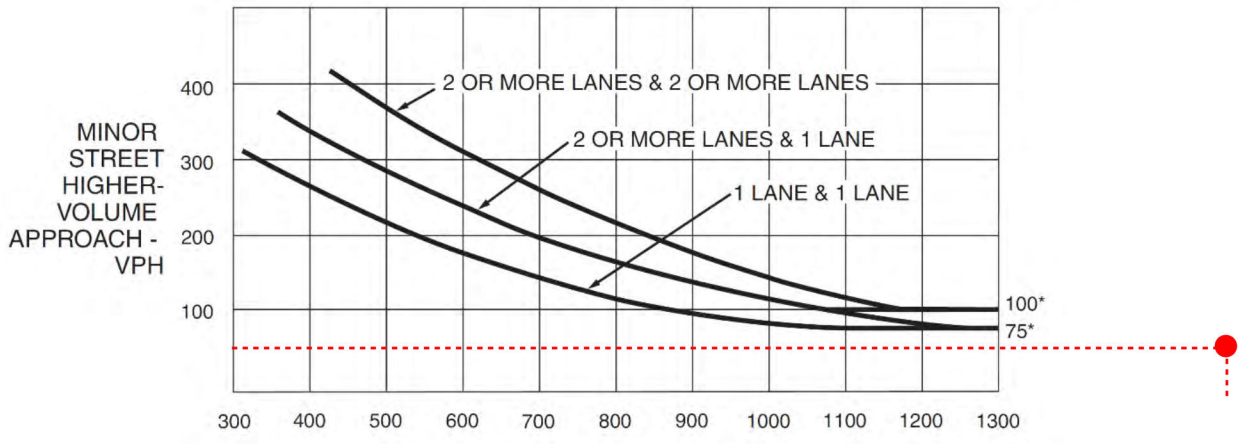
Total of Both Approaches (VPH): 3460
Number of Approach Lanes: 4

Higher Volume Approach (VPH): 65
Number of Approach Lanes: 2

SIGNAL WARRANT NOT SATISFIED

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Horizon Year 2037 With Project Conditions
Peak Hour Volume Warrant (Rural Conditions)

Peak Hour: AM

Major Street: Bear Valley Road

Minor Street: 1st Avenue

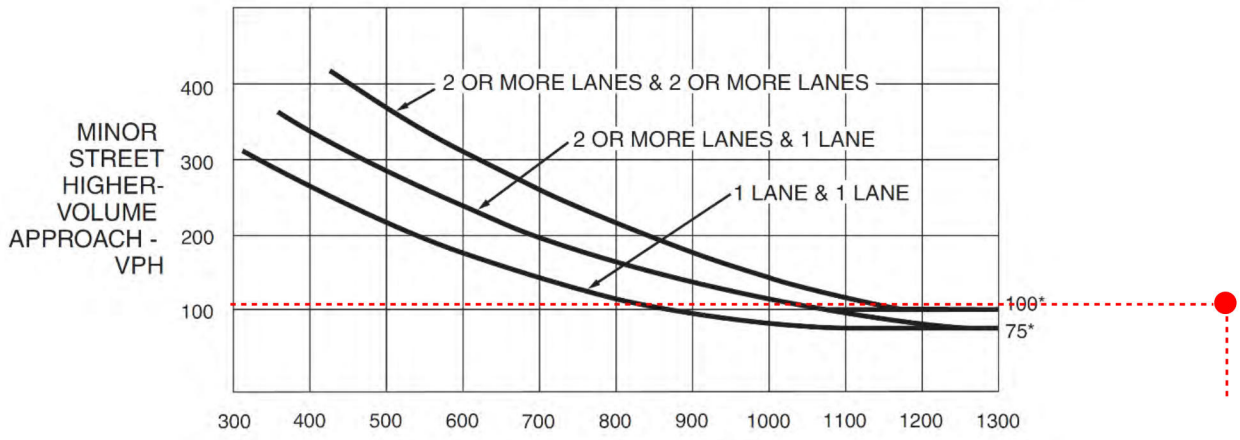
Total of Both Approaches (VPH): 3685
Number of Approach Lanes: 4

Higher Volume Approach (VPH): 105
Number of Approach Lanes: 2

SIGNAL WARRANT SATISFIED

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Horizon Year 2037 With Project Conditions
Peak Hour Volume Warrant (Rural Conditions)

Peak Hour: PM

Major Street: Bear Valley Road

Minor Street: 1st Avenue

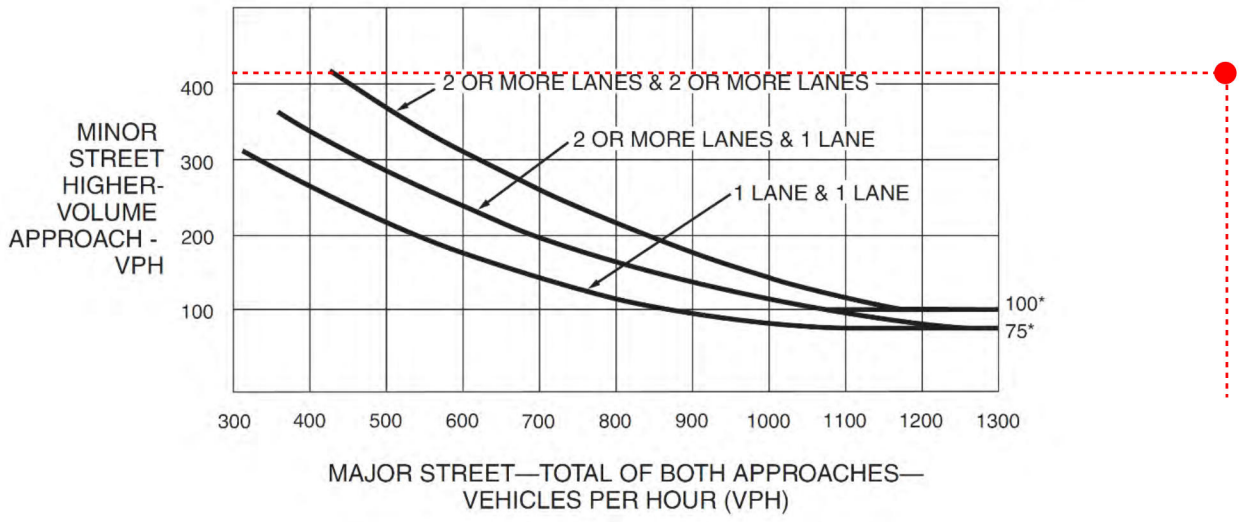
Total of Both Approaches (VPH): 4325
Number of Approach Lanes: 4

Higher Volume Approach (VPH): 410
Number of Approach Lanes: 2

SIGNAL WARRANT SATISFIED

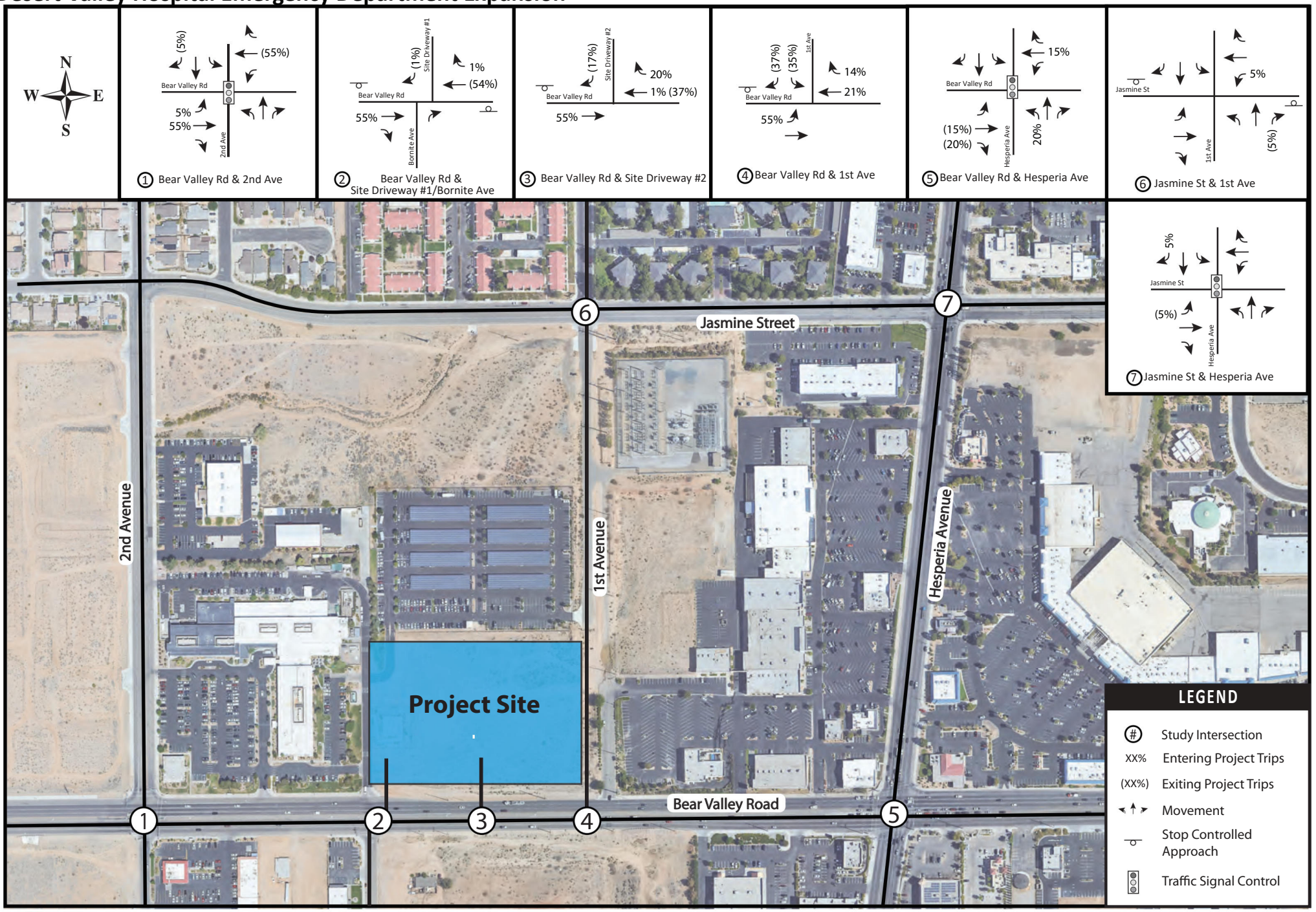
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



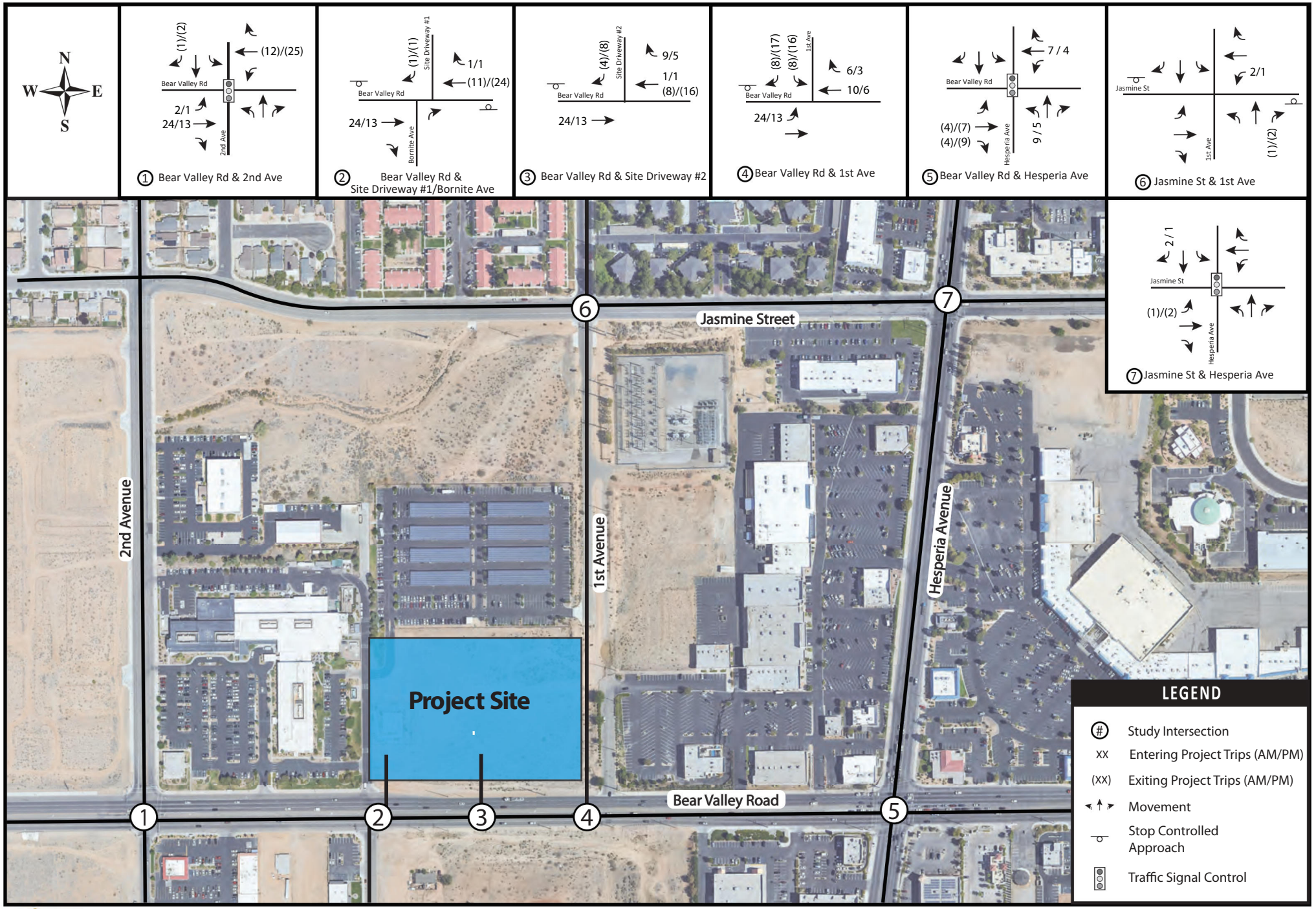
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Desert Valley Hospital Emergency Department Expansion



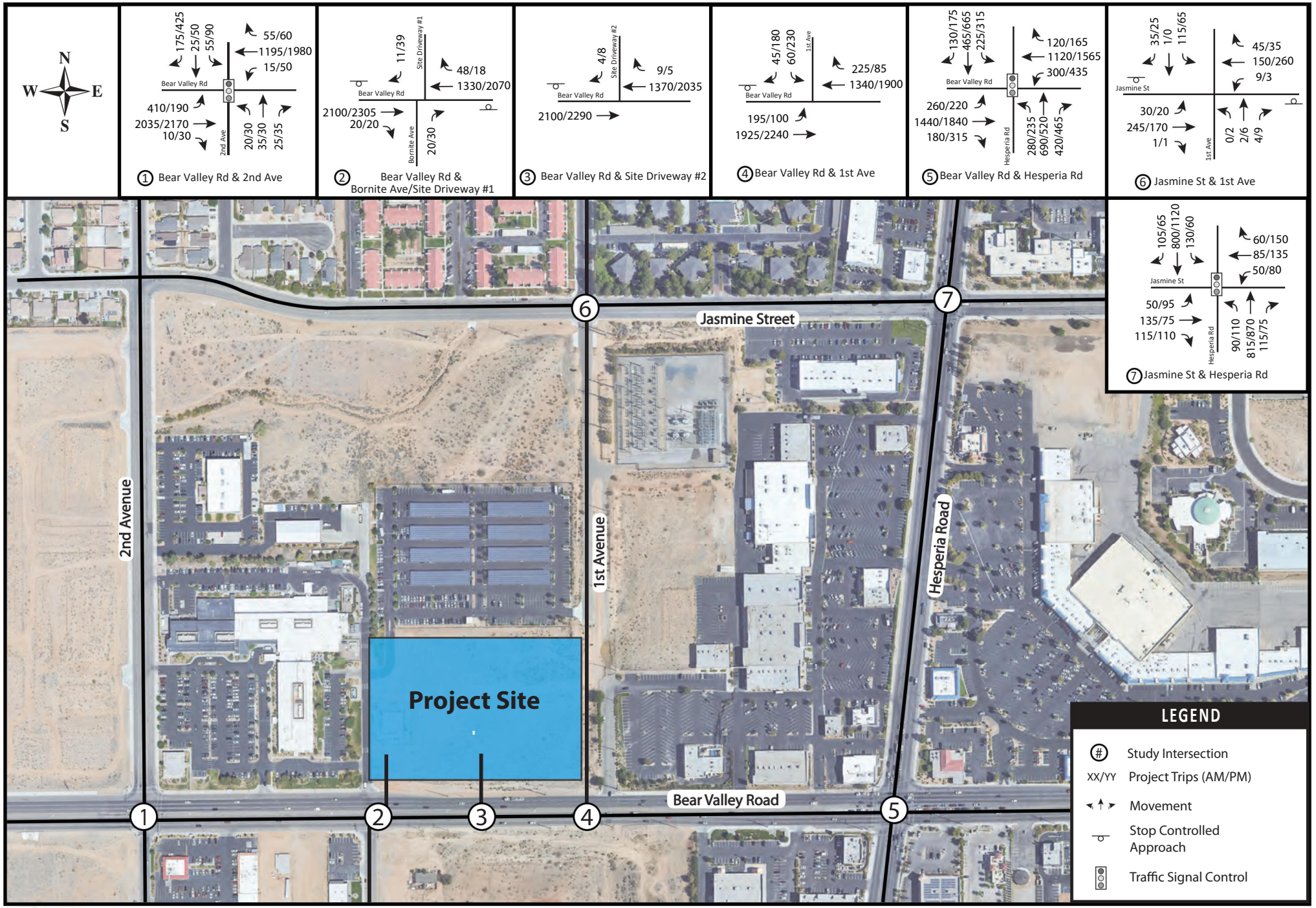
Appendix F Figure F-7
Project Trip Distribution with Signal Installation

Desert Valley Hospital Emergency Department Expansion



Appendix F Figure F-8
Project Trip Assignment with Signal Installation

Desert Valley Hospital Emergency Department Expansion



Appendix F Figure F-9
Horizon Year 2037 with Project Volumes and Signal Installation

Appendix G: With Improvements Intersection LOS Analysis Worksheets



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	442	2143	16	1258	58	84	63	26	189
v/c Ratio	0.67	0.58	0.16	0.50	0.07	0.49	0.66	0.11	0.33
Control Delay	41.4	11.3	39.1	14.7	2.4	40.9	79.4	35.4	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	11.3	39.1	14.7	2.4	40.9	79.4	35.4	13.1
Queue Length 50th (ft)	134	218	8	69	0	37	40	16	59
Queue Length 95th (ft)	179	417	m15	186	m12	82	#113	35	70
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	660	3665	105	2511	848	557	95	813	569
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.58	0.15	0.50	0.07	0.15	0.66	0.03	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

1: 2nd Ave & Bear Valley Rd

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	2025	10	15	1195	55	20	35	25	60	25	180
Future Volume (veh/h)	420	2025	10	15	1195	55	20	35	25	60	25	180
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	1703	1900	1900	1801	1900	1900	1900	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	442	2132	11	16	1258	58	21	37	26	63	26	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	1906	10	551	2807	871	65	55	34	80	307	494
Arrive On Green	0.14	0.36	0.36	0.32	0.54	0.54	0.07	0.07	0.07	0.05	0.16	0.16
Sat Flow, veh/h	3147	5325	27	1716	5187	1610	296	825	502	1716	1900	1610
Grp Volume(v), veh/h	442	1384	759	16	1258	58	84	0	0	63	26	189
Grp Sat Flow(s),veh/h/ln	1573	1729	1895	1716	1729	1610	1623	0	0	1716	1900	1610
Q Serve(g_s), s	14.0	35.8	35.8	0.6	14.7	1.7	3.4	0.0	0.0	3.6	1.2	9.2
Cycle Q Clear(g_c), s	14.0	35.8	35.8	0.6	14.7	1.7	5.0	0.0	0.0	3.6	1.2	9.2
Prop In Lane	1.00		0.01	1.00		1.00	0.25		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	456	1238	678	551	2807	871	154	0	0	80	307	494
V/C Ratio(X)	0.97	1.12	1.12	0.03	0.45	0.07	0.54	0.00	0.00	0.79	0.08	0.38
Avail Cap(c_a), veh/h	456	1238	678	551	2807	871	566	0	0	86	817	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	32.1	32.1	23.3	13.9	10.9	45.8	0.0	0.0	47.2	35.6	27.2
Incr Delay (d2), s/veh	34.0	64.5	72.0	0.0	0.1	0.0	3.0	0.0	0.0	35.7	0.1	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	7.3	24.6	28.4	0.2	5.0	0.6	2.2	0.0	0.0	2.3	0.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	96.6	104.1	23.3	14.0	11.0	48.7	0.0	0.0	82.9	35.7	27.7
LnGrp LOS	E	F	F	C	B	B	D	A	A	F	D	C
Approach Vol, veh/h		2585			1332			84			278	
Approach Delay, s/veh		95.4			14.0			48.7			41.0	
Approach LOS		F			B			D			D	

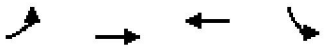
Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.3	41.0		21.7	19.0	59.3	9.5	12.2
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5
Max Green Setting (Gmax), s	6.2	* 36		* 43	14.5	27.5	* 5	* 33
Max Q Clear Time (g_c+I1), s	2.6	37.8		11.2	16.0	16.7	5.6	7.0
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	5.8	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		65.6
HCM 6th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.

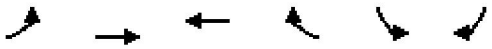
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	205	2032	1648	110
v/c Ratio	0.68	0.49	0.57	0.54
Control Delay	64.0	1.5	23.1	37.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	64.0	1.5	23.1	37.2
Queue Length 50th (ft)	139	55	317	43
Queue Length 95th (ft)	m189	17	377	94
Internal Link Dist (ft)		295	807	1362
Turn Bay Length (ft)	100			
Base Capacity (vph)	313	4114	2887	602
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.65	0.49	0.57	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	195	1930	1340	225	60	45
Future Volume (veh/h)	195	1930	1340	225	60	45
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1801	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	205	2032	1411	237	63	47
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	232	4205	2799	470	80	60
Arrive On Green	0.27	1.00	0.63	0.63	0.08	0.08
Sat Flow, veh/h	1716	5358	4643	750	976	728
Grp Volume(v), veh/h	205	2032	1091	557	111	0
Grp Sat Flow(s),veh/h/ln	1716	1729	1729	1765	1720	0
Q Serve(g_s), s	11.5	0.0	17.2	17.3	6.3	0.0
Cycle Q Clear(g_c), s	11.5	0.0	17.2	17.3	6.3	0.0
Prop In Lane	1.00			0.43	0.57	0.42
Lane Grp Cap(c), veh/h	232	4205	2164	1104	141	0
V/C Ratio(X)	0.89	0.48	0.50	0.50	0.79	0.00
Avail Cap(c_a), veh/h	257	4205	2164	1104	571	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.68	0.68	1.00	0.00
Uniform Delay (d), s/veh	35.8	0.0	10.2	10.2	45.0	0.0
Incr Delay (d2), s/veh	26.8	0.4	0.1	0.3	9.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.2	5.3	5.5	3.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.6	0.4	10.4	10.5	54.2	0.0
LnGrp LOS	E	A	B	B	D	A
Approach Vol, veh/h		2237	1648		111	
Approach Delay, s/veh		6.1	10.4		54.2	
Approach LOS		A	B		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.8		13.2	18.5	68.3
Change Period (Y+Rc), s		5.7		5.0	5.0	5.7
Max Green Setting (Gmax), s		56.1		33.2	15.0	36.1
Max Q Clear Time (g_c+I1), s		2.0		8.3	13.5	19.3
Green Ext Time (p_c), s		24.2		0.3	0.1	9.5

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	263	53	152	95	979	137	953
v/c Ratio	0.34	0.58	0.34	0.38	0.48	0.54	0.82	0.50
Control Delay	43.5	25.4	43.5	24.6	44.6	17.9	75.6	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	25.4	43.5	24.6	44.6	17.9	75.6	18.1
Queue Length 50th (ft)	29	40	29	25	51	204	78	198
Queue Length 95th (ft)	63	75	63	52	95	308	#178	322
Internal Link Dist (ft)		962		1302		1362		1054
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	310	690	310	640	204	1815	168	1895
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.38	0.17	0.24	0.47	0.54	0.82	0.50

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	135	115	50	85	60	90	815	115	130	800	105
Future Volume (veh/h)	50	135	115	50	85	60	90	815	115	130	800	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1801	1900	1900	1801	1900	1900	1801	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	53	142	121	53	89	63	95	858	121	137	842	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	207	163	70	237	155	120	953	134	517	1747	230
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.07	0.30	0.30	0.30	0.54	0.54
Sat Flow, veh/h	1716	1916	1516	1716	2094	1365	1716	3176	448	1716	3206	423
Grp Volume(v), veh/h	53	133	130	53	76	76	95	488	491	137	474	479
Grp Sat Flow(s),veh/h/ln	1716	1805	1627	1716	1805	1654	1716	1805	1819	1716	1805	1824
Q Serve(g_s), s	2.8	6.4	7.0	2.8	3.5	3.9	4.9	23.3	23.3	5.5	14.6	14.6
Cycle Q Clear(g_c), s	2.8	6.4	7.0	2.8	3.5	3.9	4.9	23.3	23.3	5.5	14.6	14.6
Prop In Lane	1.00		0.93	1.00		0.83	1.00		0.25	1.00		0.23
Lane Grp Cap(c), veh/h	70	194	175	70	205	187	120	541	546	517	984	994
V/C Ratio(X)	0.76	0.68	0.74	0.76	0.37	0.41	0.79	0.90	0.90	0.26	0.48	0.48
Avail Cap(c_a), veh/h	313	319	287	313	315	289	156	541	546	517	984	994
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	0.48	0.48	0.48	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	38.7	38.9	42.7	36.9	37.1	41.2	30.2	30.2	23.9	12.6	12.6
Incr Delay (d2), s/veh	15.2	4.2	6.0	15.2	1.1	1.4	9.6	11.5	11.4	0.3	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	3.0	1.4	1.5	1.6	2.3	10.9	11.0	2.1	5.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	42.9	45.0	57.9	38.0	38.5	50.9	41.7	41.6	24.1	14.3	14.3
LnGrp LOS	E	D	D	E	D	D	D	D	D	C	B	B
Approach Vol, veh/h		316			205			1074			1090	
Approach Delay, s/veh		46.3			43.4			42.5			15.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.2	33.0	9.0	14.8	11.1	55.1	8.3	15.5
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 27	* 16	* 16	* 8.2	* 29	16.4	15.7
Max Q Clear Time (g_c+I1), s	7.5	25.3	4.8	9.0	6.9	16.6	4.8	5.9
Green Ext Time (p_c), s	0.0	0.9	0.1	0.7	0.0	4.3	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

1: 2nd Ave & Bear Valley Rd

Timing Plan: PM Peak



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	205	2311	53	2074	63	101	105	53	458
v/c Ratio	0.43	0.68	0.51	0.74	0.07	0.55	0.53	0.16	0.72
Control Delay	41.7	15.3	59.1	24.5	3.6	41.0	43.5	32.7	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	15.3	59.1	24.5	3.6	41.0	43.5	32.7	27.9
Queue Length 50th (ft)	63	372	29	314	1	43	57	28	198
Queue Length 95th (ft)	96	493	m37	371	m3	91	100	58	274
Internal Link Dist (ft)		2536		572		628		1462	
Turn Bay Length (ft)	250		100		550		125		
Base Capacity (vph)	482	3418	105	2784	926	539	199	813	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.68	0.50	0.74	0.07	0.19	0.53	0.07	0.72

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	2165	30	50	1970	60	30	30	35	100	50	435
Future Volume (veh/h)	195	2165	30	50	1970	60	30	30	35	100	50	435
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	1703	1900	1900	1801	1900	1900	1900	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	205	2279	32	53	2074	63	32	32	37	105	53	458
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	1887	26	94	1841	572	112	112	102	416	555	575
Arrive On Green	0.06	0.36	0.36	0.11	0.71	0.71	0.19	0.19	0.19	0.05	0.29	0.29
Sat Flow, veh/h	3147	5271	74	1716	5187	1610	331	575	524	1716	1900	1610
Grp Volume(v), veh/h	205	1494	817	53	2074	63	101	0	0	105	53	458
Grp Sat Flow(s),veh/h/ln	1573	1729	1887	1716	1729	1610	1430	0	0	1716	1900	1610
Q Serve(g_s), s	6.5	35.8	35.8	2.9	35.5	1.2	0.9	0.0	0.0	4.8	2.0	25.5
Cycle Q Clear(g_c), s	6.5	35.8	35.8	2.9	35.5	1.2	5.1	0.0	0.0	4.8	2.0	25.5
Prop In Lane	1.00		0.04	1.00		1.00	0.32		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	205	1238	675	94	1841	572	325	0	0	416	555	575
V/C Ratio(X)	1.00	1.21	1.21	0.56	1.13	0.11	0.31	0.00	0.00	0.25	0.10	0.80
Avail Cap(c_a), veh/h	205	1238	675	106	1841	572	506	0	0	416	817	797
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	32.1	32.1	43.4	14.5	9.5	34.4	0.0	0.0	28.8	25.8	28.9
Incr Delay (d2), s/veh	63.5	100.9	107.8	5.1	64.6	0.4	0.5	0.0	0.0	0.3	0.1	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	30.9	35.0	1.3	15.6	0.5	2.1	0.0	0.0	1.9	0.9	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.3	133.0	139.9	48.5	79.1	9.9	35.0	0.0	0.0	29.1	25.8	32.8
LnGrp LOS	F	F	F	D	F	A	C	A	A	C	C	C
Approach Vol, veh/h		2516			2190			101			616	
Approach Delay, s/veh		133.4			76.3			35.0			31.6	
Approach LOS		F			E			C			C	

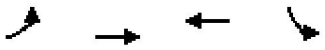
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	41.0		34.7	11.0	40.7	9.8	24.9				
Change Period (Y+Rc), s	5.2	* 5.2		* 5.5	4.5	5.2	* 4.8	* 5.5				
Max Green Setting (Gmax), s	6.2	* 36		* 43	6.5	35.5	* 5	* 33				
Max Q Clear Time (g_c+I1), s	4.9	37.8		27.5	8.5	37.5	6.8	7.1				
Green Ext Time (p_c), s	0.0	0.0		1.7	0.0	0.0	0.0	0.6				

Intersection Summary			
HCM 6th Ctrl Delay		97.0	
HCM 6th LOS		F	

Notes

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

4: Bear Valley Rd & 1st Ave

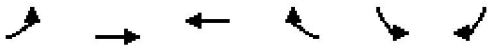


Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	105	2358	2089	431
v/c Ratio	0.68	0.73	0.85	0.86
Control Delay	72.9	5.9	25.6	48.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	72.9	5.9	25.6	48.5
Queue Length 50th (ft)	55	43	305	234
Queue Length 95th (ft)	m#130	49	m343	339
Internal Link Dist (ft)		288	810	1360
Turn Bay Length (ft)	100			
Base Capacity (vph)	155	3210	2470	582
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.68	0.73	0.85	0.74

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	2240	1900	85	230	180
Future Volume (veh/h)	100	2240	1900	85	230	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1801	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	105	2358	2000	89	242	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	120	2972	2306	102	262	204
Arrive On Green	0.07	0.57	0.45	0.45	0.27	0.27
Sat Flow, veh/h	1716	5358	5262	226	962	751
Grp Volume(v), veh/h	105	2358	1357	732	432	0
Grp Sat Flow(s),veh/h/ln	1716	1729	1729	1859	1717	0
Q Serve(g_s), s	6.1	35.6	35.3	35.6	24.5	0.0
Cycle Q Clear(g_c), s	6.1	35.6	35.3	35.6	24.5	0.0
Prop In Lane	1.00			0.12	0.56	0.44
Lane Grp Cap(c), veh/h	120	2972	1566	842	467	0
V/C Ratio(X)	0.87	0.79	0.87	0.87	0.92	0.00
Avail Cap(c_a), veh/h	120	2972	1566	842	549	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.26	0.26	1.00	0.00
Uniform Delay (d), s/veh	46.1	16.7	24.6	24.7	35.4	0.0
Incr Delay (d2), s/veh	46.1	1.5	1.9	3.5	19.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	12.1	13.1	14.6	12.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	92.2	18.3	26.5	28.2	55.2	0.0
LnGrp LOS	F	B	C	C	E	A
Approach Vol, veh/h		2463	2089		432	
Approach Delay, s/veh		21.4	27.1		55.2	
Approach LOS		C	C		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		63.0		32.2	12.0	51.0
Change Period (Y+Rc), s		5.7		5.0	5.0	5.7
Max Green Setting (Gmax), s		57.3		32.0	7.0	45.3
Max Q Clear Time (g_c+I1), s		37.6		26.5	8.1	37.6
Green Ext Time (p_c), s		15.5		0.8	0.0	6.3

Intersection Summary		
HCM 6th Ctrl Delay		26.7
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	232	1842	195	458	1647	174	247	547	489	432	1016
v/c Ratio	0.65	0.97	0.24	1.47	0.89	0.18	1.13	1.06	0.98	0.77	1.14
Control Delay	55.0	33.5	5.6	261.3	37.9	5.1	144.7	100.0	56.8	48.7	112.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	33.5	5.6	261.3	37.9	5.1	144.7	100.0	56.8	48.7	112.4
Queue Length 50th (ft)	63	318	8	~207	358	24	~94	~214	~142	134	~395
Queue Length 95th (ft)	m95	#520	m38	#306	424	51	#173	#336	#420	186	#526
Internal Link Dist (ft)		810			1732			593			1360
Turn Bay Length (ft)	330		150	280		400	145		260	175	
Base Capacity (vph)	356	1895	828	312	1844	1012	218	515	499	625	889
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.97	0.24	1.47	0.89	0.17	1.13	1.06	0.98	0.69	1.14

Intersection Summary

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1750	185	435	1565	165	235	520	465	410	790	175
Future Volume (veh/h)	220	1750	185	435	1565	165	235	520	465	410	790	175
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	1703	1900	1900	1703	1900	1900	1703	1900	1900	1703	1900	1900
Adj Flow Rate, veh/h	232	1842	195	458	1647	174	247	547	489	432	832	184
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1904	704	1353	3579	1369	220	612	965	505	732	162
Arrive On Green	0.11	0.37	0.37	0.43	0.69	0.69	0.07	0.17	0.17	0.16	0.25	0.25
Sat Flow, veh/h	3147	5187	1610	3147	5187	1610	3147	3610	1610	3147	2938	650
Grp Volume(v), veh/h	232	1842	195	458	1647	174	247	547	489	432	511	505
Grp Sat Flow(s),veh/h/ln	1573	1729	1610	1573	1729	1610	1573	1805	1610	1573	1805	1783
Q Serve(g_s), s	7.1	34.9	0.8	9.7	14.4	1.8	7.0	14.8	9.2	13.4	24.9	24.9
Cycle Q Clear(g_c), s	7.1	34.9	0.8	9.7	14.4	1.8	7.0	14.8	9.2	13.4	24.9	24.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	359	1904	704	1353	3579	1369	220	612	965	505	449	444
V/C Ratio(X)	0.65	0.97	0.28	0.34	0.46	0.13	1.12	0.89	0.51	0.86	1.14	1.14
Avail Cap(c_a), veh/h	359	1904	704	1353	3579	1369	220	612	965	629	449	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.57	1.00	1.00	1.00	1.00	1.00	1.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	42.4	31.1	18.0	19.0	7.0	1.3	46.5	40.6	15.8	40.9	37.5	37.6
Incr Delay (d2), s/veh	5.1	9.7	0.6	0.7	0.4	0.2	97.1	15.5	0.4	6.2	78.2	78.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	14.8	2.7	3.3	4.0	0.1	5.6	7.5	5.6	5.3	20.0	19.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	40.8	18.6	19.7	7.5	1.4	143.6	56.1	16.3	47.1	115.8	116.0
LnGrp LOS	D	D	B	B	A	A	F	E	B	D	F	F
Approach Vol, veh/h		2269			2279			1283			1448	
Approach Delay, s/veh		39.5			9.5			57.8			95.4	
Approach LOS		D			A			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.3	42.0	12.7	31.0	16.0	75.3	21.0	22.7
Change Period (Y+Rc), s	* 5.3	* 5.3	* 5.7	* 6.1	* 4.6	* 5.3	5.0	5.7
Max Green Setting (Gmax), s	* 10	* 37	* 7	* 25	* 11	* 36	20.0	12.3
Max Q Clear Time (g_c+I1), s	11.7	36.9	9.0	26.9	9.1	16.4	15.4	16.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	4.2	0.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	195	84	300	116	995	63	1247
v/c Ratio	0.52	0.50	0.38	0.62	0.63	0.56	0.41	0.74
Control Delay	47.2	21.1	39.9	23.5	55.9	20.3	46.4	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	21.1	39.9	23.5	55.9	20.3	46.4	24.8
Queue Length 50th (ft)	54	22	44	40	62	224	34	325
Queue Length 95th (ft)	103	54	86	77	#152	324	74	#440
Internal Link Dist (ft)		969		1302		1360		1085
Turn Bay Length (ft)	100		125		130		130	
Base Capacity (vph)	234	533	262	602	185	1778	168	1685
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.37	0.32	0.50	0.63	0.56	0.38	0.74

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	75	110	80	135	150	110	870	75	60	1120	65
Future Volume (veh/h)	95	75	110	80	135	150	110	870	75	60	1120	65
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	1801	1900	1900	1801	1900	1900	1801	1900	1900	1801	1900	1900
Adj Flow Rate, veh/h	100	79	116	84	142	158	116	916	79	63	1179	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	172	153	162	219	196	144	1270	110	313	1699	98
Arrive On Green	0.07	0.10	0.10	0.09	0.12	0.12	0.08	0.38	0.38	0.18	0.49	0.49
Sat Flow, veh/h	1716	1805	1610	1716	1805	1610	1716	3363	290	1716	3469	200
Grp Volume(v), veh/h	100	79	116	84	142	158	116	492	503	63	613	634
Grp Sat Flow(s),veh/h/ln	1716	1805	1610	1716	1805	1610	1716	1805	1848	1716	1805	1864
Q Serve(g_s), s	5.2	3.7	6.3	4.2	6.8	8.6	6.0	21.0	21.0	2.8	23.6	23.7
Cycle Q Clear(g_c), s	5.2	3.7	6.3	4.2	6.8	8.6	6.0	21.0	21.0	2.8	23.6	23.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.11
Lane Grp Cap(c), veh/h	127	172	153	162	219	196	144	682	698	313	884	913
V/C Ratio(X)	0.79	0.46	0.76	0.52	0.65	0.81	0.81	0.72	0.72	0.20	0.69	0.69
Avail Cap(c_a), veh/h	236	239	213	255	255	227	156	682	698	313	884	913
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	0.50	0.50	0.50	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	38.5	39.7	38.8	37.7	38.5	40.5	23.9	23.9	31.2	17.7	17.8
Incr Delay (d2), s/veh	10.3	1.9	9.7	2.5	4.5	16.9	13.5	3.3	3.2	0.3	4.5	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.7	2.8	1.8	3.1	4.2	2.9	8.6	8.8	1.1	9.4	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	40.5	49.4	41.3	42.2	55.4	54.0	27.3	27.2	31.5	22.2	22.1
LnGrp LOS	D	D	D	D	D	E	D	C	C	C	C	C
Approach Vol, veh/h		295			384			1111			1310	
Approach Delay, s/veh		47.7			47.5			30.0			22.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	40.0	13.8	13.7	12.3	50.2	11.2	16.2
Change Period (Y+Rc), s	* 6.1	* 6	* 5.3	* 5.1	* 4.8	* 6.1	4.6	5.3
Max Green Setting (Gmax), s	* 8.9	* 34	* 13	* 12	* 8.2	* 36	12.4	12.7
Max Q Clear Time (g_c+I1), s	4.8	23.0	6.2	8.3	8.0	25.7	7.2	10.6
Green Ext Time (p_c), s	0.0	4.3	0.1	0.3	0.0	5.2	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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