

# Drainage Report



Shephard ▲ Wesnitzer, Inc.

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Sedona, AZ 86336

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# **PRELIMINARY DRAINAGE REPORT for THE VILLAGE AT SADDLEROCK CROSSING**

**APNs: 408-26-004B, 408-26-004C, 408-26-009A, 408-26-009C,  
408-26-010, 408-26-011, 408-26-012, 408-26-013,  
408-26-014, 408-26-086A and 408-26-088  
Sedona, Arizona**

**Prepared for:  
Baney Corporation  
475 NE Bellevue Dr. Suite 210  
Bend, OR 97701**

Job # 16034

SEDONA

COTTONWOOD

FLAGSTAFF

PRESCOTT

## TABLE OF CONTENTS

<b><u>Introduction</u></b> .....	<b>1</b>
<b><u>Objective</u></b> .....	<b>1</b>
<b><u>Procedure</u></b> .....	<b>2</b>
<b><u>Results</u></b> .....	<b>3</b>
<b><u>Conclusion</u></b> .....	<b>3</b>
<b><u>References</u></b> .....	<b>3</b>

## **APPENDIX**

Vicinity Map  
FEMA FIRM Panel  
City of Sedona Flood Plain Management Study  
City of Sedona Storm Water Master Plan  
Pre-Developed Drainage Exhibit  
NOAA Atlas 14 Point Precipitation Frequency Estimate Table  
Grading and Utilities Concept Plan

## **Introduction**

The proposed project site is located in Sedona, Arizona, south of State Route (SR)-89A, and between Saddlerock Circle and Elk Road. The project site is located on approximately 6.36 acres of vacant land, positioned in a portion of sections 12 & 13, Township 17 North, Range 5 East Gila and Salt River Meridian. A vicinity map is in the Appendix.

The proposed project consists of 4 hotel units, a lobby/restaurant building, 4 multifamily housing units, a parking structure, a parking lot, and the paving of a connector road from Saddlerock Circle to the intersection at Soldiers Pass Road and SR-89A. The proposed project is located on parcels 408-26-004B, 408-26-004C, 408-26-009A, 408-26-009C, 408-26-010, 408-26-011, 408-26-012, 408-26-013, 408-26-014, 408-26-086A and 408-26-088. The existing site has 70+ trees and shrubs, and one concrete driveway entrance along SR-89A on the north side of the site. An existing ditch on the west side of the property collects on-site and off-site runoff from the north, south, and east. The ditch has a 36" culvert which takes runoff west under Saddlerock Circle. Surrounding developments include the Saddlerock Homes subdivision to the west and south of the project site, commercial property to the west, north and east, and the Sedona Elks Lodge to the east.

The project is located in Zone X of the FEMA Flood Insurance Rate Map, map number 04025C1435G, effective September 3, 2010. Zone X is described as an area determined to be outside the 500-year floodplain. The preliminary FEMA Flood Insurance Rate Map number 04025C1435H, dated June 30, 2020, shows no changes to the flood hazard area designation for the site. The Appendix contains a portion of the FIRM near the project area.

The City of Sedona Flood Plain Management Study places part of the proposed project site within the 100-year floodplain boundary. This study also places the site in basin number 77, with a flow of 134 cfs for the 100-year storm event. The City of Sedona Storm Water Master Plan places the site in basin B77B, with a flow of 256 cfs for the 100-year event. Information from these studies can be found in the Appendix.

## **Objective**

The objective of this report is to ascertain the impact the proposed development will have on the runoff characteristics of the site and to determine the detention volume needed to attenuate the additional post-development flows. The design of the proposed drainage control structures will be in accordance with City of Sedona and Yavapai County drainage criteria.

## **Procedure**

The total project watershed is approximately 44.98 acres and is a mixture of developed residential housing, undeveloped native land, and previously graded vacant land. The project site slopes from east to west towards Saddlerock Circle, with an average slope of 5%. Off-site runoff from commercial property to the east drains west through the site. A catch basin on Saddlerock Circle collects runoff from SR-89A and flows through an 18" pipe to the ditch on the west side of the project site. Off-site flows from the neighborhood to the south of the site are routed through a network of ditches and culverts, which enters the ditch on the southwest corner of the site. Flow also enters the site from the cul-de-sac (end of Saddlerock Lane) and from the two properties to the east of Saddlerock Lane. When the pipe on Saddlerock Lane is full, runoff overtops the ditch on the east of Saddlerock Lane and enters the site at the cul-de-sac. On-site topographic survey was performed by Shephard Wesnitzer, Inc. in September 2018. Off-site topographic information was used from the 2007 City of Sedona Aerial Survey. The pre-development drainage map is provided in the Appendix.

The development of the project site includes the addition of approximately 3.66 acres of impervious surfaces. The resulting storm water runoff is proposed to be routed through a storm drain system from the east side of the project site across the proposed development to the west, where it then outlets into the existing 36" culvert under Saddlerock Circle. The proposed rainwater harvesting system, consisting of tanks collecting storm water from the hotel unit roofs, could potentially offset a portion of the direct storm runoff from the site, if approved. To mitigate increased peak flows from the development of the project site, an underground detention structure is proposed.

The design rainfall data was taken from the site specific NOAA Atlas 14 point precipitation frequency estimates table, as shown in the Appendix. The required storage volume of storm water runoff from the development of the site was determined based on retaining the storm runoff volume for the entire 100-year, 2-hour storm event from all added impervious areas of the project site, per the Yavapai County Drainage Manual.

Off-site flows from the northern portion of Saddlerock Circle and SR-89A will be collected through a catch basin and conveyed to the 36" culvert under Saddlerock Circle via a storm drain pipe. Off-site flows from the east along Elk Road will be collected through catch basins and directed under the proposed parking structure into the proposed storm drain system. Off-site flows from the south will also be conveyed to the proposed storm drain system through storm drain inlets. The development of the Village at Saddlerock Crossing project will not alter the existing off-site flowrate conditions with the proposed detention system.

## **Results**

The underground detention structure is proposed to be located within the parking lot on the west side of the site, and will require approximately 36,200 ft.<sup>3</sup> of volume to attenuate peak flows to pre-development rates. This volume can be attained through the placement of 1,280 ft. of 6' corrugated metal pipe beneath the parking lot. The first flush volume of approximately 6700 ft.<sup>3</sup> will be retained below the basin outlet, with the excess storm water runoff being conveyed to the 36" culvert under Saddlerock Circle. Refer to the Grading and Utilities Concept Plan for preliminary details, grades, finished elevations, and locations.

## **Conclusion**

A runoff volume for the 100-year, 2 hour storm event was calculated for the project watershed to determine a required detention volume of 36,200 ft.<sup>3</sup>. Runoff from the development of the site, along with the off-site flows to the west, east, and south will be conveyed into the proposed underground detention basin through a storm drain system. The underground detention structure will discharge to the west through the existing 36" culvert underneath Saddlerock Circle.

The design concepts in this report will ensure that the drainage integrity of the site is sustained with proper maintenance activity. Activities include frequent clearing of debris and sediment from the storm drain inlets and detention areas, disturbed slope treatment and erosion control. Frequent monitoring will ensure expedient remedies to common problems such as erosion, sedimentation, and flow obstructions.

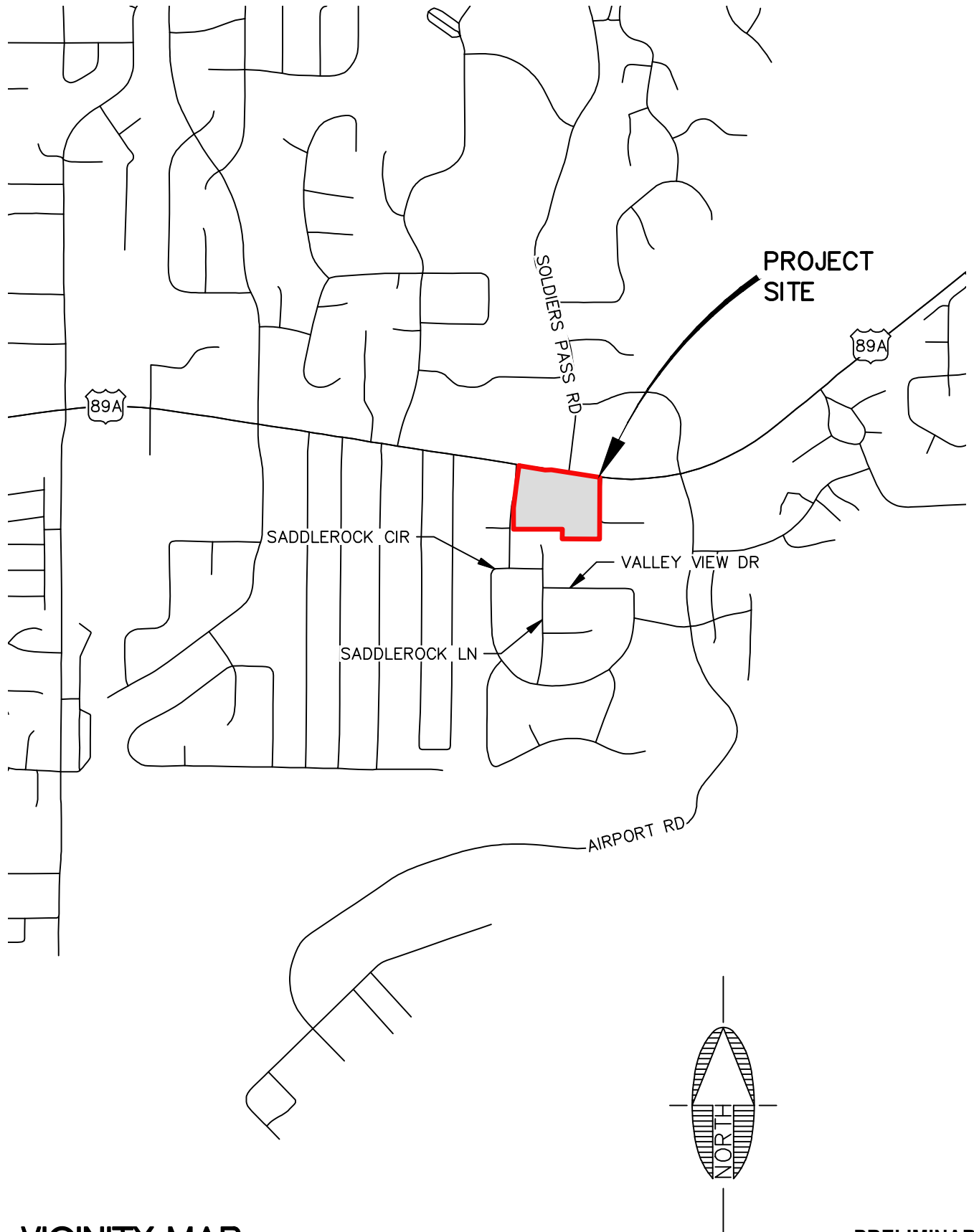
## **References**

*City of Sedona Flood Plain Management Study*, City of Sedona, 1994

*City of Sedona Storm Water Master Plan*, City of Sedona, 2005

*Yavapai County Drainage Design Manual*, Yavapai County Flood Control District, 2015

## **APPENDIX**



**VICINITY MAP**

NO SCALE

**PRELIMINARY**

NOT FOR CONSTRUCTION,  
BIDDING OR RECORDING



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Sedona, AZ 86336  
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JOB NO.	16034
DATE	APR 21
SCALE	NO SCALE
DRAWN	EGM
DESIGN	JTL
CHECKED	JTL

THE VILLAGE AT SADDLEROCK CROSSING

SEDONA  
ARIZONA

VICINITY MAP

SHEET

**1**

OF 1



# National Flood Hazard Layer FIRMette



34°51'57.64"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **10/26/2018 at 4:25:24 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

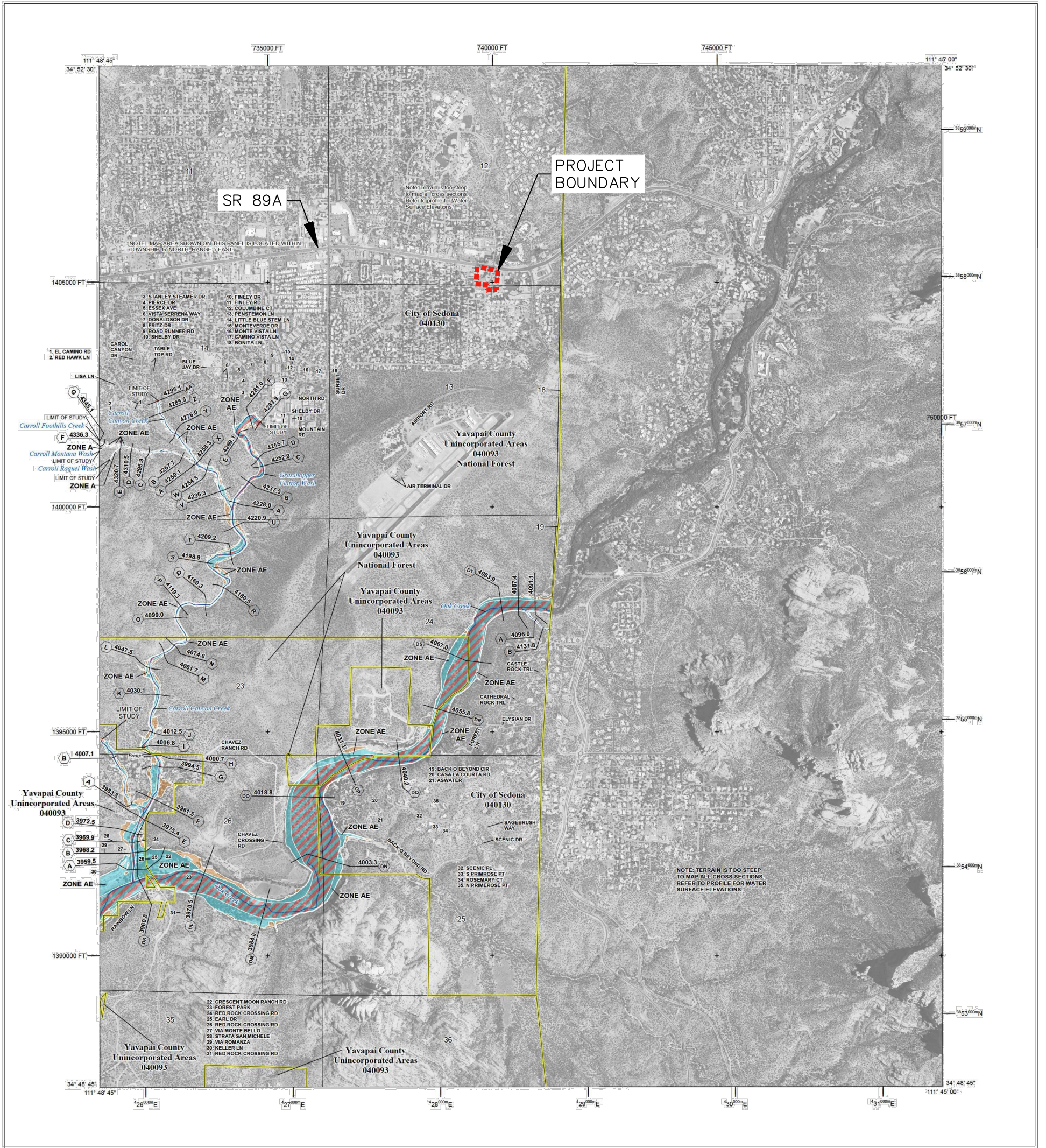
USGS The National Map: Orthoimagery. Data refreshed October 2017.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

34°51'28.11"N

111°46'42.07"W





**FLOOD HAZARD INFORMATION**

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT. THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTPS://MSC.FEMA.GOV](https://msc.fema.gov)

	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes, Zone X
	Area with Flood Risk due to Levee Zone D
	NO SCREEN Areas of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

**NOTES TO USERS**

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-ANAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at <https://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

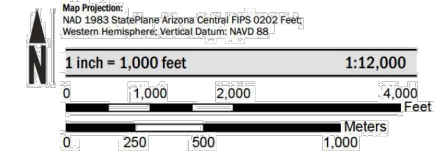
Communities adjoining land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

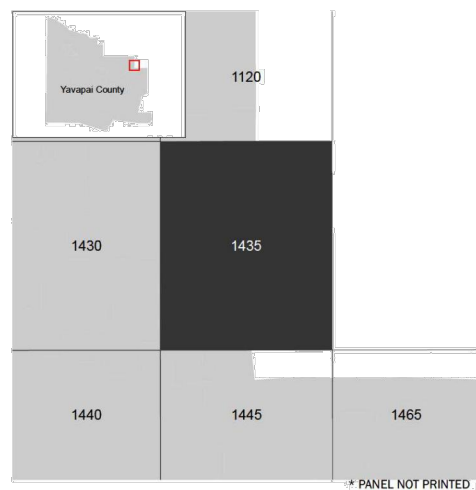
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). This information was derived from digital orthophotography at a 2-foot resolution from photography dated 2011.

**SCALE**



**PANEL LOCATOR**



**National Flood Insurance Program**

**NATIONAL FLOOD INSURANCE PROGRAM**  
FLOOD INSURANCE RATE MAP

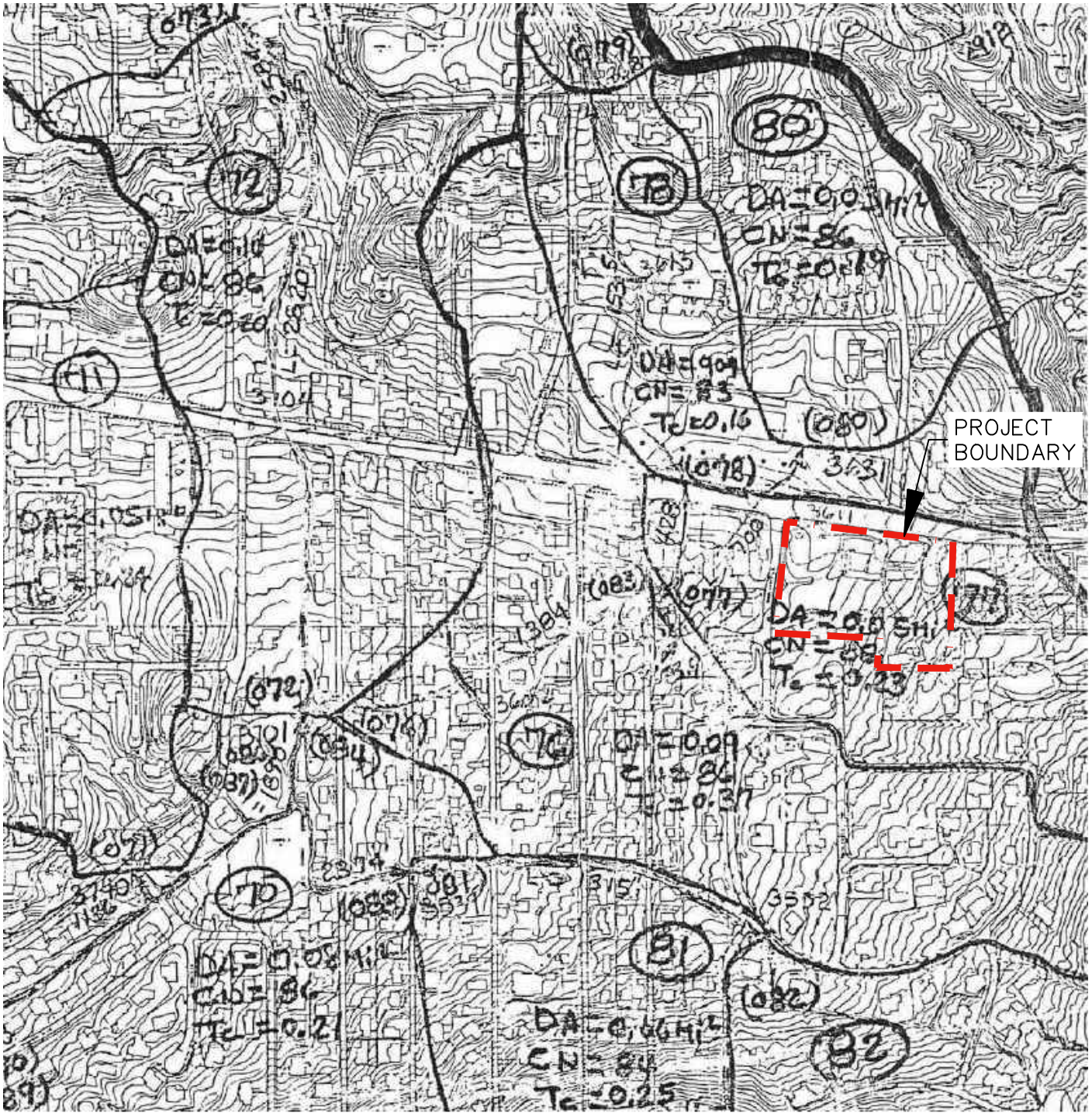
**YAVAPAI COUNTY, ARIZONA**  
and Incorporated Areas

PANEL 1795 OF 3900

Panel Contains:  
COMMUNITY: YAVAPAI COUNTY  
NUMBER: 040093  
PANEL: 1795  
SUFFIX: 1

**PRELIMINARY**  
6/30/2020

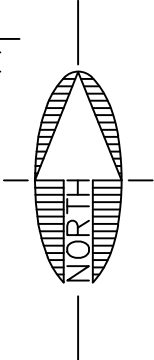
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MAP REVISED

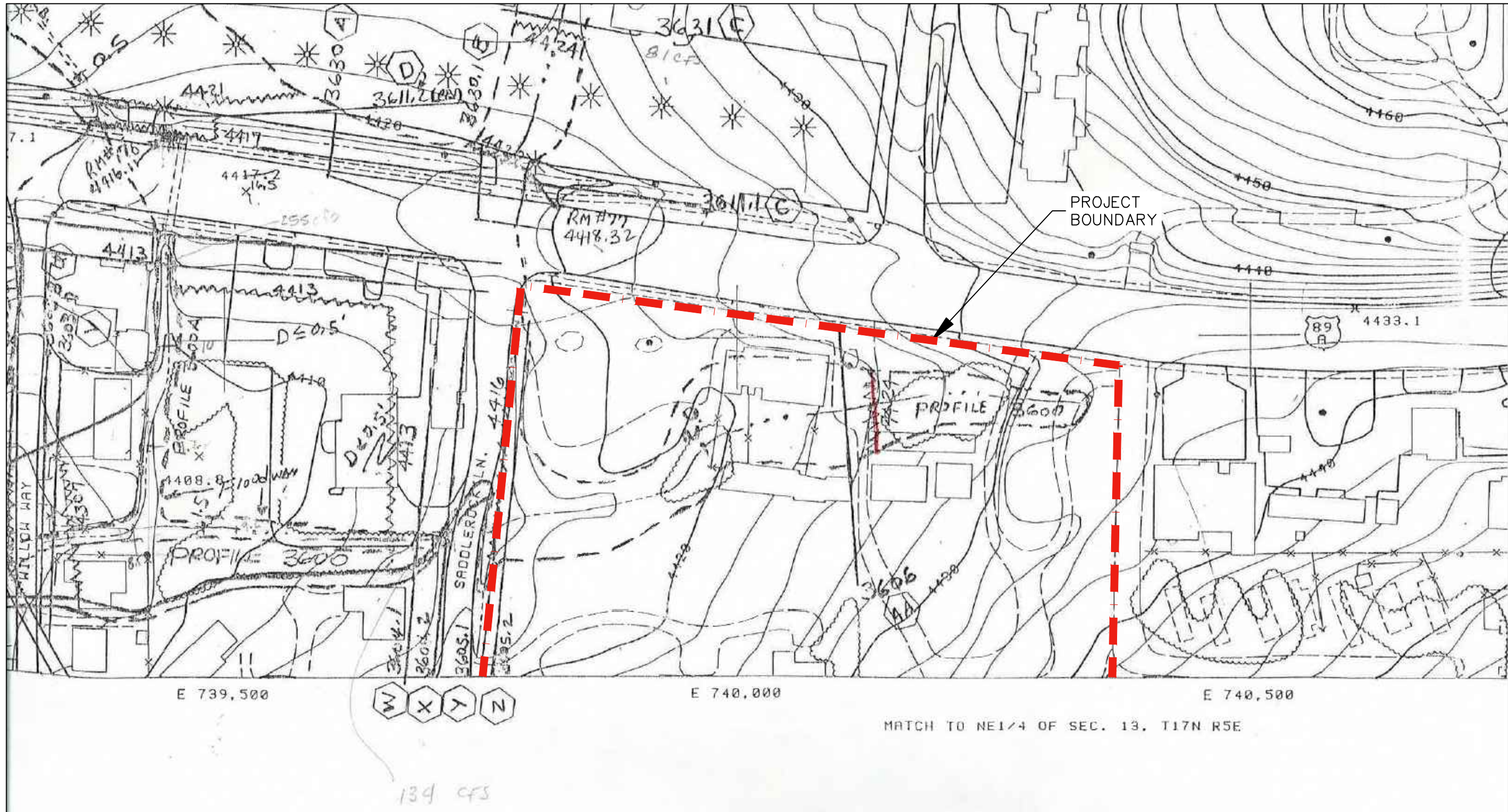


**CITY OF SEDONA  
FLOODPLAIN MANAGEMENT STUDY, 1994**

NO SCALE

PORION OF OVERALL DRAINAGE BASIN MAP

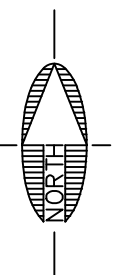


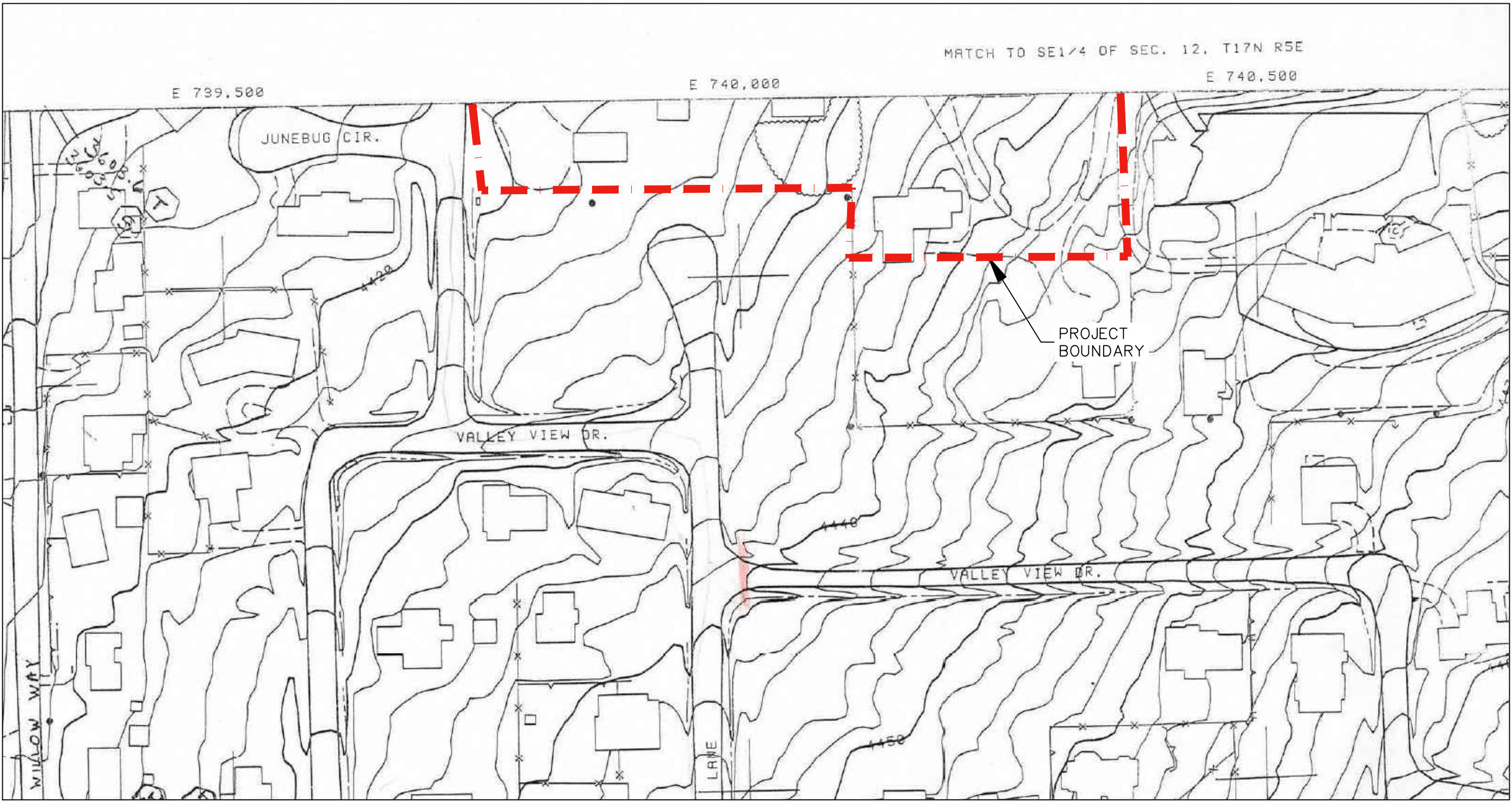


# CITY OF SEDONA FLOODPLAIN MANAGEMENT STUDY, 1994

PORTION OF SE QUARTER SECTION 12 MAP

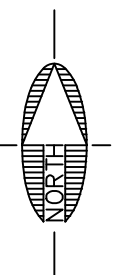
NO SCALE



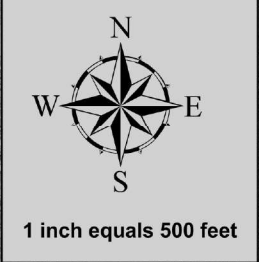
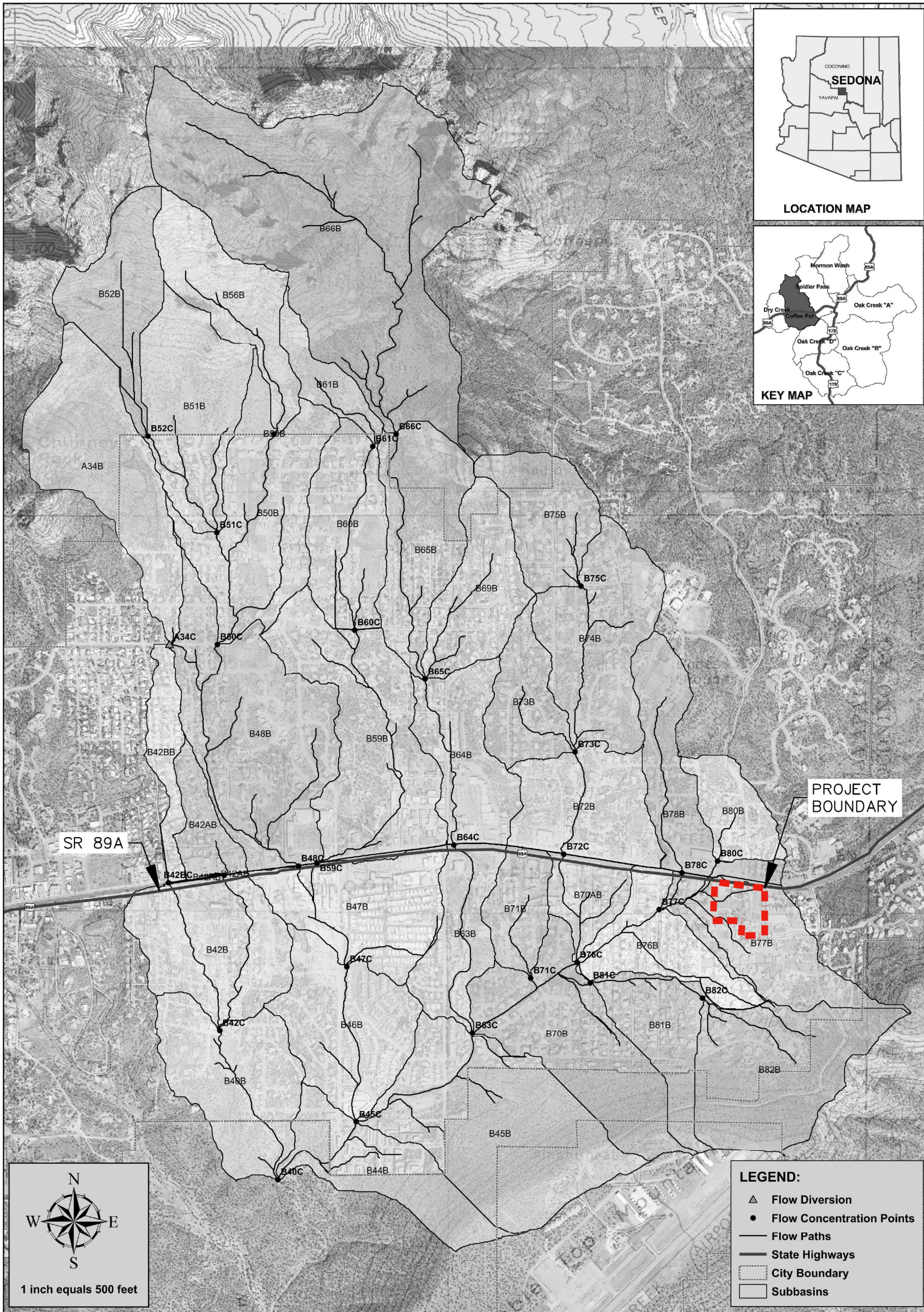


**CITY OF SEDONA**  
**FLOODPLAIN MANAGEMENT STUDY, 1994**  
PORTION OF NE QUARTER SECTION 13 MAP

NO SCALE







PREPARED FOR:



CITY OF SEDONA

**COFFEE POT DRAINAGE MAP  
EXHIBIT NO. 2**



CITY OF SEDONA STORM WATER MASTER PLAN

PREPARED BY:

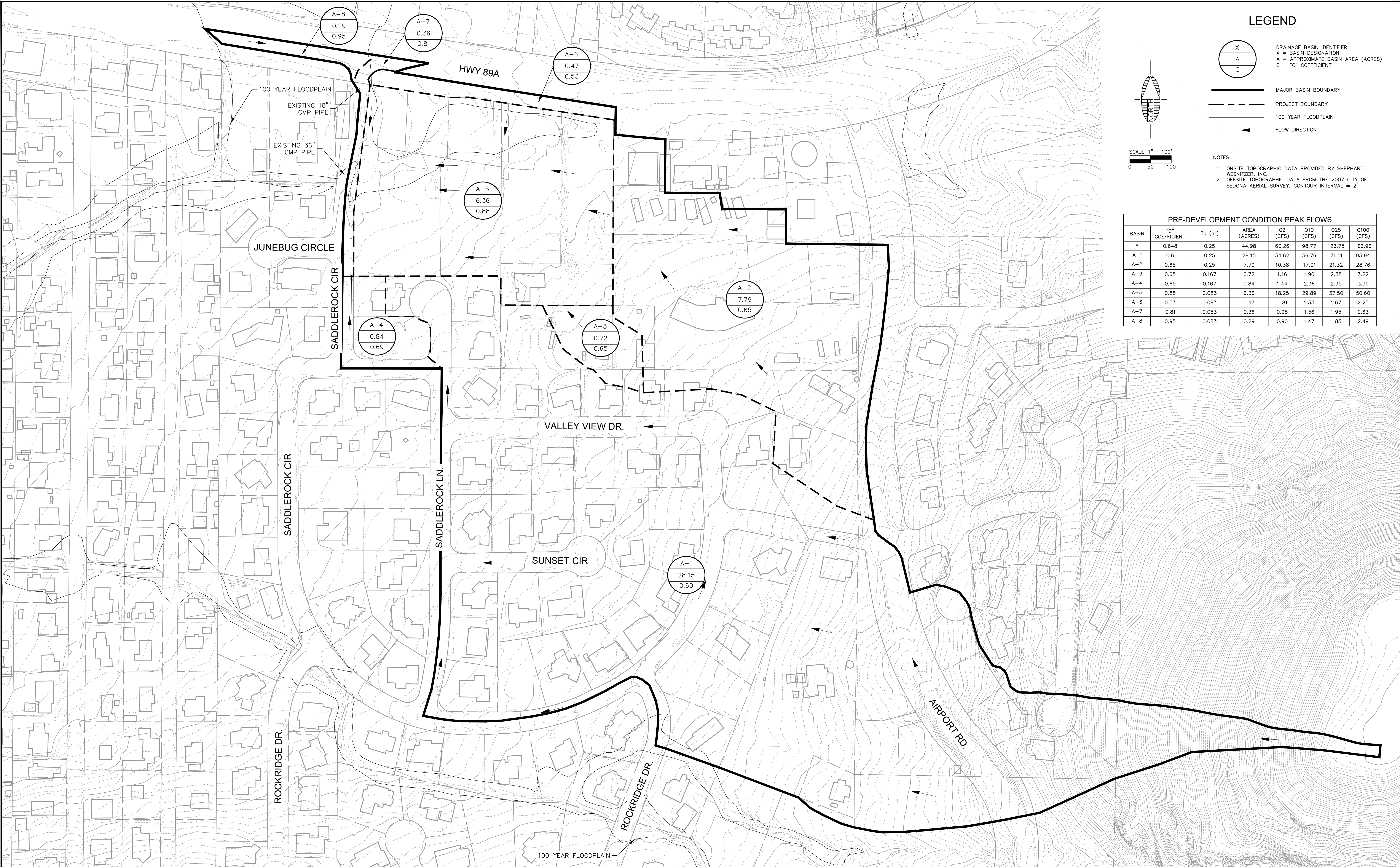


**DIBBLE & ASSOCIATES**  
CONSULTING ENGINEERS

DATE: SEPTEMBER 22, 2004

PLOTTED: Apr 13, 2021 - 8:53am

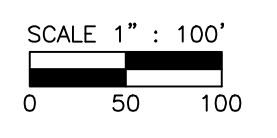
FILE: P:\2016\16034\ENGINEERING\DRAINAGE\DWG\PRE-POST-DEVELOPMENT EXHIBIT.DWG EMETZ



**LEGEND**

**DRAINAGE BASIN IDENTIFIER:**  
 X = BASIN DESIGNATION  
 A = APPROXIMATE BASIN AREA (ACRES)  
 C = "C" COEFFICIENT

MAJOR BASIN BOUNDARY  
 PROJECT BOUNDARY  
 100 YEAR FLOODPLAIN  
 FLOW DIRECTION



- NOTES:**
- ONSITE TOPOGRAPHIC DATA PROVIDED BY SHEPHARD WESNITZER, INC.
  - OFFSITE TOPOGRAPHIC DATA FROM THE 2007 CITY OF SEDONA AERIAL SURVEY. CONTOUR INTERVAL = 2'

PRE-DEVELOPMENT CONDITION PEAK FLOWS							
BASIN	"C" COEFFICIENT	Tc (hr)	AREA (ACRES)	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
A	0.648	0.25	44.98	60.26	98.77	123.75	166.96
A-1	0.6	0.25	28.15	34.62	56.76	71.11	95.94
A-2	0.65	0.25	7.79	10.38	17.01	21.32	28.76
A-3	0.65	0.167	0.72	1.16	1.90	2.38	3.22
A-4	0.69	0.167	0.84	1.44	2.36	2.95	3.99
A-5	0.88	0.083	6.36	18.25	29.89	37.50	50.60
A-6	0.53	0.083	0.47	0.81	1.33	1.67	2.25
A-7	0.81	0.083	0.36	0.95	1.56	1.95	2.63
A-8	0.95	0.083	0.29	0.90	1.47	1.85	2.49

Call at least two full working days before you begin excavation.

**ARIZONA 811**  
Arizona Blue Stakes, Inc.

Dial 8-1-1 or 1-800-STAKE-11 (782-5348)

REVISIONS			
NO.	DESCRIPTION	DATE	BY

**SWI**  
Shephard Wesnitzer, Inc.

75 Kallof Place  
Sedona, AZ 86336  
928.282.1061  
928.282.2058 fax  
www.swiaz.com

JOB NO: 16034  
 DATE: APR 21  
 SCALE: 1"=100'  
 DRAWN: AKC/EGM  
 DESIGN: AKC  
 CHECKED: AHB

THE VILLAGE AT SADDLEROCK CROSSING  
 SEDONA ARIZONA

**PRELIMINARY DRAINAGE REPORT  
 DRAINAGE MAP  
 PRE-DEVELOPMENT**

**PRELIMINARY**  
 NOT FOR CONSTRUCTION,  
 BIDDING OR RECORDING

DRAWING NO. **D1**

SHT NO. **1** OF **1**





**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Sedona, Arizona, USA\***  
**Latitude: 34.8621°, Longitude: -111.7837°**  
**Elevation: 4438.28 ft\*\***



\* source: ESRI Maps

\*\* source: USGS

**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aeriels](#)

**PF tabular**

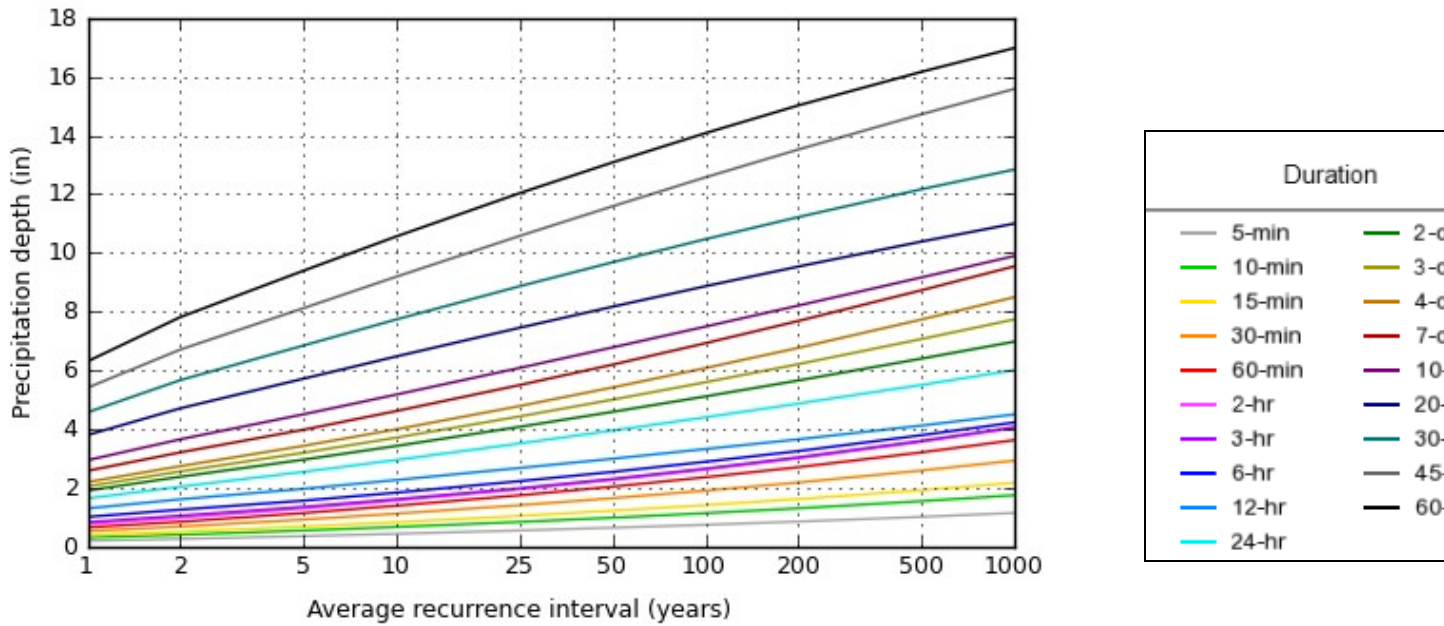
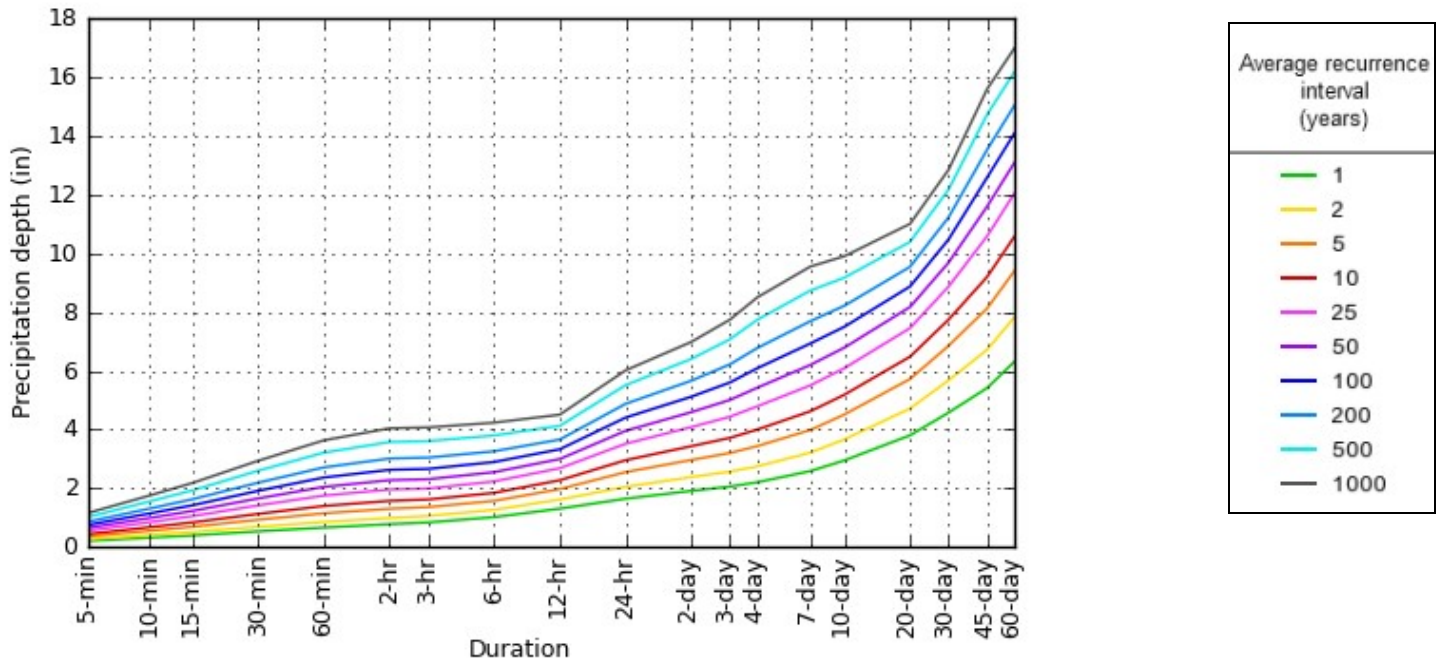
<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
<b>Duration</b>	<b>Average recurrence interval (years)</b>									
	<b>1</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	<b>1000</b>
<b>5-min</b>	<b>0.211</b> (0.176-0.252)	<b>0.272</b> (0.227-0.325)	<b>0.366</b> (0.304-0.437)	<b>0.445</b> (0.371-0.530)	<b>0.558</b> (0.461-0.661)	<b>0.652</b> (0.534-0.773)	<b>0.753</b> (0.612-0.894)	<b>0.862</b> (0.691-1.03)	<b>1.02</b> (0.804-1.22)	<b>1.16</b> (0.897-1.39)
<b>10-min</b>	<b>0.321</b> (0.269-0.383)	<b>0.414</b> (0.345-0.494)	<b>0.557</b> (0.463-0.665)	<b>0.678</b> (0.564-0.807)	<b>0.849</b> (0.701-1.01)	<b>0.992</b> (0.813-1.18)	<b>1.15</b> (0.932-1.36)	<b>1.31</b> (1.05-1.56)	<b>1.56</b> (1.22-1.86)	<b>1.76</b> (1.37-2.12)
<b>15-min</b>	<b>0.398</b> (0.333-0.475)	<b>0.513</b> (0.428-0.612)	<b>0.691</b> (0.574-0.824)	<b>0.840</b> (0.699-1.00)	<b>1.05</b> (0.869-1.25)	<b>1.23</b> (1.01-1.46)	<b>1.42</b> (1.16-1.69)	<b>1.63</b> (1.30-1.94)	<b>1.93</b> (1.52-2.31)	<b>2.18</b> (1.69-2.63)
<b>30-min</b>	<b>0.537</b> (0.448-0.639)	<b>0.691</b> (0.575-0.824)	<b>0.930</b> (0.773-1.11)	<b>1.13</b> (0.942-1.35)	<b>1.42</b> (1.17-1.68)	<b>1.66</b> (1.36-1.96)	<b>1.91</b> (1.56-2.27)	<b>2.19</b> (1.76-2.61)	<b>2.60</b> (2.04-3.11)	<b>2.94</b> (2.28-3.54)
<b>60-min</b>	<b>0.664</b> (0.554-0.791)	<b>0.855</b> (0.712-1.02)	<b>1.15</b> (0.957-1.37)	<b>1.40</b> (1.17-1.67)	<b>1.75</b> (1.45-2.08)	<b>2.05</b> (1.68-2.43)	<b>2.37</b> (1.93-2.81)	<b>2.71</b> (2.17-3.23)	<b>3.21</b> (2.53-3.85)	<b>3.63</b> (2.82-4.38)
<b>2-hr</b>	<b>0.782</b> (0.680-0.910)	<b>0.990</b> (0.853-1.16)	<b>1.31</b> (1.13-1.52)	<b>1.58</b> (1.35-1.83)	<b>1.96</b> (1.67-2.27)	<b>2.28</b> (1.92-2.65)	<b>2.63</b> (2.19-3.07)	<b>3.02</b> (2.47-3.51)	<b>3.58</b> (2.88-4.17)	<b>4.04</b> (3.20-4.72)
<b>3-hr</b>	<b>0.840</b> (0.738-0.972)	<b>1.06</b> (0.937-1.23)	<b>1.36</b> (1.19-1.57)	<b>1.62</b> (1.41-1.87)	<b>1.99</b> (1.72-2.30)	<b>2.31</b> (1.98-2.66)	<b>2.66</b> (2.25-3.08)	<b>3.05</b> (2.54-3.52)	<b>3.61</b> (2.96-4.20)	<b>4.07</b> (3.27-4.77)
<b>6-hr</b>	<b>1.02</b> (0.913-1.13)	<b>1.27</b> (1.14-1.41)	<b>1.57</b> (1.41-1.75)	<b>1.85</b> (1.65-2.05)	<b>2.24</b> (1.98-2.49)	<b>2.55</b> (2.24-2.84)	<b>2.90</b> (2.52-3.23)	<b>3.26</b> (2.80-3.65)	<b>3.80</b> (3.21-4.29)	<b>4.24</b> (3.52-4.82)
<b>12-hr</b>	<b>1.31</b> (1.18-1.45)	<b>1.62</b> (1.47-1.80)	<b>1.98</b> (1.78-2.19)	<b>2.28</b> (2.04-2.51)	<b>2.68</b> (2.40-2.96)	<b>3.00</b> (2.67-3.30)	<b>3.33</b> (2.93-3.68)	<b>3.66</b> (3.19-4.05)	<b>4.13</b> (3.55-4.60)	<b>4.51</b> (3.84-5.05)
<b>24-hr</b>	<b>1.65</b> (1.50-1.81)	<b>2.05</b> (1.87-2.27)	<b>2.55</b> (2.32-2.82)	<b>2.96</b> (2.68-3.27)	<b>3.52</b> (3.17-3.88)	<b>3.96</b> (3.56-4.36)	<b>4.41</b> (3.94-4.87)	<b>4.88</b> (4.34-5.39)	<b>5.51</b> (4.86-6.12)	<b>6.01</b> (5.25-6.70)
<b>2-day</b>	<b>1.92</b> (1.75-2.12)	<b>2.39</b> (2.17-2.64)	<b>2.97</b> (2.71-3.28)	<b>3.44</b> (3.12-3.79)	<b>4.08</b> (3.70-4.50)	<b>4.59</b> (4.14-5.05)	<b>5.12</b> (4.59-5.63)	<b>5.66</b> (5.04-6.25)	<b>6.41</b> (5.64-7.09)	<b>6.98</b> (6.10-7.75)
<b>3-day</b>	<b>2.06</b> (1.88-2.27)	<b>2.57</b> (2.34-2.83)	<b>3.20</b> (2.92-3.53)	<b>3.72</b> (3.38-4.09)	<b>4.44</b> (4.02-4.88)	<b>5.01</b> (4.51-5.50)	<b>5.60</b> (5.02-6.15)	<b>6.22</b> (5.53-6.85)	<b>7.07</b> (6.23-7.81)	<b>7.74</b> (6.77-8.59)
<b>4-day</b>	<b>2.21</b> (2.02-2.42)	<b>2.75</b> (2.51-3.03)	<b>3.44</b> (3.14-3.78)	<b>4.00</b> (3.64-4.40)	<b>4.79</b> (4.35-5.25)	<b>5.42</b> (4.89-5.94)	<b>6.09</b> (5.46-6.68)	<b>6.77</b> (6.03-7.44)	<b>7.74</b> (6.82-8.54)	<b>8.50</b> (7.43-9.43)
<b>7-day</b>	<b>2.59</b> (2.37-2.83)	<b>3.22</b> (2.95-3.53)	<b>3.99</b> (3.65-4.36)	<b>4.62</b> (4.23-5.06)	<b>5.50</b> (5.02-6.02)	<b>6.20</b> (5.64-6.79)	<b>6.93</b> (6.27-7.60)	<b>7.69</b> (6.91-8.43)	<b>8.73</b> (7.77-9.62)	<b>9.55</b> (8.42-10.5)
<b>10-day</b>	<b>2.95</b> (2.70-3.23)	<b>3.66</b> (3.35-4.02)	<b>4.51</b> (4.13-4.94)	<b>5.18</b> (4.74-5.68)	<b>6.09</b> (5.54-6.65)	<b>6.79</b> (6.16-7.43)	<b>7.50</b> (6.76-8.22)	<b>8.21</b> (7.37-9.01)	<b>9.17</b> (8.17-10.1)	<b>9.90</b> (8.77-10.9)
<b>20-day</b>	<b>3.81</b> (3.50-4.16)	<b>4.72</b> (4.34-5.16)	<b>5.72</b> (5.27-6.26)	<b>6.48</b> (5.95-7.07)	<b>7.45</b> (6.83-8.13)	<b>8.17</b> (7.46-8.91)	<b>8.87</b> (8.08-9.69)	<b>9.54</b> (8.66-10.4)	<b>10.4</b> (9.38-11.4)	<b>11.0</b> (9.89-12.1)
<b>30-day</b>	<b>4.58</b> (4.20-5.00)	<b>5.68</b> (5.21-6.19)	<b>6.85</b> (6.27-7.47)	<b>7.74</b> (7.08-8.42)	<b>8.87</b> (8.09-9.64)	<b>9.68</b> (8.81-10.5)	<b>10.5</b> (9.49-11.4)	<b>11.2</b> (10.1-12.3)	<b>12.2</b> (11.0-13.3)	<b>12.8</b> (11.5-14.1)
<b>45-day</b>	<b>5.41</b> (4.94-5.97)	<b>6.72</b> (6.13-7.41)	<b>8.12</b> (7.41-8.94)	<b>9.19</b> (8.38-10.1)	<b>10.6</b> (9.62-11.6)	<b>11.6</b> (10.5-12.7)	<b>12.6</b> (11.4-13.8)	<b>13.5</b> (12.2-14.9)	<b>14.7</b> (13.2-16.2)	<b>15.6</b> (13.9-17.2)
<b>60-day</b>	<b>6.31</b> (5.75-6.91)	<b>7.82</b> (7.14-8.57)	<b>9.40</b> (8.57-10.3)	<b>10.6</b> (9.62-11.6)	<b>12.0</b> (10.9-13.2)	<b>13.1</b> (11.9-14.3)	<b>14.1</b> (12.7-15.4)	<b>15.0</b> (13.6-16.5)	<b>16.2</b> (14.5-17.7)	<b>17.0</b> (15.2-18.7)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

### PF graphical

PDS-based depth-duration-frequency (DDF) curves  
 Latitude: 34.8621°, Longitude: -111.7837°



### Maps & aerials

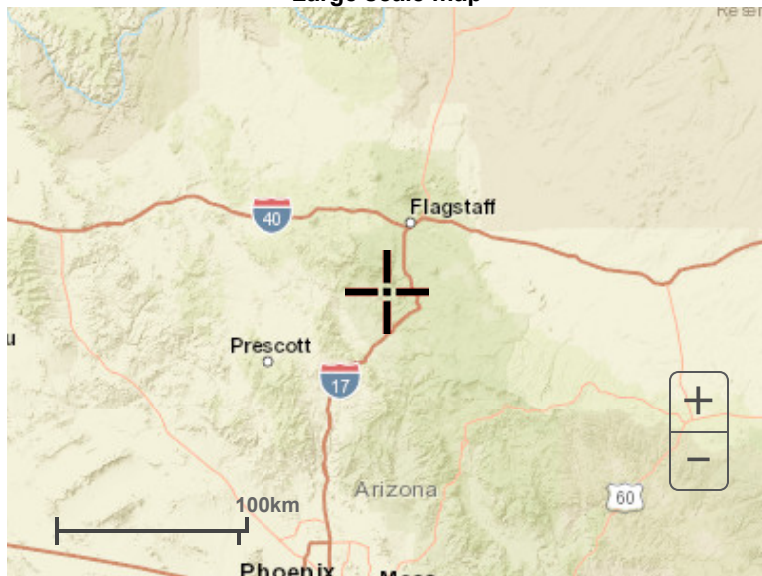
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

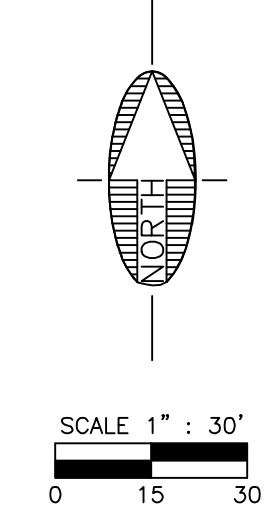
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SEDONA ARIZONA

**GRADING, DRAINAGE, & UTILITY CONCEPT**

**PRELIMINARY GC1**

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# Sewer Design Report



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## Saddlerock Crossing

# Sewer Collection System Preliminary Design Report

Sedona, Arizona

Prepared for:  
Baney Corporation  
475 NE Bellevue Dr., Suite 210  
Bend, OR 97701

Prepared by:  
Shephard-Wesnitzer, Inc.  
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Sedona, AZ 86336  
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January 5, 2022  
Job No. 16034

## TABLE OF CONTENTS

INTRODUCTION .....	1
DESIGN FLOW.....	1
COLLECTION SYSTEM .....	1
SUMMARY .....	2
REFERENCES .....	3



## **INTRODUCTION**

The Saddlerock Crossing project is located at the southeast corner of SR 89A and Saddlerock Circle in Sedona, Arizona. The project consists of a 122-room hotel, 40 multi-family residential units, parking garage and hotel amenities on several vacant parcels.

The property is situated in southeast quarter of Section 12, Township 17 North, Range 5 East, Gila and Salt River Meridian in Yavapai County, more specifically defined as Assessor's Parcel Numbers 408-26-010, 011, 012, 013, 014, 004B, 004C, 009C, 009A, 088 and 086A totaling 6.31 acres. All the parcels but 408-26-009A are zoned Commercial (CO), 009A is 0.62 acres and zoned Multi-Family Residential High Density (RM-2).

The property abuts SR 89A and Commercial zoned property to the north. Portion of the property abutting the project to the west and east along SR 89A is also zoned Commercial. The remaining portion abutting the project to the west and south is zoned Single Family Residential (RS-10).

Sewer treatment is being provided by the City of Sedona. Central water system is provided by Oak Creek Water Company.

## **DESIGN FLOW**

The wastewater design flow is based on each ADEQ R18-9-E323, Table 1 Unit Design Flows. The project design flows are shown in the table below.

	# of Units	Daily Flow	Total
Hotel Rooms	122	50	6,100
Employees	20	20	400
Multi-Family	40	300	12,000
Total			18,500

The project will contribute approximately 18,500 gallons per day of wastewater to the City of Sedona's wastewater system.

## **COLLECTION SYSTEM**

This area is served by the City of Sedona sewer system. An 18" sewer line located along the frontage of SR 89A and Saddlerock Circle will be the point of connection for this project. The capacity of an 18" PVC sewer line flowing full at the minimum design slope of 0.0012 feet per foot is 2.36 mgd.

The sewer collection system is designed per ADEQ R18-9-E301, for a General Permit Type 4.01 for a Sewage Collection System.

### **SUMMARY**

The sewer system design for collection complies with the requirements of the City of Sedona and the Arizona Department of Environmental Quality.

## **REFERENCES**

### **Publications**

*Unified Water Quality Permit Rules*, Arizona Department of Environmental Quality, 2019.

*Engineering Bulletin No. 11: Minimum Requirements for Design, Submission of Plans and Specifications of Sewage Works*, Arizona Department of Environmental Quality, 1978.

*Uniform Plumbing Code*, International Association of Plumbing and Mechanical Officials, 1994.

*Final 2017 Wastewater Master Plan Update*, City of Sedona

# Traffic Impact Analysis



SOUTHWEST TRAFFIC  
ENGINEERING, LLC

## TRAFFIC IMPACT ANALYSIS

# SADDLE ROCK CROSSING

SOLDIERS PASS ROAD/STATE ROUTE 89A (SR 89A)

REVISED 17 MAY 2022

25 MAY 2021



PREPARED FOR

**BARNEY CORPORATION**

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## Table of Contents

<b>Executive Summary</b>	<b>4</b>
<b>Project Description</b>	<b>6</b>
<b>Study Methodology</b>	<b>6</b>
<b>Existing Conditions</b>	<b>9</b>
<b>Existing Traffic Data</b>	<b>11</b>
<b>Access</b>	<b>15</b>
<b>Trip Generation</b>	<b>15</b>
<b>Trip Distribution &amp; Assignment</b>	<b>18</b>
<b>Existing Traffic Operations</b>	<b>18</b>
<b>Future Traffic Operations Without Project</b>	<b>24</b>
<b>Future Traffic Operations With Project</b>	<b>31</b>
<b>Turn Lane Analysis</b>	<b>48</b>
<b>Crash Analysis</b>	<b>49</b>
<b>Mitigation</b>	<b>50</b>
<b>Conclusion</b>	<b>50</b>

## Table of Figures

<b>Figure 1 – Vicinity Map</b>	<b>7</b>
<b>Figure 2 – Site Plan</b>	<b>8</b>
<b>Figure 3 – Existing Lane Configurations and Traffic Control</b>	<b>10</b>
<b>Figure 4 – 2019 Weekday Peak Hour Traffic Volumes</b>	<b>12</b>
<b>Figure 5 – 2022 Weekday Peak Hour Traffic Volumes</b>	<b>13</b>
<b>Figure 6 – 2022 Saturday Peak Hour Traffic Volumes</b>	<b>14</b>
<b>Figure 7 – Baseline Access Point and Intersection Configuration Assumptions</b>	<b>16</b>
<b>Figure 8 – Scenario 2 Access Point and Intersection Configuration Assumptions</b>	<b>17</b>
<b>Figure 9 – Weekday Peak Hour Trip Distribution</b>	<b>19</b>
<b>Figure 10 – Access Scenario 1 Peak Hour Trip Assignment</b>	<b>20</b>
<b>Figure 11 – Access Scenario 2 Peak Hour Trip Assignment</b>	<b>21</b>
<b>Figure 12 – 2023 Weekday Peak Hour Traffic Volumes Without Project</b>	<b>25</b>
<b>Figure 13 – 2026 Weekday Peak Hour Traffic Volumes Without Project</b>	<b>26</b>
<b>Figure 14 – 2023 Saturday Peak Hour Traffic Volumes Without Project</b>	<b>27</b>



<b>Figure 15 – 2026 Saturday Peak Hour Traffic Volumes Without Project</b>	<b>28</b>
<b>Figure 16 – 2023 Weekday Peak Hour Traffic Volumes With Project</b>	<b>32</b>
<b>Figure 17 – 2026 Weekday Peak Hour Traffic Volumes With Project</b>	<b>33</b>
<b>Figure 18 – 2023 Saturday Peak Hour Traffic Volumes With Project</b>	<b>34</b>
<b>Figure 19 – 2026 Saturday Peak Hour Traffic Volumes With Project</b>	<b>35</b>
<b>Figure 20 – 2023 Weekday Peak Hour Traffic Volumes With Project</b>	<b>36</b>
<b>Access Scenario 2</b>	<b>36</b>
<b>Figure 21 – 2026 Weekday Peak Hour Traffic Volumes With Project</b>	<b>37</b>
<b>Access Scenario 2</b>	<b>37</b>
<b>Figure 22 – 2023 Saturday Peak Hour Traffic Volumes With Project</b>	<b>38</b>
<b>Access Scenario 2</b>	<b>38</b>
<b>Figure 23 – 2026 Saturday Peak Hour Traffic Volumes With Project</b>	<b>39</b>
<b>Access Scenario 2</b>	<b>39</b>
<b>Figure 24 – Proposed Lane Configurations and Traffic Control</b>	<b>52</b>

#### List of Tables

<b>Table 1 – Vehicle Speed Breakdown</b>	<b>11</b>
<b>Table 2 – Project Site Generated Trips</b>	<b>18</b>
<b>Table 3 – Level of Service Criteria – Signalized Intersections</b>	<b>22</b>
<b>Table 4 – Level of Service Criteria – Un-signalized Intersections</b>	<b>22</b>
<b>Table 5 – 2019 Weekday Peak Hour Levels of Service Without Project</b>	<b>23</b>
<b>Table 6 – 2022 Weekday Peak Hour Levels of Service Without Project</b>	<b>23</b>
<b>Table 7 – 2022 Saturday Peak Hour Levels of Service Without Project</b>	<b>24</b>
<b>Table 8 – 2023 Weekday Peak Hour Levels of Service Without Project</b>	<b>29</b>
<b>Table 9 – 2026 Weekday Peak Hour Levels of Service Without Project</b>	<b>30</b>
<b>Table 10 – 2023 Saturday Peak Hour Levels of Service Without Project</b>	<b>30</b>
<b>Table 11 – 2026 Saturday Peak Hour Levels of Service Without Project</b>	<b>31</b>
<b>Table 12 – 2023 Weekday Peak Hour Levels of Service With Project</b>	<b>40</b>
<b>Table 13 – 2026 Weekday Peak Hour Levels of Service With Project</b>	<b>41</b>
<b>Table 14 – 2023 Saturday Peak Hour Levels of Service With Project</b>	<b>42</b>
<b>Table 15 – 2026 Saturday Peak Hour Levels of Service With Project</b>	<b>43</b>
<b>Table 16 – 2023 Weekday Peak Hour Levels of Service With Project</b>	<b>44</b>



<b>Access Scenario 2</b>	<b>44</b>
<b>Table 17 – 2026 Weekday Peak Hour Levels of Service With Project</b>	<b>45</b>
<b>Access Scenario 2</b>	<b>45</b>
<b>Table 18 – 2023 Saturday Peak Hour Levels of Service With Project</b>	<b>46</b>
<b>Access Scenario 2</b>	<b>46</b>
<b>Table 19 – 2026 Saturday Peak Hour Levels of Service With Project</b>	<b>47</b>
<b>Access Scenario 2</b>	<b>47</b>
<b>Table 20 – Turn Lane Warrants</b>	<b>48</b>
<b>Table 21 – Turn Lane Warrants</b>	<b>49</b>
<b>Table 22 – Crash Analysis at Soldiers Pass Road/SR 89A</b>	<b>49</b>
<b>Table 23 – Crash Analysis at Saddlerock Circle/SR 89A</b>	<b>50</b>

## **Appendix**

Traffic Counts

Trip Generation Calculations

Capacity Calculations

Turn Lane Calculations

Crash Summary

Approved ADOT TIA Presubmittal Form

Comment Resolution

## **Prepared By:**

Andrew Smigielski, PE, PTOE, PTP

Alex Brucki, EIT





## **SADDLE ROCK CROSSING SOLDIERS PASS ROAD/ STATE ROUTE 89A REVISED TRAFFIC IMPACT ANALYSIS**

### **Executive Summary**

The purpose of this traffic study is to evaluate the current and future transportation system within the project study area surrounding the site without and with the proposed Saddle Rock Crossing project.

### **Existing Traffic Data**

The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements during the weekday and Saturday peak hours.

The remaining study intersections currently operate at adequate LOS.

Motorists on Saddlerock Circle travel at an average speed of 23 to 24 miles per hour (mph) with a northbound-southbound average of 69.3% of vehicles traveling under 25 mph.

### **Future Traffic Data Without the Project**

The existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue in 2023 and 2026 without traffic from the Saddle Rock Crossing site during the weekday and weekend peak hours.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

### **Future Traffic Data With Project**

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project in the original access scenario.

The second access scenario treats the intersection of Saddlerock Circle/SR 89a as a right in/right out only and redirects traffic from Saddlerock Circle/SR 89A to Soldier Pass Road/SR 89A. The LOS at the study intersections resulting from this redirection is expected to be C or better.

All remaining study intersections are expected to operate at an adequate LOS.

### **Turn Lane Analysis**

An eastbound right turn lane is proposed at the intersection of Soldiers Pass Road/SR 89A. This turn lane should be installed to provide a minimum 50 feet of storage.

### **Crash Analysis**

Based on crash data retrieved from the ADOT database, 13 crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study analyzed between 2016



and 2020. Of these crashes, six (6) were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

With limited crashes at the intersection of Saddlerock Circle/SR 89A, no specific crash trends can be identified.

### **Mitigation**

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project in the original access scenario. These delays are expected to continue in 2023 and 2026 during the weekday and weekend peak hours. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday and weekend peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. While a traffic signal would be expected to alleviate the delays, the intersection is less than 500 feet away from the signalized Soldiers Pass Road/SR 89A intersection and would negatively impact progression on SR 89A. Further mitigation options are limited or require removing left turn movements and rerouting residential traffic through commercial areas.



## SADDLE ROCK CROSSING SOLDIERS PASS ROAD/ STATE ROUTE 89A TRAFFIC IMPACT ANALYSIS

### Project Description

Barney Corporation is proposing a mixed land use project south of Soldiers Pass Road/State Route 89A (SR 89A) in Sedona, Arizona. The project will include a 3,000 square foot high turnover restaurant, a 985 square foot rooftop bar, 122-room hotel (8 rooms of which are suite accommodation only), and 40 apartment units. The vicinity of the project is shown in **Figure 1**. The site will be located as shown in **Figure 2**. The Saddle Rock Crossing project will be served by one (1) access point on SR 89A and one access point on Saddlerock Circle.

The purpose of this traffic impact analysis is to:

- Evaluate the current and future operational characteristics of the adjacent roadway network surrounding the project site.
- Estimate the traffic generation associated with the project and assign that traffic to the existing roadway system.
- Analyze future traffic operations at two existing intersections and two proposed driveways serving the project area.
- Determine the need for auxiliary (left and right turn) lanes at the driveways that will directly serve the project site.
- Perform a crash analysis to identify any specific crash trends within the study area.

The author of this report is a registered Professional Engineer (Civil) in the State of Arizona having specific expertise and experience in the preparation of traffic impact analyses.

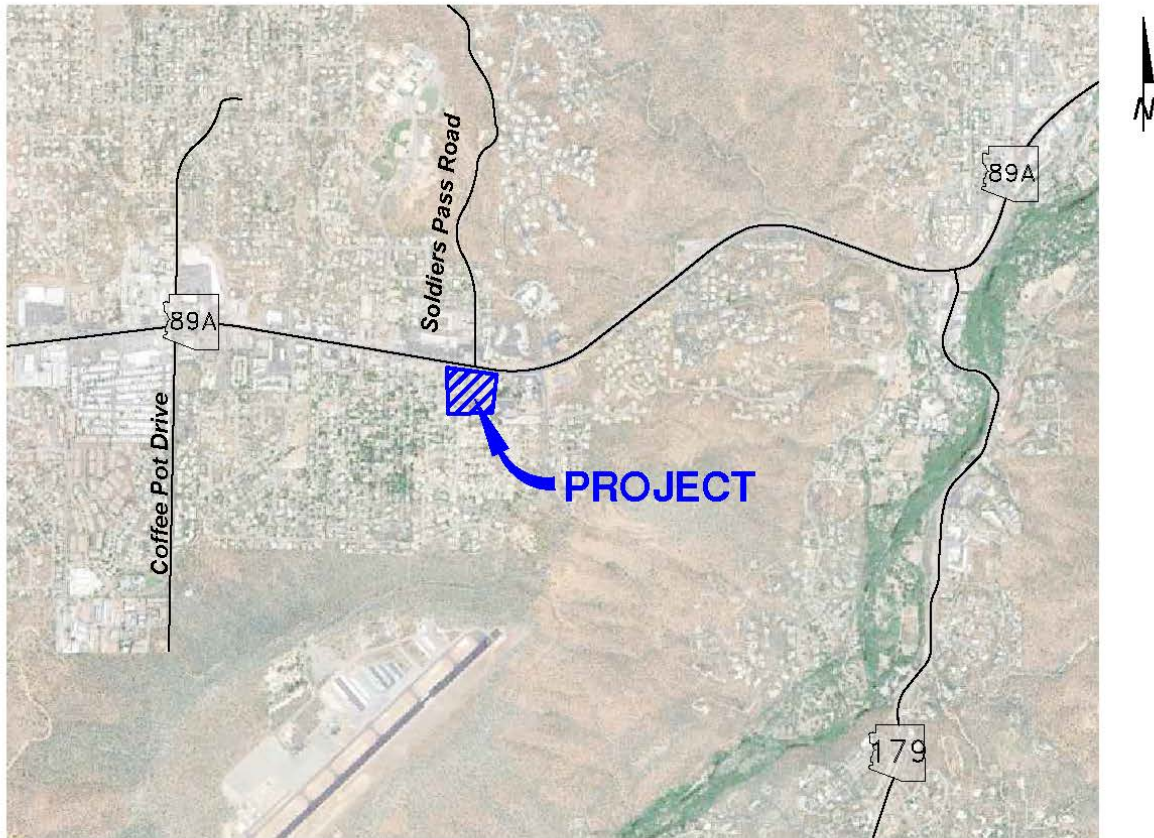
### Study Methodology

In order to analyze and evaluate the potential traffic impacts of the proposed development, the following tasks were undertaken:

- Field observation of the proposed site and surrounding area was conducted to evaluate the existing physical and operational characteristics of the adjacent roadway network.
- Site traffic volumes generated by the proposed site were calculated using the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11<sup>th</sup> Edition, 2021*.
- Calculated site traffic was distributed based on existing traffic patterns and assigned to the primary roadways within the project study limits.
- Capacity analyses were performed for the existing conditions and future conditions without and with the project based on an opening year of 2023 and a horizon year of 2026 using methodology presented in the *2016 Highway Capacity Manual (HCM 6th)*.
- The need for auxiliary turn lanes at the study driveways was evaluated based on City of Sedona and Arizona Department of Transportation (ADOT) guidelines.
- Crash records were obtained from ADOT to identify any specific crash trends within the study area.



Figure 1 – Vicinity Map



**LEGEND:**

— EXISTING ROAD

 PROJECT SITE

**LOBBY / RESTAURANT**

**HOTEL: 76 guest rooms.**

**HOTEL: 38 guest rooms  
Basement/ Business Center**

**HOTEL: 8 guest rooms.  
Treehouse Suites**

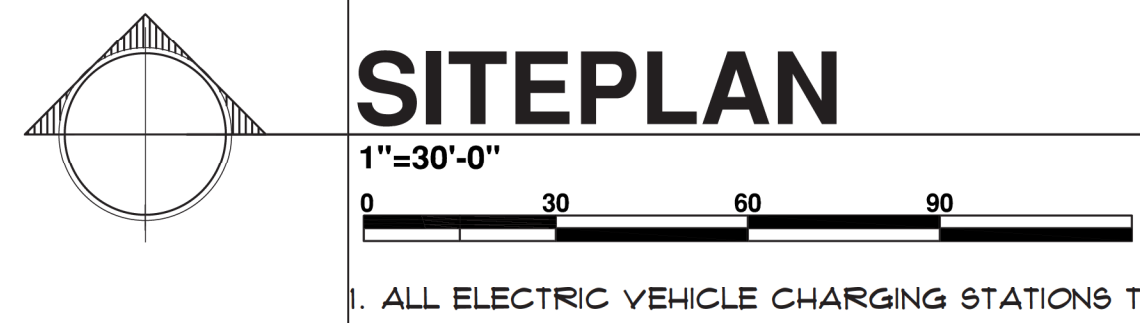
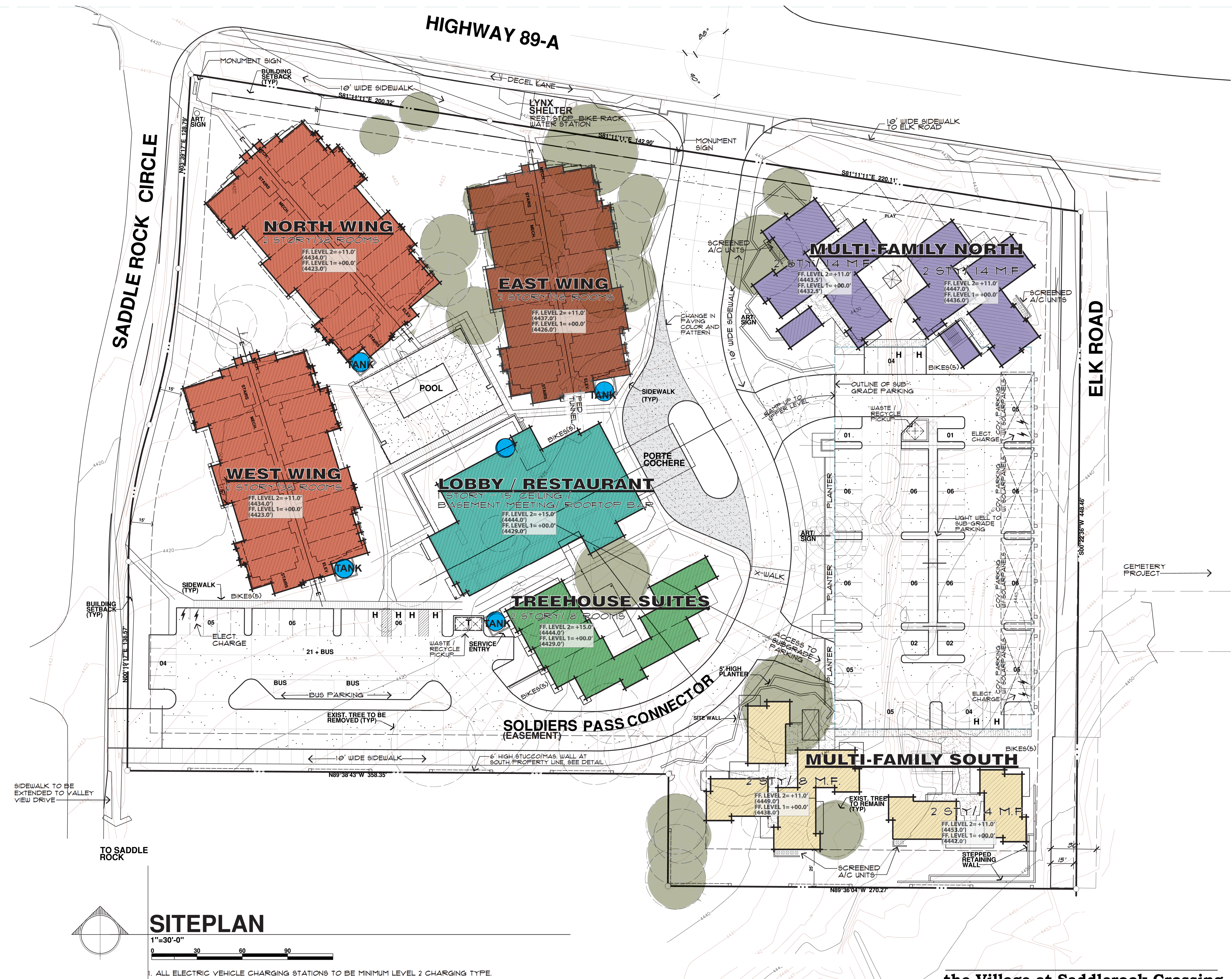
**MULTI-FAMILY:  
28 units**

**MULTI-FAMILY  
12 units**

Building/Description:	Units	Area	Parking required
<b>HOTEL ELEMENT</b>			
<b>Lobby / Treehouse Suites</b>			
Lobby / Restaurant	Level 1	9300	Restaurant - 3000 s.f. (half public) 1 space / 100 s.f. 15 sp. <i>(reduced from 30 sp.)</i>
	Level 2	5000	Rooftop Bar - 1800 s.f. (half public)
	Basement	9300	1 space / 250 s.f. 4 sp. <i>(reduced from 8 sp.)</i>
	Subtotal	23,600	
<b>Hotel - Treehouse</b>			
	Level 1	5600	Lodging-8 units
	Level 2	3300	1 space / unit 8 sp.
	Subtotal	8,900	Additional spaces 10 sp.
	<b>8</b>		<b>Lodging Units</b>
<b>East Wing</b>			
Hotel Guest Rooms	Level 1	11500	Lodging-38 units
	Level 2	10000	1 space / unit 38 sp.
	Basement	12000	
	Subtotal	33,500	
	<b>38</b>		<b>Lodging Units</b>
<b>North Wing</b>			
Hotel Guest Rooms	Level 1	11500	Lodging-38 units
	Level 2	10000	1 space / unit 38 sp.
	Subtotal	21,500	
	<b>38</b>		<b>Lodging Units</b>
<b>West Wing</b>			
Hotel Guest Rooms	Level 1	11500	Lodging-38 units
	Level 2	10000	1 space / unit 38 sp.
	38	21,500	
	<b>38</b>		<b>Lodging Units</b>
<b>MULTI-FAMILY ELEMENT</b>			
<b>Multi-Family - South</b>			
Multi-Family units	Level 1	5900	Dwelling, Multifamily
	Level 2	5900	Studio - 24 units
	Subtotal	11,800	1 space / unit 24 sp.
			1 Bedroom - 4 units
			1.25 spaces / unit 5 sp.
	<b>12</b>		<b>Multi Family Units</b>
<b>Multi-Family - North</b>			
Multi-Family units	Level 1	7600	2 Bedroom - 12 units
	Level 2	7050	1.75 spaces / unit 21 sp.
	Subtotal	14,650	
	<b>28</b>		<b>Multi Family Units</b>
	<b>28</b>		<b>Multi Family Units</b>
	<b>122</b>		<b>Lodging Units</b>
Total Lodging Units:			Parking Required: 201 sp.
Total Multi Family Units:			Parking Provided: 207 sp.

**SHEET INDEX:**

SITE	MULTI-FAMILY ELEMENT - SOUTH
1 SITE PLAN	23 1ST FLOOR PLAN
2 APPROVED NATURAL GRADE PLAN	24 2ND FLOOR PLAN
3 SITE PLAN - DETAILED - SOUTHWEST	25 ROOF PLAN
4 SITE PLAN - DETAILED - SOUTHEAST	26 ELEVATIONS
5 SITE PLAN - DETAILED - NORTHWEST	27 SECTIONS
6 SITE PLAN - DETAILED - NORTHEAST	28 AXONOMETRIC / 3D VIEW
7 SUB-GRADE PARKING PLAN / SECTION	
8 CIRCULATION PLAN	
HOTEL ELEMENT - LOBBY - TREEHOUSE	MULTI-FAMILY ELEMENT - NORTH
9 1ST FLOOR PLAN	29 1ST FLOOR PLAN
10 2ND FLOOR PLAN	30 2ND FLOOR PLAN
11 BASEMENT PLAN	31 ROOF PLAN
12 ROOF PLAN	32 ELEVATIONS
13 ELEVATIONS	33 SECTIONS
14 SECTIONS	34 AXONOMETRIC / 3D VIEW
15 AXONOMETRIC / 3D VIEW	
HOTEL ELEMENT - GUEST ROOMS	LAND DEVELOPMENT CODE COMPLIANCE
16 1ST FLOOR PLAN	35 HOTEL - LOBBY
17 2ND FLOOR PLAN	36 HOTEL - TREEHOUSE
18 BASEMENT PLAN - EAST BLDG ONLY	37 HOTEL - GUEST ROOMS
19 ROOF PLAN	38 MULTI-FAMILY - SOUTH
20 ELEVATIONS	39 MULTI-FAMILY - NORTH
21 SECTIONS	
22 AXONOMETRIC / 3D VIEW	
	L1 LANDSCAPE PLAN
	L2 EXISTING TREE PLAN/ LANDSCAPE CALCULATIONS
	L3 PARKING AREA CALCULATIONS/ DETAILS
	E1.0 EXT. LIGHTING- SITE PLAN
	E1.1 EXT. LIGHTING - PHOTOMETRIC- SITE PLAN
	E1.2 EXT. LIGHTING/PHOTOMETRIC- GARAGE PLAN
	E1.3 EXT. LIGHTING CUT-SHEETS



**SITEPLAN**

ALL ELECTRIC VEHICLE CHARGING STATIONS TO BE MINIMUM LEVEL 2 CHARGING TYPE.

**the Village at Saddlerock Crossing**  
Soldiers Pass Road & Highway 89A  
Sedona Arizona

Stephen Thompson Architect. Sedona/Del Mar  
Studio@StephenThompsonArchitect.com  
C: 928.301.5922 10/15/2021

**01** of 39



## **Existing Conditions**

The proposed Saddle Rock Crossing project will be located on undeveloped land south of Soldiers Pass Road/SR 89A in Sedona, Arizona.

State Route 89A is a state highway that runs from Prescott to Flagstaff. Adjacent to the site, the highway provides two through lanes in each direction separated by a two-way center left turn lane. Curb, gutter, sidewalk, bike lanes, and street lighting are present along SR 89A. The speed limit of the roadway is 35 miles per hour (mph) near the project site.

Soldiers Pass Road is a two-lane road that extend north from SR89A. The roadway mainly serves residential land use. Curb and gutter are present on both sides of Soldiers Pass Road, with sidewalk present on the west side. The speed limit of the roadway is 25 mph.

Saddlerock Circle is a two-lane roadway that provides access to a residential area. On-street parking is permitted on the roadway. No speed limit is posted on Saddlerock Circle.

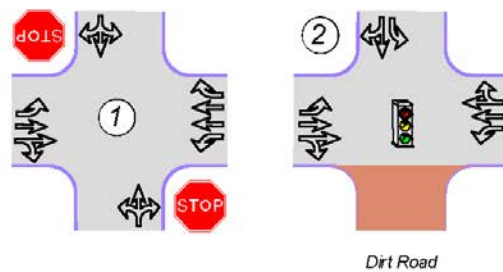
Soldiers Pass Road/SR 89A is a four-legged signalized intersection. Eastbound traffic makes use of an exclusive left turn lane, a through lane, and a shared through/right turn lane. The westbound approach to the intersection is provided with an exclusive left turn lane, one through lanes, and a shared through/right turn lane. Southbound vehicles utilize an exclusive left turn lane and a shared through/right turn lane. The northbound approach to an intersection is unpaved and provides access to an undeveloped parcel where drivers from adjacent properties cut through to use the traffic signal. Eastbound and westbound protected/permitted left turn phasing is provided at the intersection. Northbound and southbound left turn movements operate under permitted only traffic signal phasing.

Saddlerock Circle/SR 89A is a four-legged un-signalized intersection. Eastbound vehicles are provided with a two-way center left turn lane, one through lane, and one shared through/right turn lane. Westbound traffic makes use of a two-way center left turn lane, two through lanes, and an exclusive right turn lane. Northbound and southbound vehicles are STOP controlled and are offered a shared left/through/right lane. The north leg of the intersection serves as a driveway to retail/commercial developments.

The study intersection locations, lane configurations, and intersection control are shown in **Figure 3**.



Figure 3 – Existing Lane Configurations and Traffic Control





## Existing Traffic Data

In order to form a basis for analysis of the project impacts, weekday AM and PM peak hour turning movement counts were conducted at the intersections of Saddlerock Circle/SR 89A and Soldiers Pass Road/SR 89A.

The weekday turning movement counts were conducted from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. All traffic data was collected in October 2019 while school was in session.

Per City of Sedona request, Saturday 24-hour turning movement counts were also conducted at both Saddlerock Circle/SR 89A and Soldiers Pass Road/SR 89A in January 2022 while school was in session. The Saturday AM and PM peak hours were determined to be at 9:00 AM and 4:00 PM.

The 2019 weekday AM/PM peak hour traffic volumes are shown in **Figure 4**. These traffic volumes were then grown by a conservative 2% to the year 2022 for the purposes of comparison as shown in **Figure 5**. The 2022 weekend AM/PM peak hour traffic volumes are shown in **Figure 6**. Complete traffic count data can be found in the Appendix.

Additionally, 48-hour bi-directional vehicle speed counts were taken on Saddlerock Circle, north of June Big Circle. **Table 1** shows the average speeds and portion of drivers traveling over 25 mph, 30 mph and over, and 35 mph and over in the section of roadway analyzed. Complete vehicle speed count summaries can be found in the Appendix.

**Table 1 – Vehicle Speed Breakdown**

Location	Average Speed (MPH)	% over 25 MPH	% over 30 MPH	% over 35 MPH
Saddlerock Circle, between Junebug Circle and SR 89A				
Northbound	24	36.0%	7.3%	0.0%
Southbound	23	26.5%	2.9%	0.5%
<i>Average</i>	23	30.7%	4.8%	0.3%

MPH - Miles Per Hour

As shown in **Table 1**, motorists on Saddlerock Circle travel at an average speed of 23 to 24 mph with a northbound-southbound average of 69.3% of vehicles traveling under 25 mph.

A survey of various cities in Arizona that perform vehicle speed studies in neighborhoods indicates that drivers tend to select speeds somewhat higher than the posted speed limit, generally traveling at an average of 3 to 7 mph over the posted speed limit. Furthermore, it has been found that about ten to fifteen percent of motorists on residential streets exceed the speed limit by more than ten mph. While there is no posted speed limit in the immediate vicinity of this location, the speed data collected is consistent with the expectation of vehicles speeds on residential roadways.





Figure 4 – 2019 Weekday Peak Hour Traffic Volumes

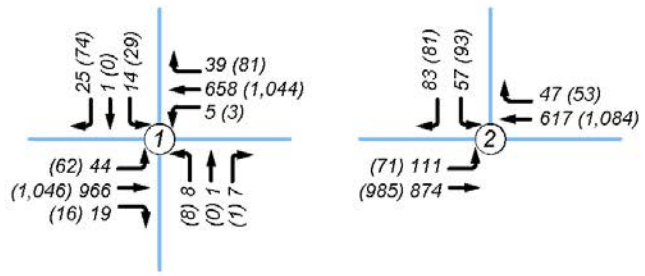
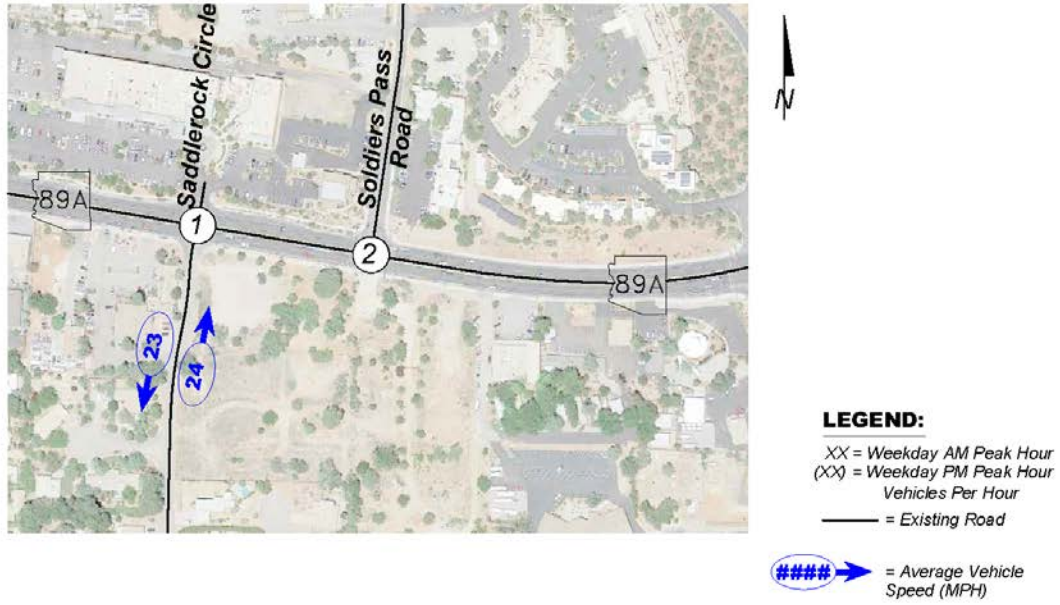




Figure 5 – 2022 Weekday Peak Hour Traffic Volumes

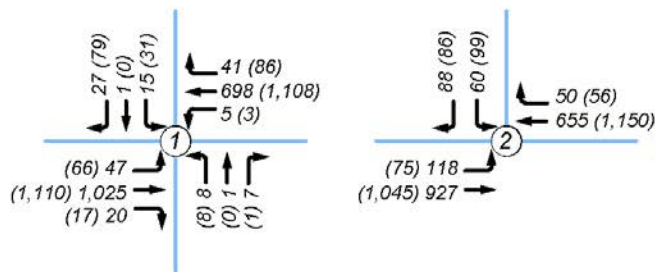
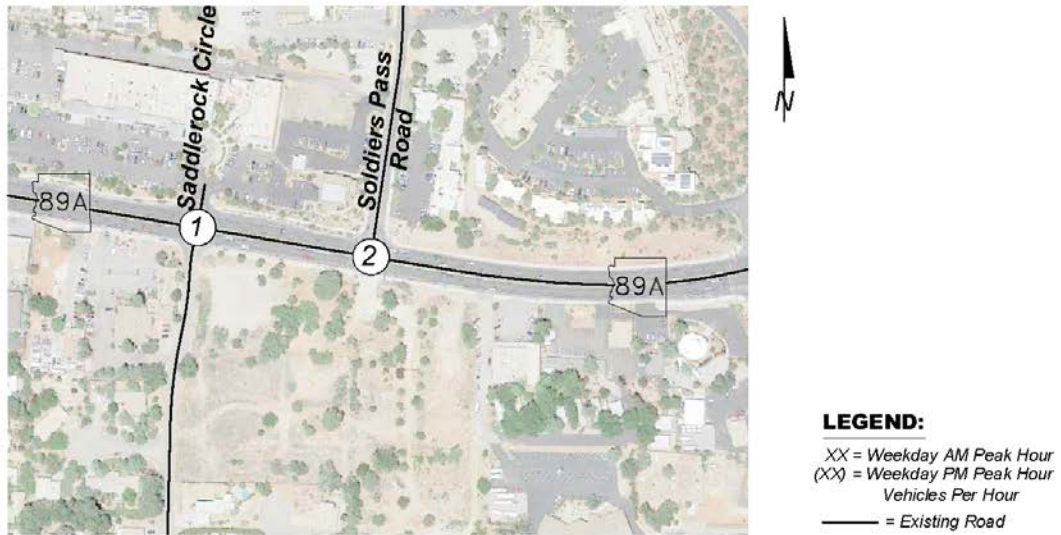
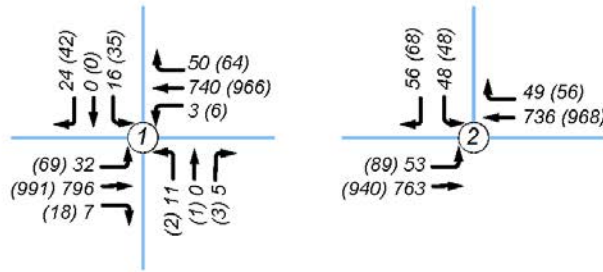
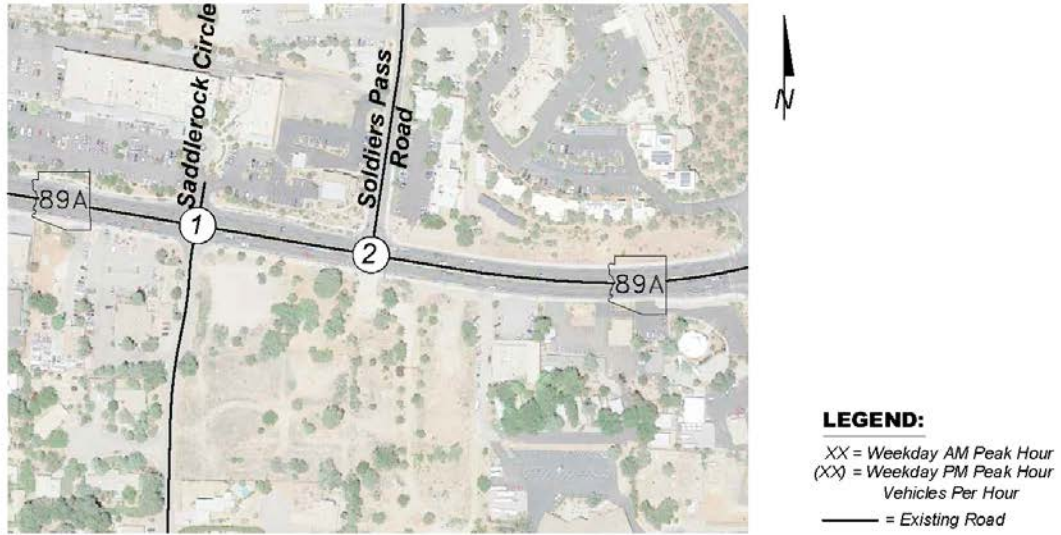




Figure 6 – 2022 Saturday Peak Hour Traffic Volumes





## Access

The Saddle Rock Crossing project will be served by two driveways: one will form the south leg of the existing intersection of Soldiers Pass Road/SR 89A and one along Saddlerock Circle.

The south leg of the existing intersection of Soldiers Pass Road/SR 89A will serve as the main access point for the proposed development. Eastbound vehicles will be provided with a left turn lane, two through lanes, and a dedicated right turn lane to enter the site, while westbound vehicles will make use of a left turn lane, a through lane, and a shared through/right turn lane. Northbound vehicles will be provided with an exclusive left turn lane and a shared through/right turn lane.

West Driveway will be located on the east side of Saddlerock Circle, approximately 500 feet south of SR 89A. Vehicles exiting the site westbound will be provided a shared left turn/right turn lane. Northbound vehicles will be offered a shared through/right turn lane while southbound traffic will make use of a shared left turn/through lane.

**Figure 7** shows the locations, geometry and spacing for the proposed driveways serving the project site that will serve as a baseline of analysis in the report.

Per City of Sedona request, a second access scenario was added to the report where the intersection of Saddlerock Circle/SR 89A was analyzed as a right-in/right-out intersection. Existing left turning traffic at this intersection was rerouted through the proposed project site at Soldiers Pass Road/SR 89A. **Figure 8** shows the locations, geometry and spacing for the proposed driveways serving the project site with this scenario.

## Trip Generation

Trip generation was developed utilizing nationally agreed upon data contained in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 11th Edition, 2023*. The Saddle Rock Crossing project trip generation was based on the following land uses and corresponding ITE Land Use Codes (LUCs):

- 40 apartment units (LUC 220, Multi-Family Housing (Low-Rise))
- 114-room hotel, (LUC 310, Hotel)
- 8 hotel suite rooms (LUC 311, All Suite Hotel)
- 985 square foot rooftop bar (LUC 975, Drinking Place)
- 3,000 square foot Restaurant (LUC 932, High-Turnover (Sit-down) Restaurant)

The result is the expected weekday trip generation for the project as shown in **Table 2**. The complete trip generation calculations can be found in the Appendix.



Figure 7 – Baseline Access Point and Intersection Configuration Assumptions

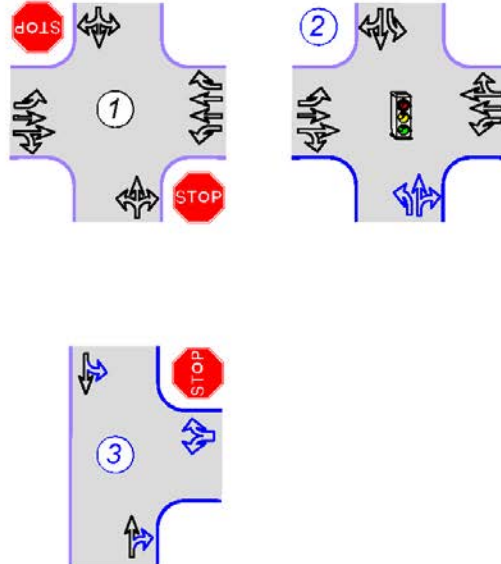
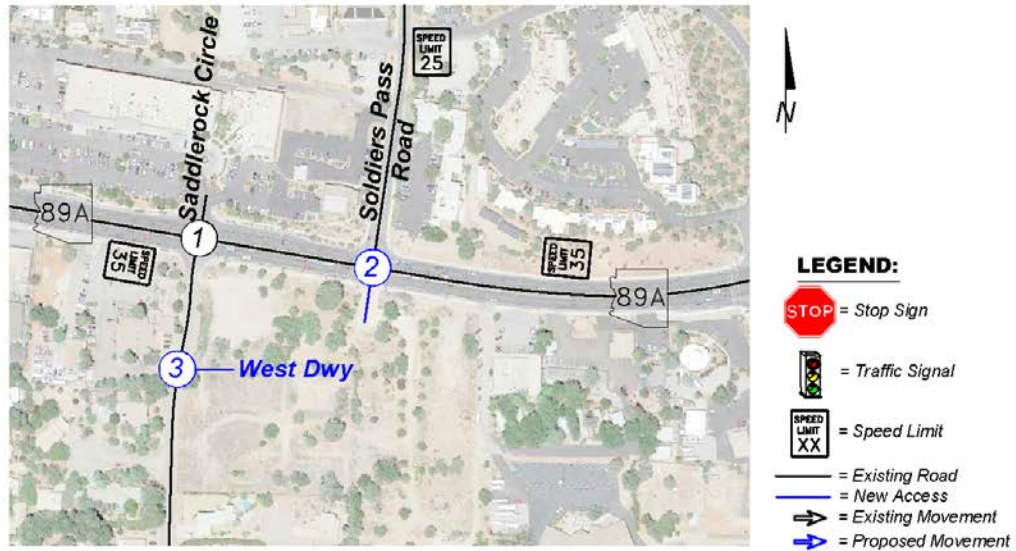
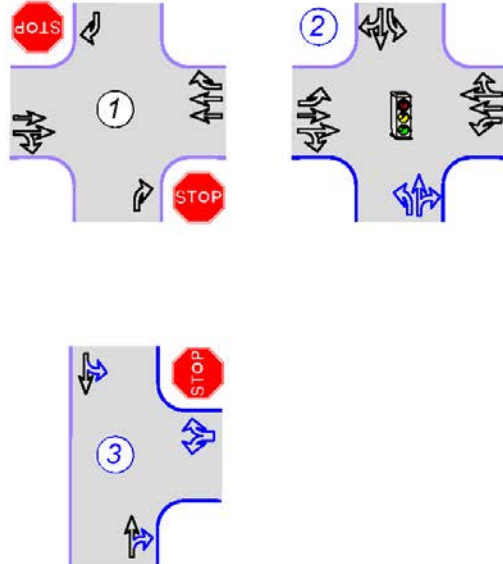
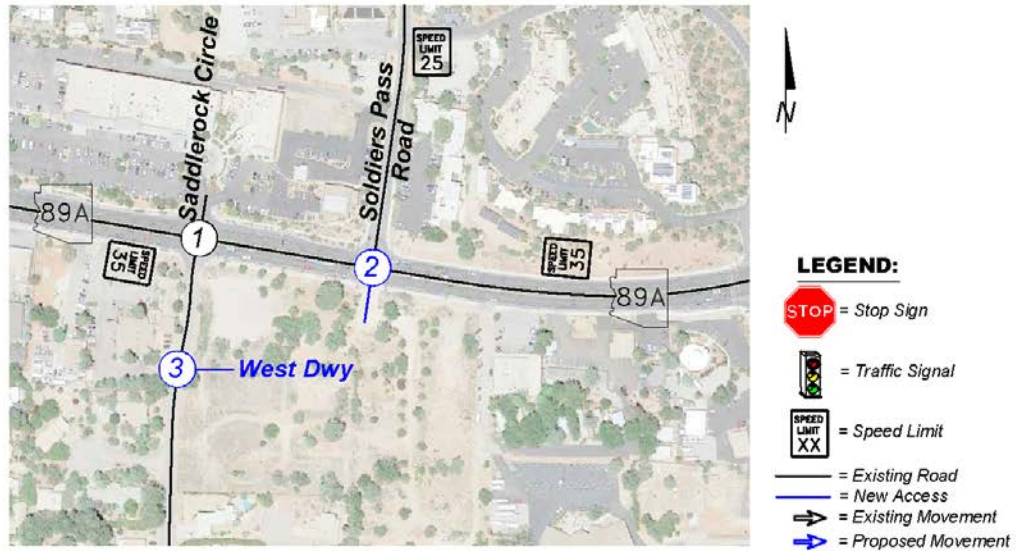




Figure 8 – Scenario 2 Access Point and Intersection Configuration Assumptions





**Table 2 – Project Site Generated Trips**

Time Period	Multi-Family Housing	Hotel	All Suites Hotel	Rooftop Bar	High Turnover Restaurant	Total
Average Daily, Inbound (vtpd)	166	407	18	N/A	161	752
Average Daily, Outbound (vtpd)	166	407	18	N/A	161	752
<b>Total Daily</b>	<b>332</b>	<b>814</b>	<b>36</b>	<b>N/A</b>	<b>322</b>	<b>1,504</b>
AM Peak Hour, Inbound (vtph)	8	28	2	N/A	16	54
AM Peak Hour, Outbound (vtph)	27	22	1	N/A	13	63
<b>Total AM Peak</b>	<b>35</b>	<b>50</b>	<b>3</b>	<b>N/A</b>	<b>29</b>	<b>117</b>
PM Peak Hour, Inbound (vtph)	25	30	1	8	17	81
PM Peak Hour, Outbound (vtph)	13	28	2	4	11	58
<b>Total PM Peak</b>	<b>38</b>	<b>58</b>	<b>3</b>	<b>12</b>	<b>28</b>	<b>139</b>

vtpd - vehicle trips per day, vtph - vehicle trips per hour

### **Trip Distribution & Assignment**

Trip distribution for the project was based on existing traffic volume patterns near the proposed site. **Figure 9** shows the weekday trip distribution for the project as a percentage of net new primary trips. **Figures 10** and **11** show the assignment of the new site generated trips to the project intersections within the study area for the two access scenarios to be analyzed in this report.

### **Existing Traffic Operations**

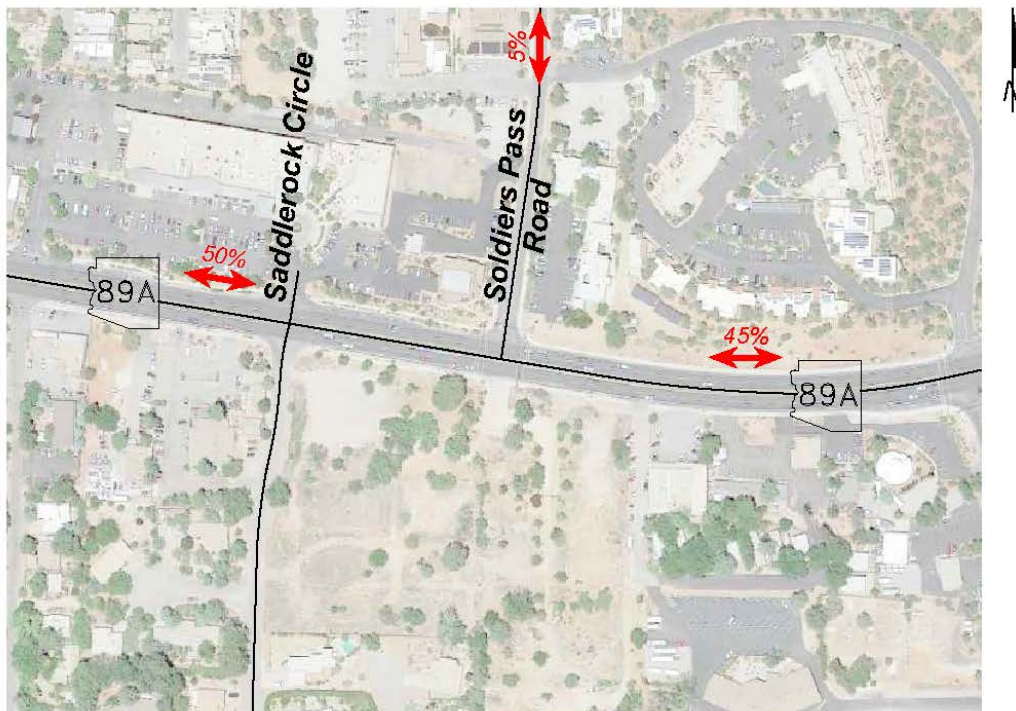
Analysis of current intersection operations was conducted for the weekday and weekend AM and PM peak hours using the nationally accepted methodology set forth in the *Highway Capacity Manual*, Transportation Research Board, 2016 (HCM 6th). The computer software Synchro 11 was utilized to calculate the levels of service for individual movements and approaches.

LOS is a qualitative measure of the traffic operations at an intersection or on a roadway segment. Level of service is ranked from LOS A, which signifies little or no congestion and is the highest rank, to LOS F, which signifies congestion and jam conditions. LOS D is typically considered adequate operation at signalized and un-signalized intersections in developed areas.

While Sedona's population qualifies the City as 'rural', visitor and regional traffic make the area behave closer to urban operations where LOS D is acceptable and appropriate for such conditions.



Figure 9 – Weekday Peak Hour Trip Distribution



**LEGEND:**

— EXISTING ROAD

 PROJECT SITE

 DISTRIBUTION OF VEHICLE TRIPS





Figure 10 – Access Scenario 1 Peak Hour Trip Assignment

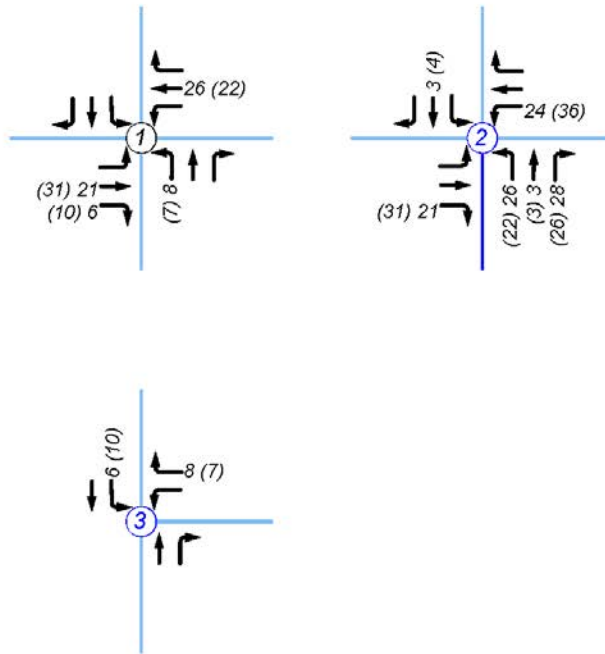
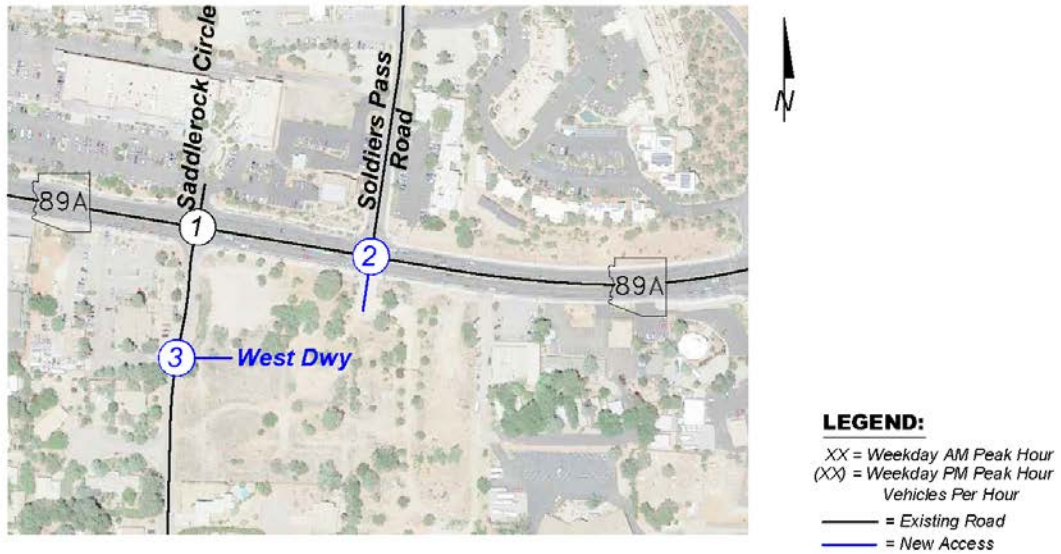
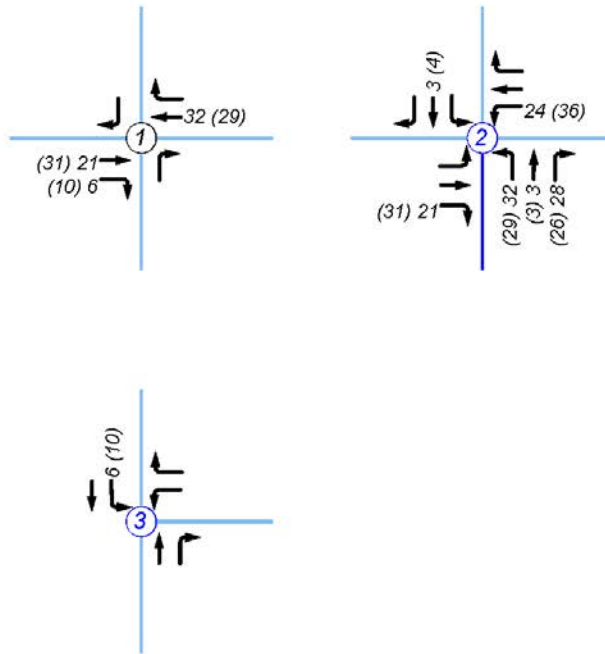
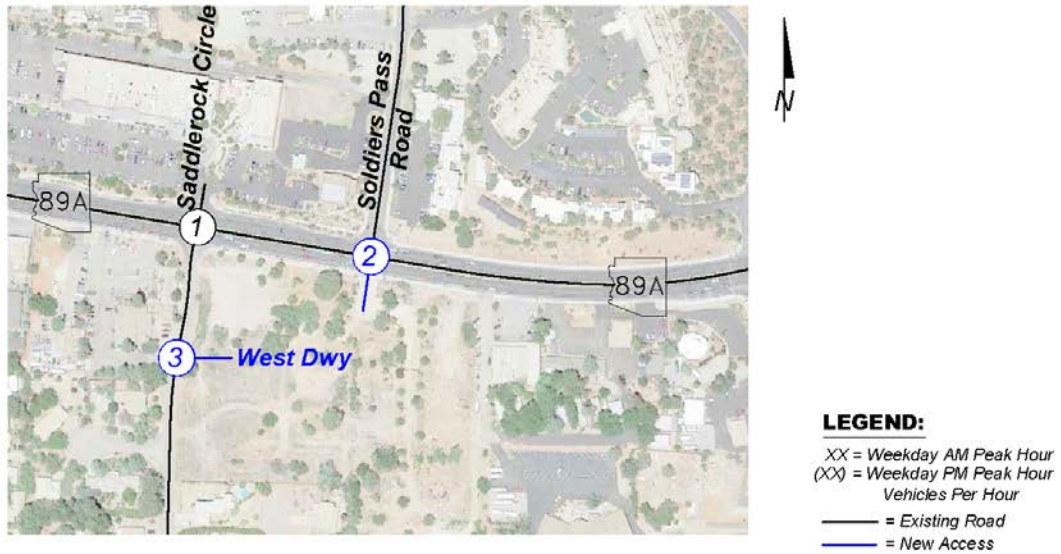




Figure 11 – Access Scenario 2 Peak Hour Trip Assignment





At signalized intersections, level of service is calculated for each movement and then summed in a weighted fashion to yield the LOS for the approach and for the intersections as a whole. Criteria for level of service at signalized intersections are shown in **Table 3**.

**Table 3 – Level of Service Criteria – Signalized Intersections**

Level-of-Service	Average Total Delay
A	$\leq 10.0$ seconds/vehicle
B	$> 10.0$ and $\leq 20.0$ seconds/vehicle
C	$> 20.0$ and $\leq 35.0$ seconds/vehicle
D	$> 35.0$ and $\leq 55.0$ seconds/vehicle
E	$> 55.0$ and $\leq 80.0$ seconds/vehicle
F	$> 80.0$ seconds/vehicle

In calculating the levels of service, assumed signal phasing and timing data was used. Other assumptions included:

- Cycle length – 90 seconds
- Lane widths – 12 feet
- Approach grade – 0%
- Right turn on red allowed

At un-signalized intersections, level of service is predicted/calculated for those movements, which must either stop for or yield to oncoming traffic and is based on average control delay for the particular movement. Control delay is the portion of total delay attributed to traffic control measures such as stop signs and traffic signals. The criteria for level of service at un-signalized intersections are shown in **Table 4**.

**Table 4 – Level of Service Criteria – Un-signalized Intersections**

Level-of-Service	Delay
A	$< 10$ seconds/vehicle
B	$> 10$ and $< 15$ seconds/vehicle
C	$> 15$ and $< 25$ seconds/vehicle
D	$> 25$ and $< 35$ seconds/vehicle
E	$> 35$ and $< 50$ seconds/vehicle
F	$> 50$ seconds/vehicle

**Table 5** shows the levels of service that were calculated for the study intersections during the weekday peak hours in 2019 without the project. **Table 6** shows the expected levels of service for the study intersections during the weekday peak hours in 2022 without the project. **Table 7** shows the expected levels of service for the study intersections during the Saturday peak hours in 2022 without the project. Complete capacity calculations are included in the Appendix.



**Table 5 – 2019 Weekday Peak Hour Levels of Service Without Project**

Intersection	Existing			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.2	B	17.7
Eastbound Left	B	14.4	B	15.3
Eastbound Through	B	13.7	B	11.7
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.9	C	23.0
Westbound Through/Right	C	20.8	C	22.9
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	11.1	B	18.2
Southbound Through/Right	B	11.7	B	18.4
<b>Un-Signalized Intersections</b>				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.6	B	12.4
Westbound Left	B	10.7	B	11.2
Northbound Left/Through/Right	E	45.2	F	>120
Southbound Left/Through/Right	D	28.4	F	>120

Delay - seconds per vehicle

**Table 6 – 2022 Weekday Peak Hour Levels of Service Without Project**

Intersection	2022 Without Project			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.3	B	18.6
Eastbound Left	B	14.5	B	16.1
Eastbound Through	B	13.7	B	11.8
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.9	C	24.6
Westbound Through/Right	C	20.8	C	24.5
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	11.8	B	19.4
Southbound Through/Right	B	12.4	B	19.6
<b>Un-Signalized Intersections</b>				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.8	B	13.1
Westbound Left	B	11.1	B	11.6
Northbound Left/Through/Right	F	55.3	F	>120
Southbound Left/Through/Right	D	33.3	F	>120

Delay - seconds per vehicle



**Table 7 – 2022 Saturday Peak Hour Levels of Service Without Project**

Intersection	2022 Without Project Weekend			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.0	B	16.8
Eastbound Left	B	13.5	B	14.9
Eastbound Through	B	12.5	B	11.9
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.1	C	21.5
Westbound Through/Right	C	20.0	C	21.5
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	12.0	B	16.1
Southbound Through/Right	B	12.3	B	16.7
<b>Un-Signalized Intersections</b>				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.9	B	11.8
Westbound Left	A	9.8	B	10.9
Northbound Left/Through/Right	E	37.6	F	66.6
Southbound Left/Through/Right	D	27.1	F	>120

Delay - seconds per vehicle

As shown in **Tables 5, 6, and 7**, the intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements during the weekday and Saturday peak hours. These delays are expected to continue in 2022 during the weekday and weekend peak hours. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday and weekend peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement.

The remaining study intersections currently operate at adequate LOS.

**Future Traffic Operations Without Project**

In order to assess the impacts of the project on future traffic operations, traffic projections were made for the opening year of 2023 and the horizon year of 2026 for the weekday and Saturday peak hours.

ADOT historical data near the site shows increasing and decreasing traffic volumes in recent years. Using a conservative 2% annual compounded growth rate, 2023 and 2026 weekday and Saturday peak hour traffic volumes without the project were estimated as shown in **Figures 12, 13, 14, and 15**.



Figure 12 – 2023 Weekday Peak Hour Traffic Volumes Without Project

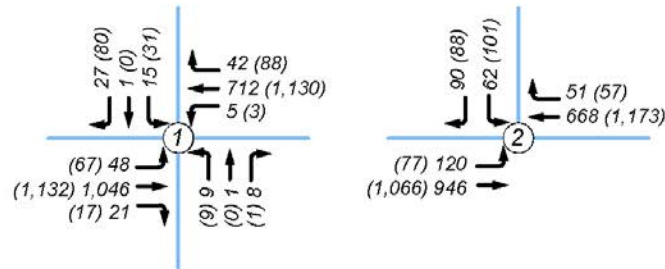
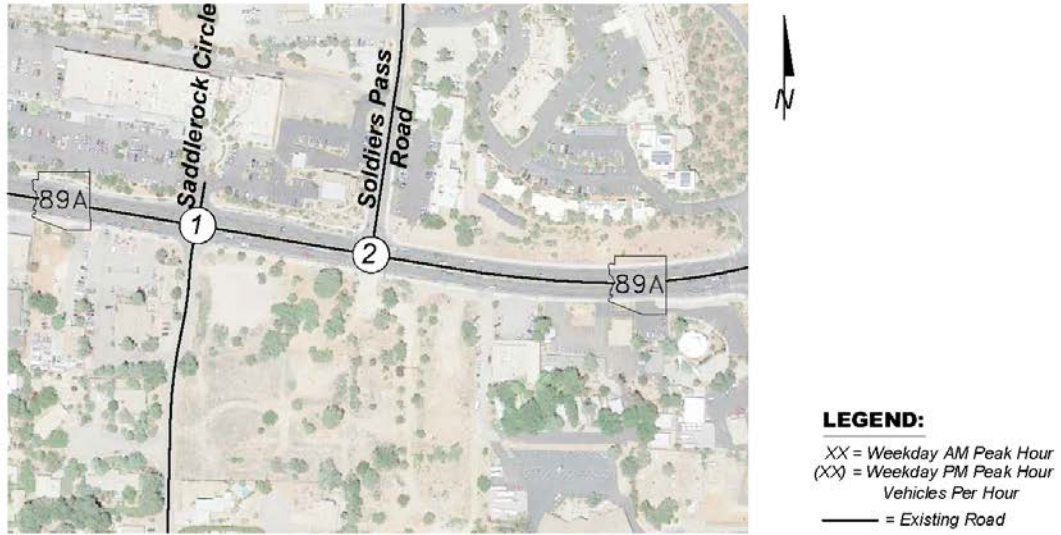




Figure 13 – 2026 Weekday Peak Hour Traffic Volumes Without Project

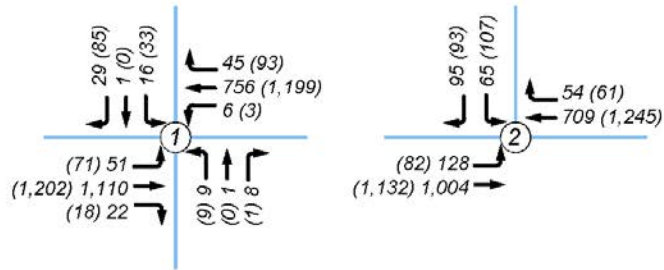
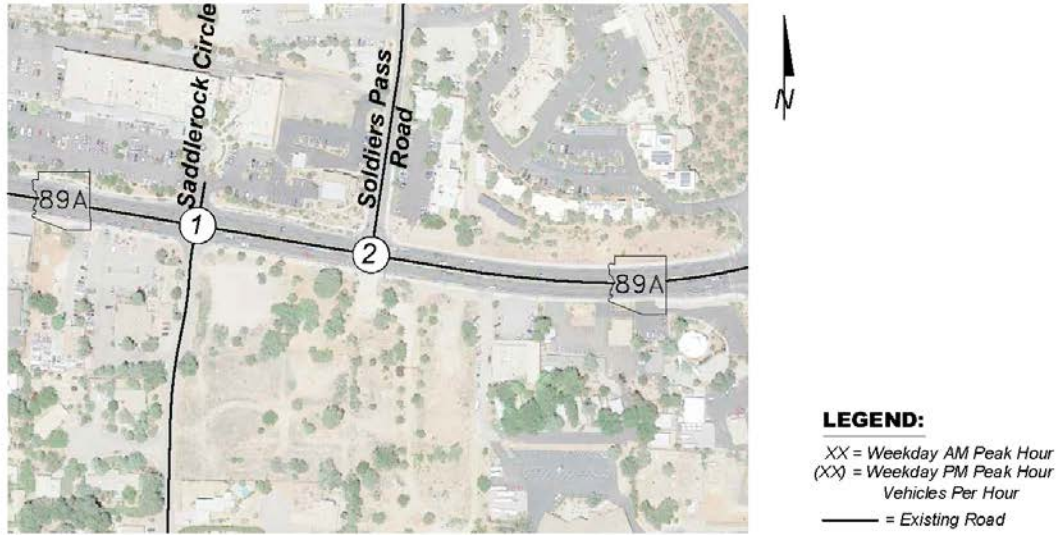




Figure 14 – 2023 Saturday Peak Hour Traffic Volumes Without Project

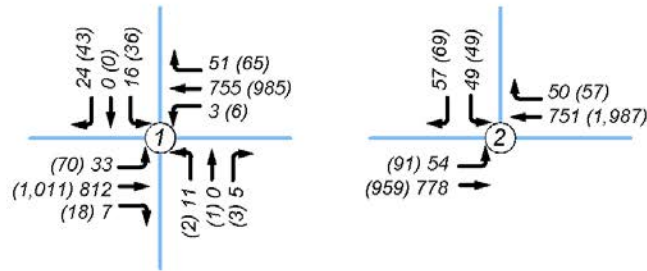
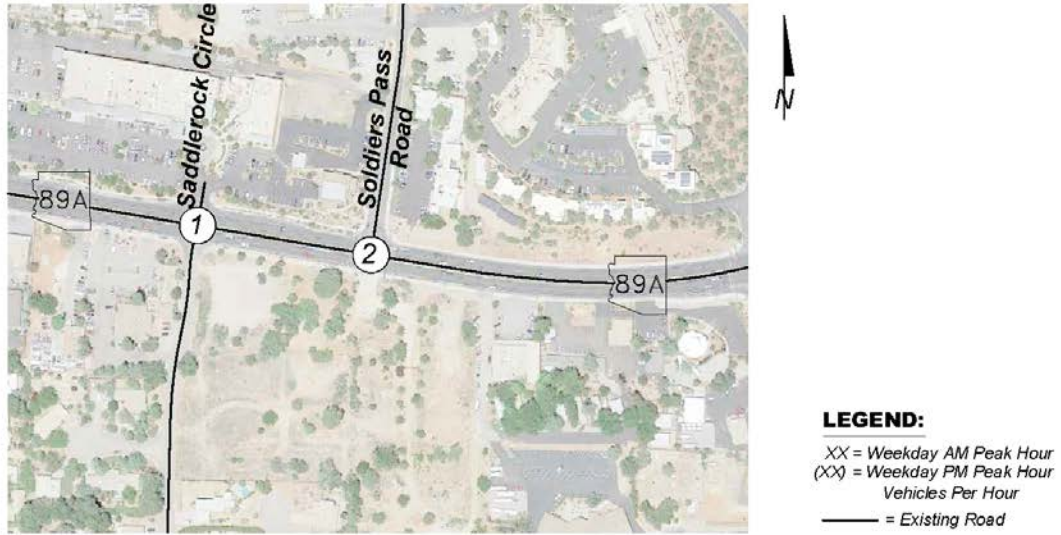
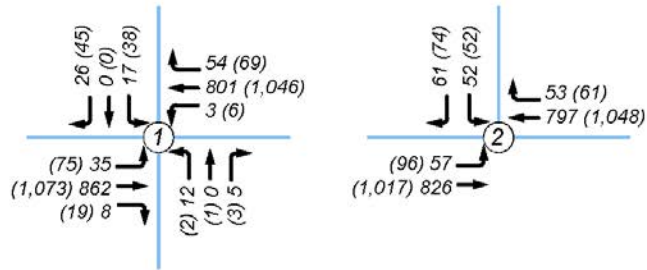
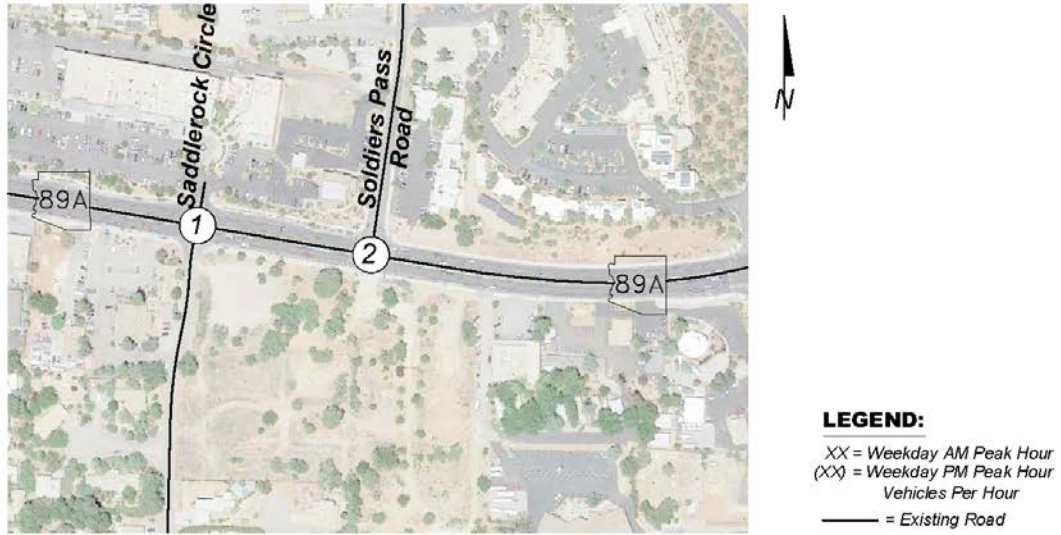






Figure 15 – 2026 Saturday Peak Hour Traffic Volumes Without Project





As with the current volumes, levels of service were calculated for each of the intersections in the study area for 2023 and 2026 without the project. Intersection levels of service for 2023 and 2026 without the project are shown in **Tables 8, 9, 10, and 11**. Complete capacity calculations are included in the Appendix.

**Table 8 – 2023 Weekday Peak Hour Levels of Service Without Project**

Intersection	2023 Without Project			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.3	B	19.0
Eastbound Left	B	14.5	B	16.6
Eastbound Through	B	13.7	B	11.8
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.9	C	25.2
Westbound Through/Right	C	20.9	C	25.2
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	12.1	B	19.8
Southbound Through/Right	B	12.7	C	20.0
<b>Un-Signalized Intersections</b>				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.9	B	13.4
Westbound Left	B	11.2	B	11.7
Northbound Left/Through/Right	F	58.3	F	>120
Southbound Left/Through/Right	E	35.0	F	>120

Delay - seconds per vehicle



**Table 9 – 2026 Weekday Peak Hour Levels of Service Without Project**

Intersection	2026 Without Project			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.5	C	20.4
Eastbound Left	B	14.7	B	18.0
Eastbound Through	B	13.8	B	12.0
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	21.0	C	27.8
Westbound Through/Right	C	21.0	C	27.8
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	12.9	C	20.9
Southbound Through/Right	B	13.6	C	21.1
<b>Un-Signalized Intersections</b>				
Saddlerock Circle/SR 89A				
Eastbound Left	B	10.1	B	14.2
Westbound Left	B	11.6	B	12.2
Northbound Left/Through/Right	F	73.2	F	>120
Southbound Left/Through/Right	E	43.6	F	>120

Delay - seconds per vehicle

**Table 10 – 2023 Saturday Peak Hour Levels of Service Without Project**

Intersection	2023 Without Project Weekend			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.0	B	17.0
Eastbound Left	B	13.5	B	15.1
Eastbound Through	B	12.5	B	11.9
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.1	C	21.8
Westbound Through/Right	C	20.0	C	21.8
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	12.3	B	16.4
Southbound Through/Right	B	12.5	B	17.0
<b>Un-Signalized Intersections</b>				
Saddlerock Circle/SR 89A				
Eastbound Left	B	10.0	B	12.0
Westbound Left	A	9.9	B	11.0
Northbound Left/Through/Right	E	39.2	F	71.1
Southbound Left/Through/Right	D	28.2	F	>120

Delay - seconds per vehicle



**Table 11 – 2026 Saturday Peak Hour Levels of Service Without Project**

Intersection	2026 Without Project Weekend			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.0	B	17.6
Eastbound Left	B	13.6	B	15.9
Eastbound Through	B	12.4	B	12.0
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.1	C	22.9
Westbound Through/Right	C	20.0	C	22.8
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	13.1	B	17.4
Southbound Through/Right	B	13.4	B	18.2
<b>Un-Signalized Intersections</b>				
Saddlerock Circle/SR 89A				
Eastbound Left	B	10.3	B	12.6
Westbound Left	B	10.1	B	11.4
Northbound Left/Through/Right	E	47.6	F	89.7
Southbound Left/Through/Right	D	32.9	F	>120

Delay - seconds per vehicle

As shown in **Tables 8, 9, 10, and 11**, the existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue in 2023 and 2026 without traffic from the Saddle Rock Crossing site during the weekday and weekend peak hours.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

**Future Traffic Operations With Project**

In order to assess the impacts of the project on future traffic operations, levels of service were calculated for each project intersection in 2023 and 2026, with the project. Weekday and Saturday peak hour traffic volumes for 2023 and 2026 without the project were combined with the estimated trips generated by the project to yield weekday and weekend peak hour traffic volumes with the project for both access scenarios. The weekday and weekend peak hour traffic volumes with the project in 2023 and 2026 are shown in **Figures 16 through 23**.

Weekday and Saturday intersection levels of service for 2023 and 2026, with the project and for both scenarios, were then calculated as shown in **Tables 12 through 19**. Complete capacity calculations are included in the Appendix.



Figure 16 – 2023 Weekday Peak Hour Traffic Volumes With Project

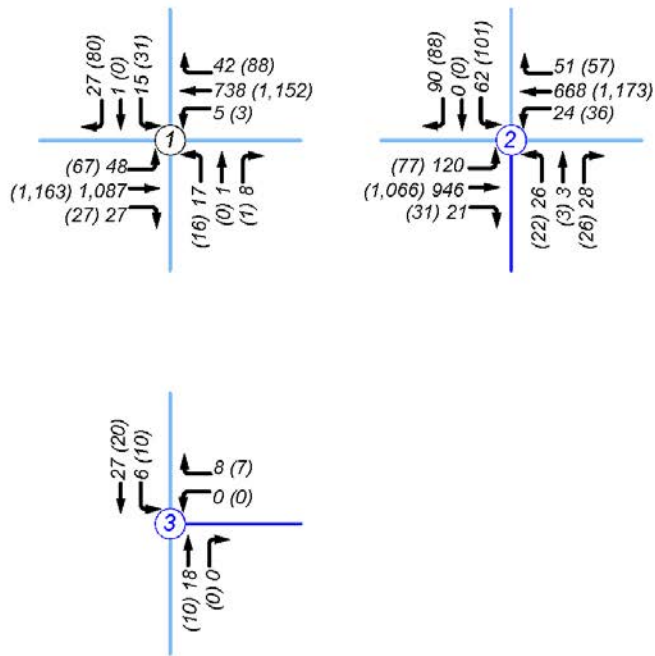
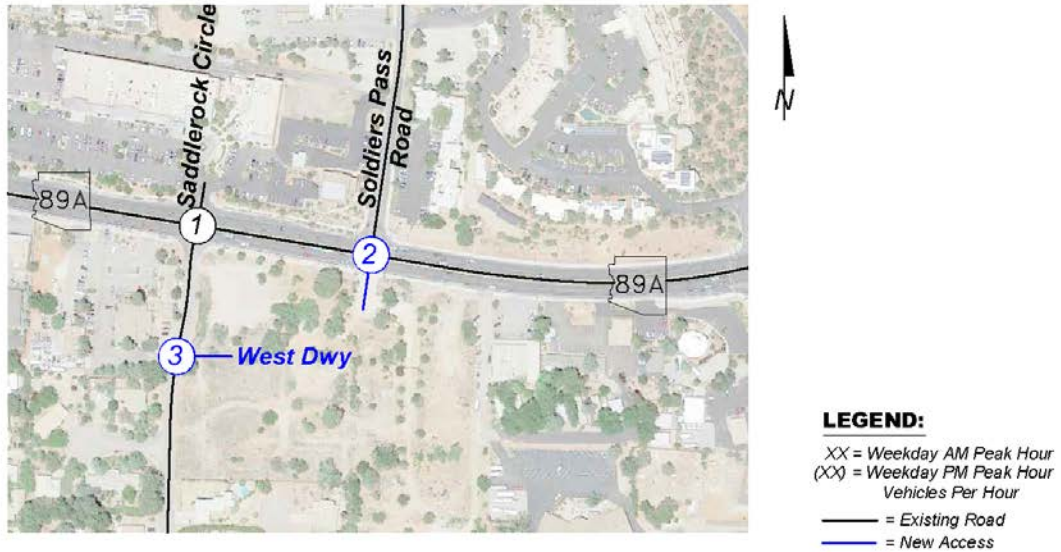




Figure 17 – 2026 Weekday Peak Hour Traffic Volumes With Project

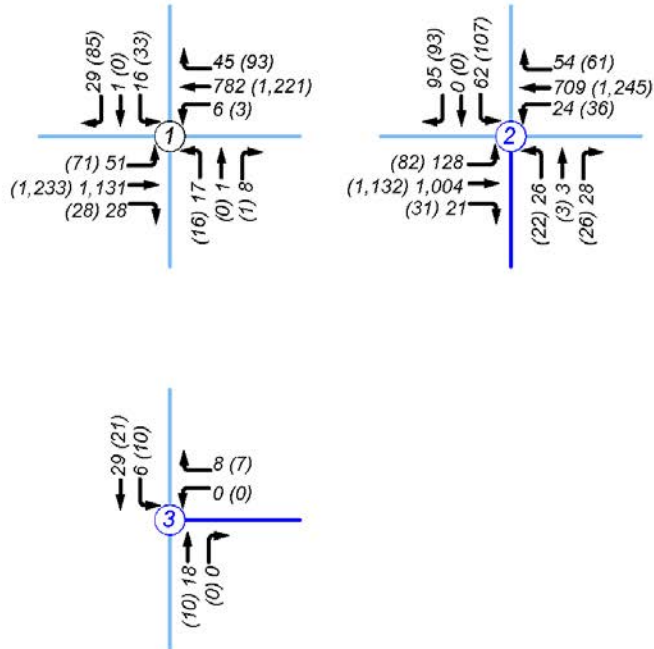
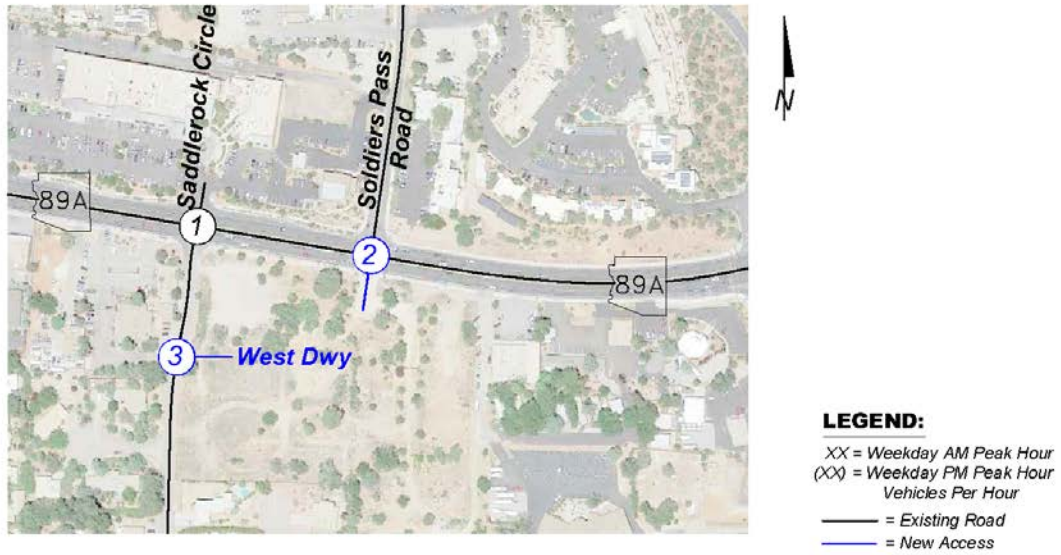




Figure 18 – 2023 Saturday Peak Hour Traffic Volumes With Project

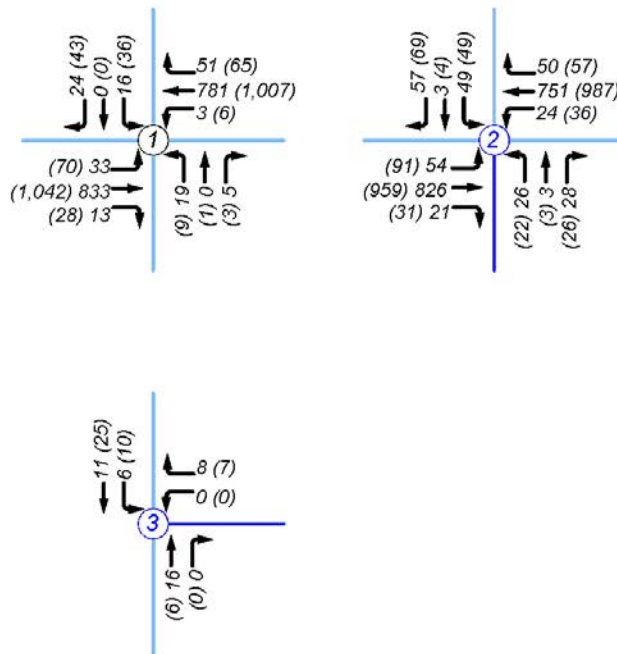
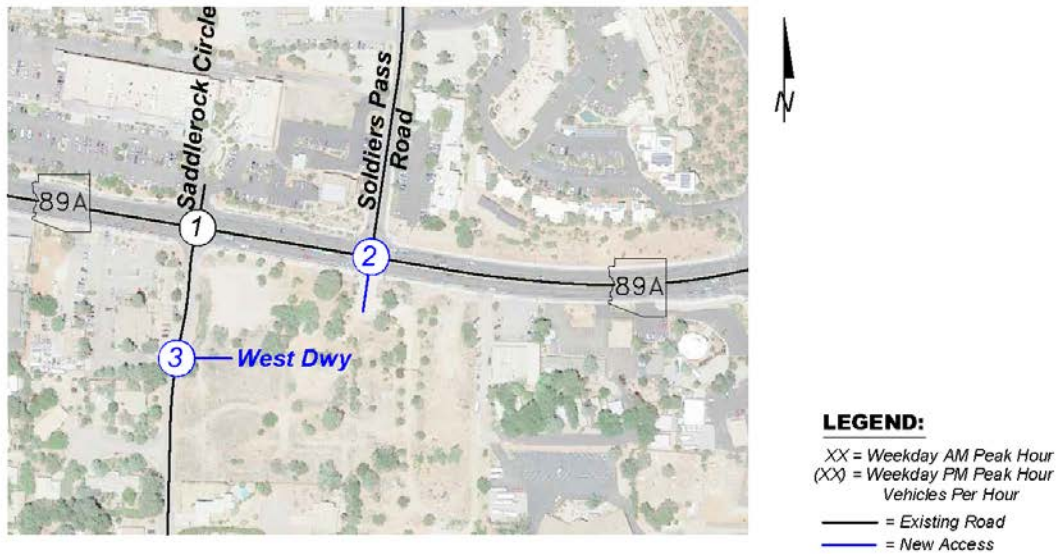
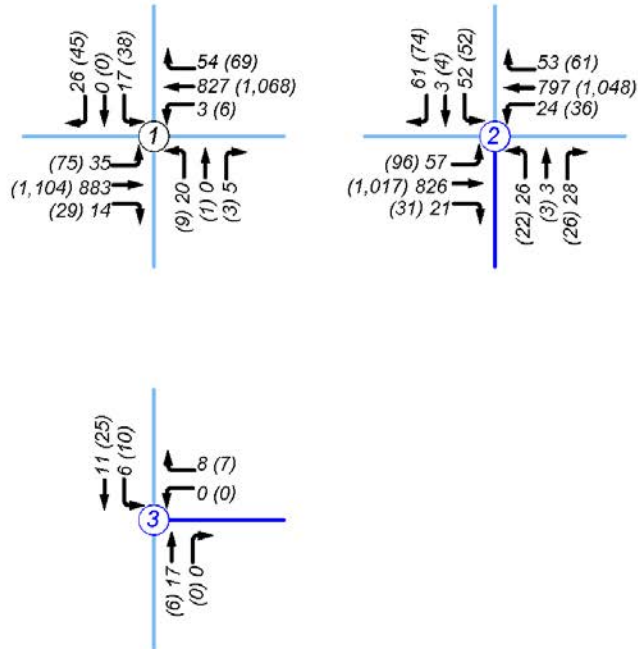
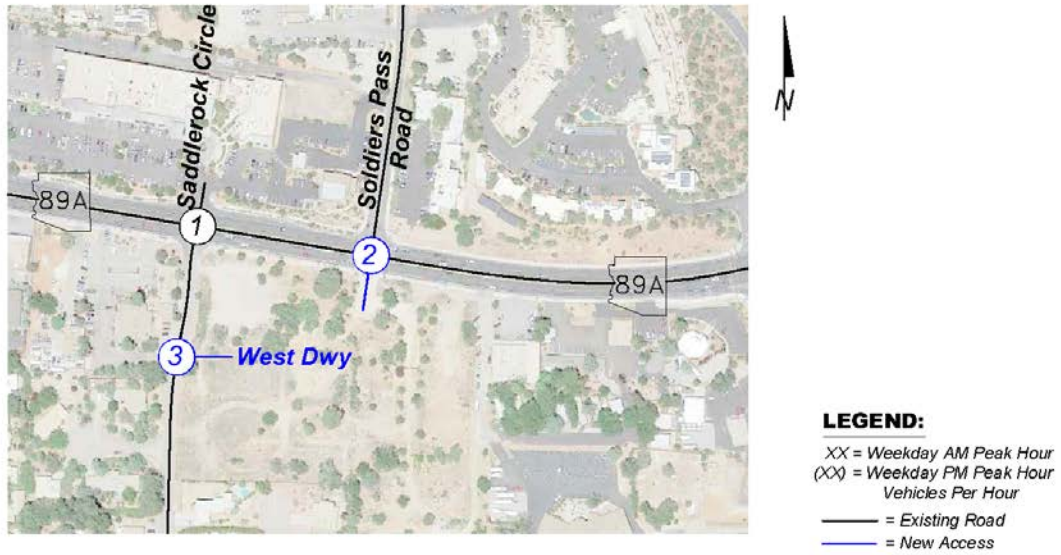




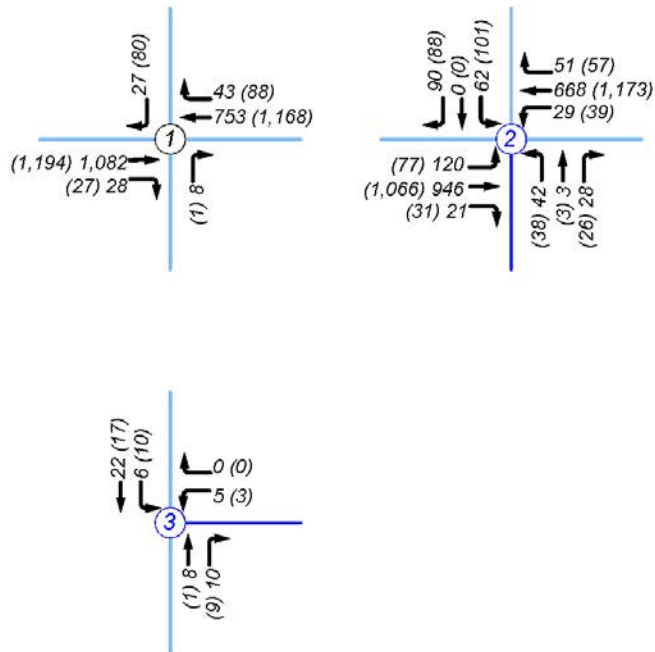
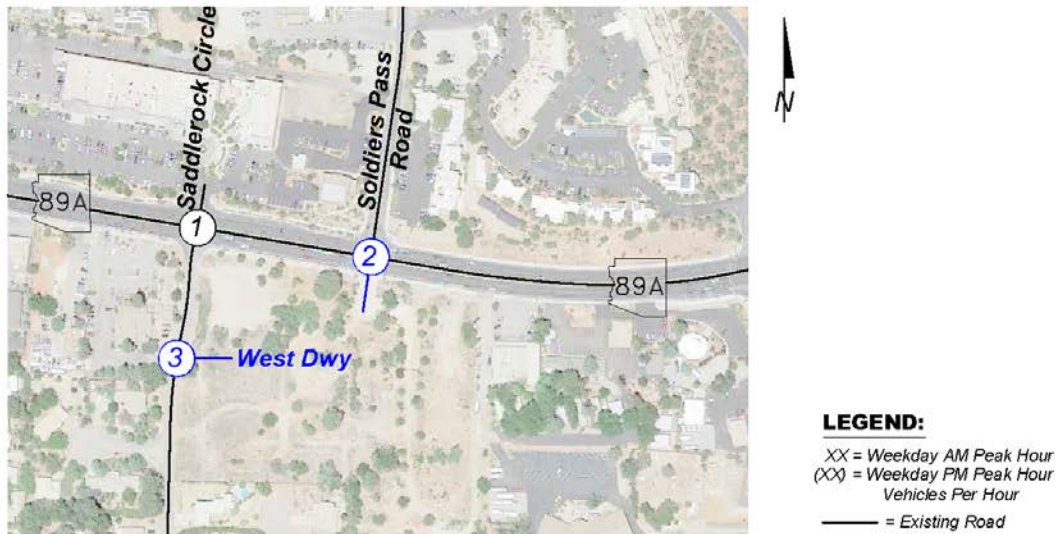
Figure 19 – 2026 Saturday Peak Hour Traffic Volumes With Project





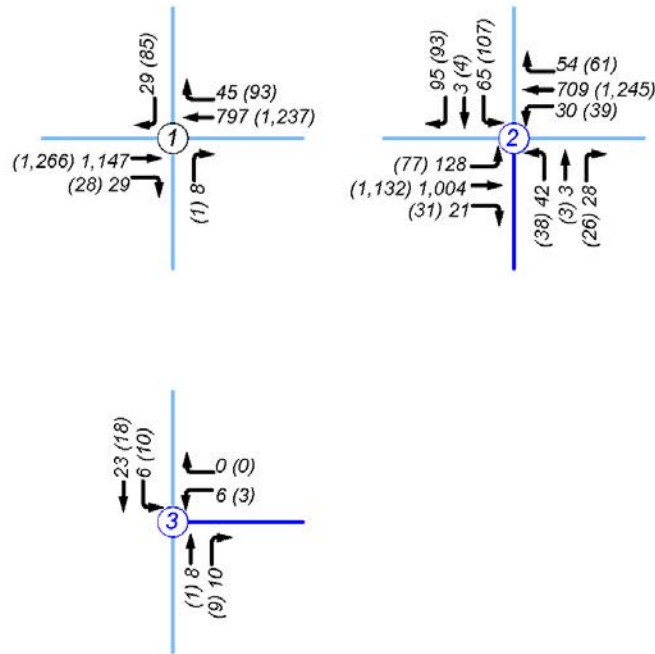
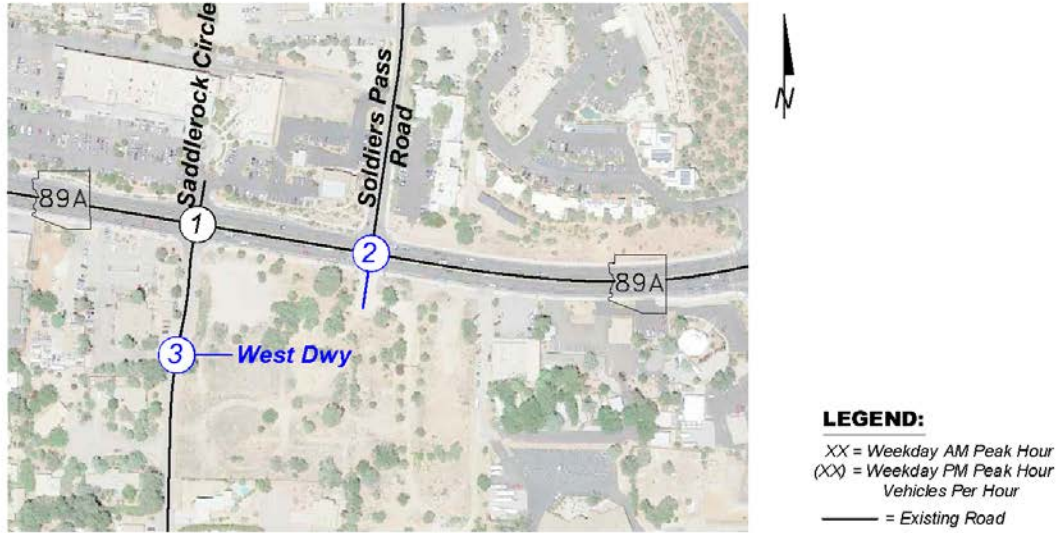


**Figure 20 – 2023 Weekday Peak Hour Traffic Volumes With Project Access Scenario 2**



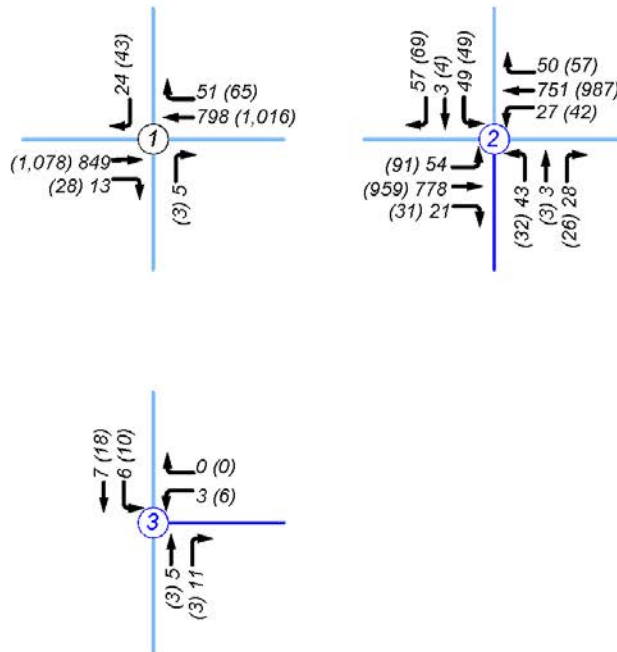
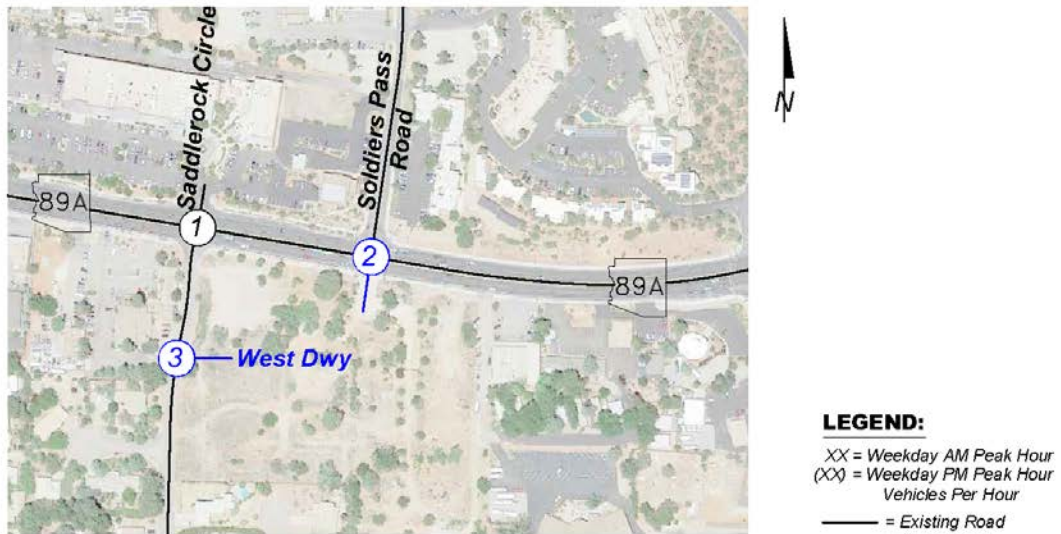


**Figure 21 – 2026 Weekday Peak Hour Traffic Volumes With Project Access Scenario 2**



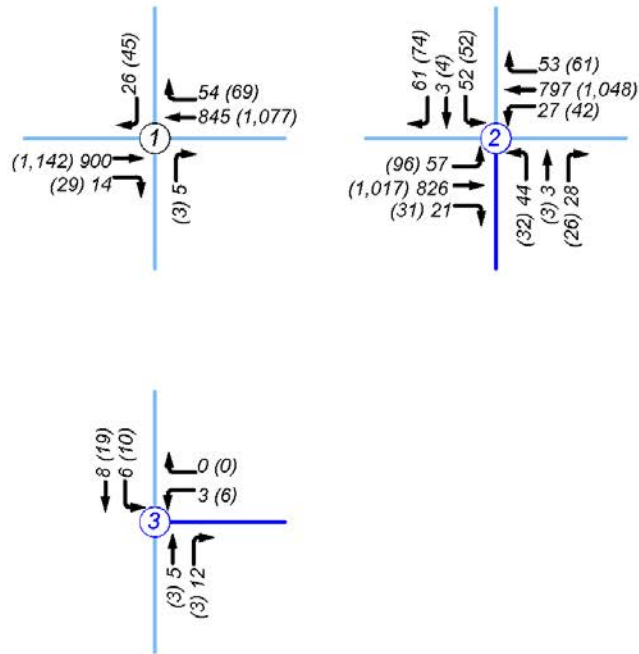
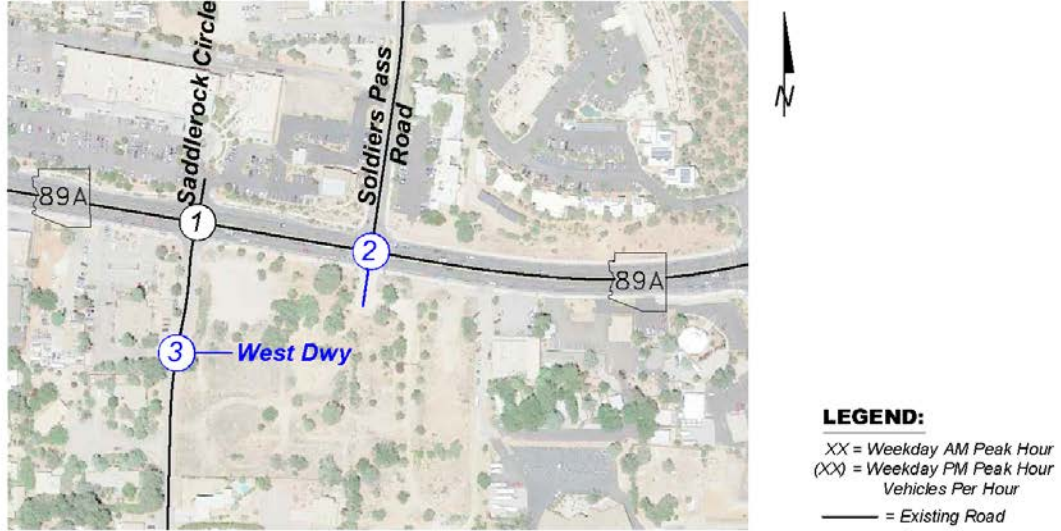


**Figure 22 – 2023 Saturday Peak Hour Traffic Volumes With Project Access Scenario 2**





**Figure 23 – 2026 Saturday Peak Hour Traffic Volumes With Project Access Scenario 2**





**Table 12 – 2023 Weekday Peak Hour Levels of Service With Project**

Intersection	2023 Without Project				2023 With Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
<b>Soldiers Pass Road/SR 89A</b>								
Overall Intersection	B	16.3	B	19.0	B	18.4	C	21.9
Eastbound Left	B	14.5	B	16.6	B	14.1	B	16.7
Eastbound Through	B	13.7	B	11.8	B	19.3	B	19.2
Eastbound Through/Right	A	0.0	A	0.0	B	19.2	B	19.2
Westbound Left	A	0.0	A	0.0	B	15.0	B	13.6
Westbound Through	C	20.9	C	25.2	B	19.3	C	25.2
Westbound Through/Right	C	20.9	C	25.2	B	19.3	C	25.2
Northbound Left	A	0.0	A	0.0	B	15.6	C	21.3
Northbound Through/Right	A	0.0	A	0.0	B	13.7	B	18.7
Southbound Left	B	12.1	B	19.8	B	14.9	C	21.5
Southbound Through/Right	B	12.7	C	20.0	B	14.7	C	20.1
<b>Un-Signalized Intersections</b>								
<b>Saddlerock Circle/SR 89A</b>								
Eastbound Left	A	9.9	B	13.4	B	10.1	B	13.8
Westbound Left	B	11.2	B	11.7	B	11.5	B	12.0
Northbound Left/Through/Right	F	58.3	F	>120	F	103.5	F	>120
Southbound Left/Through/Right	E	35.0	F	>120	E	42.6	F	>120
<b>West Driveway/Saddlerock Circle</b>								
Westbound Left/Right	N/A		N/A		A	8.4	A	8.4
Southbound Left/Through	N/A		N/A		A	7.3	A	7.3

Delay - seconds per vehicle



**Table 13 – 2026 Weekday Peak Hour Levels of Service With Project**

Intersection	2026 Without Project				2026 With Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
<b>Soldiers Pass Road/SR 89A</b>								
Overall Intersection	B	16.5	C	20.4	B	18.8	C	23.6
Eastbound Left	B	14.7	B	18.0	B	14.2	B	18.1
Eastbound Through	B	13.8	B	12.0	B	19.8	C	20.1
Eastbound Through/Right	A	0.0	A	0.0	B	19.7	C	20.0
Westbound Left	A	0.0	A	0.0	B	15.0	B	13.9
Westbound Through	C	21.0	C	27.8	B	19.4	C	27.8
Westbound Through/Right	C	21.0	C	27.8	B	19.4	C	27.8
Northbound Left	A	0.0	A	0.0	B	16.7	C	22.5
Northbound Through/Right	A	0.0	A	0.0	B	14.5	B	19.6
Southbound Left	B	12.9	C	20.9	B	15.9	C	22.8
Southbound Through/Right	B	13.6	C	21.1	B	15.7	C	21.2
<b>Un-Signalized Intersections</b>								
<b>Saddlerock Circle/SR 89A</b>								
Eastbound Left	B	10.1	B	14.2	B	10.3	B	14.7
Westbound Left	B	11.6	B	12.2	B	11.8	B	12.5
Northbound Left/Through/Right	F	73.2	F	>120	F	>120	F	>120
Southbound Left/Through/Right	E	43.6	F	>120	F	53.6	F	>120
<b>West Driveway/Saddlerock Circle</b>								
Westbound Left/Right	N/A		N/A		A	8.4	A	8.4
Southbound Left/Through	N/A		N/A		A	7.3	A	7.3

Delay - seconds per vehicle



**Table 14 – 2023 Saturday Peak Hour Levels of Service With Project**

Intersection	2023 Without Project Weekend				2023 With Project Weekend			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
<b>Soldiers Pass Road/SR 89A</b>								
Overall Intersection	B	16.0	B	17.0	B	18.4	B	19.7
Eastbound Left	B	13.5	B	15.1	B	14.2	B	15.5
Eastbound Through	B	12.5	B	11.9	B	18.4	B	18.7
Eastbound Through/Right	A	0.0	A	0.0	B	18.4	B	18.6
Westbound Left	A	0.0	A	0.0	C	14.2	B	13.8
Westbound Through	C	20.1	C	21.8	C	20.1	C	21.8
Westbound Through/Right	C	20.0	C	21.8	B	20.0	C	21.8
Northbound Left	A	0.0	A	0.0	B	13.2	B	18.0
Northbound Through/Right	A	0.0	A	0.0	B	12.2	B	16.3
Southbound Left	B	12.3	B	16.4	B	13.1	B	17.4
Southbound Through/Right	B	12.5	B	17.0	B	12.6	B	17.1
<b>Un-Signalized Intersections</b>								
<b>Saddlerock Circle/SR 89A</b>								
Eastbound Left	B	10.0	B	12.0	B	10.2	B	12.3
Westbound Left	A	9.9	B	11.0	A	10.0	B	11.2
Northbound Left/Through/Right	E	39.2	F	71.1	F	53.6	F	>120
Southbound Left/Through/Right	D	28.2	F	>120	D	31.5	F	>120
<b>West Driveway/Saddlerock Circle</b>								
Westbound Left/Right	N/A		N/A		A	8.4	A	8.4
Southbound Left/Through	N/A		N/A		A	7.3	A	7.3

Delay - seconds per vehicle



**Table 15 – 2026 Saturday Peak Hour Levels of Service With Project**

Intersection	2026 Without Project Weekend				2026 With Project Weekend			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
<b>Soldiers Pass Road/SR 89A</b>								
Overall Intersection	B	16.0	B	17.6	B	18.5	C	20.5
Eastbound Left	B	13.6	B	15.9	B	14.3	B	16.1
Eastbound Through	B	12.4	B	12.0	B	18.3	B	19.1
Eastbound Through/Right	A	0.0	A	0.0	B	18.3	B	19.1
Westbound Left	A	0.0	A	0.0	B	14.1	B	13.8
Westbound Through	C	20.1	C	22.9	C	20.1	C	22.9
Westbound Through/Right	C	20.0	C	22.8	C	20.0	C	22.8
Northbound Left	A	0.0	A	0.0	B	14.2	B	19.2
Northbound Through/Right	A	0.0	A	0.0	B	13.0	B	17.3
Southbound Left	B	13.1	B	17.4	B	14.0	B	18.6
Southbound Through/Right	B	13.4	B	18.2	B	13.4	B	18.2
<b>Un-Signalized Intersections</b>								
<b>Saddlerock Circle/SR 89A</b>								
Eastbound Left	B	10.3	B	12.6	B	10.5	B	13.0
Westbound Left	B	10.1	B	11.4	B	10.2	B	11.7
Northbound Left/Through/Right	E	47.6	F	89.7	F	66.7	F	>120
Southbound Left/Through/Right	D	32.9	F	>120	E	37.3	F	>120
<b>West Driveway/Saddlerock Circle</b>								
Westbound Left/Right	N/A		N/A		A	8.4	A	8.4
Southbound Left/Through	N/A		N/A		A	7.3	A	7.3

Delay - seconds per vehicle





**Table 16 – 2023 Weekday Peak Hour Levels of Service With Project Access Scenario 2**

Intersection	2023 Without Project				2023 With Project Scenario 2			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
Soldiers Pass Road/SR 89A								
Overall Intersection	B	16.3	B	19.0	B	18.4	C	22.0
Eastbound Left	B	14.5	B	16.6	B	14.2	B	16.7
Eastbound Through	B	13.7	B	11.8	B	19.4	B	19.4
Eastbound Through/Right	A	0.0	A	0.0	B	19.4	B	19.3
Westbound Left	A	0.0	A	0.0	B	14.9	B	13.7
Westbound Through	C	20.9	C	25.2	B	19.2	B	25.2
Westbound Through/Right	C	20.9	C	25.2	B	19.2	C	25.2
Northbound Left	A	0.0	A	0.0	B	16.2	C	21.8
Northbound Through/Right	A	0.0	A	0.0	B	13.8	B	18.7
Southbound Left	B	12.1	B	19.8	B	15.1	C	21.5
Southbound Through/Right	B	12.7	C	20.0	B	14.8	C	20.1
<b>Un-Signalized Intersections</b>								
Saddlerock Circle/SR 89A								
Eastbound Left	A	9.9	B	13.4	N/A		N/A	
Westbound Left	B	11.2	B	11.7				
Northbound Left/Through/Right	F	58.3	F	>120				
Northbound Right	N/A		N/A		B	13.5	B	14.2
Southbound Left/Through/Right	E	35.0	F	>120	N/A		N/A	
Southbound Right	N/A		N/A		B	11.6	C	16.5
West Driveway/Saddlerock Circle								
Westbound Left/Right	N/A		N/A		A	8.9	A	8.8
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle



**Table 17 – 2026 Weekday Peak Hour Levels of Service With Project Access Scenario 2**

Intersection	2026 Without Project				2026 With Project Scenario 2			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
<b>Soldiers Pass Road/SR 89A</b>								
Overall Intersection	B	16.5	C	20.4	B	18.9	C	23.7
Eastbound Left	B	14.7	B	18.0	B	14.2	B	17.9
Eastbound Through	B	13.8	B	12.0	C	20.0	C	20.3
Eastbound Through/Right	A	0.0	A	0.0	B	19.9	C	20.2
Westbound Left	A	0.0	A	0.0	B	15.0	B	14.0
Westbound Through	C	21.0	C	27.8	B	19.2	C	27.7
Westbound Through/Right	C	21.0	C	27.8	B	19.2	C	27.7
Northbound Left	A	0.0	A	0.0	B	17.4	C	23.0
Northbound Through/Right	A	0.0	A	0.0	B	14.7	B	19.6
Southbound Left	B	12.9	C	20.9	B	16.1	C	22.7
Southbound Through/Right	B	13.6	C	21.1	B	15.9	C	21.2
<b>Un-Signalized Intersections</b>								
<b>Saddlerock Circle/SR 89A</b>								
Eastbound Left	B	10.1	B	14.2	N/A		N/A	
Westbound Left	B	11.6	B	12.2				
Northbound Left/Through/Right	F	73.2	F	>120				
Northbound Right	N/A		N/A		B	14	B	14.7
Southbound Left/Through/Right	E	43.6	F	>120	N/A		N/A	
Southbound Right	N/A		N/A		B	11.8	C	17.7
<b>West Driveway/Saddlerock Circle</b>								
Westbound Left/Right	N/A		N/A		A	8.9	A	8.8
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle



**Table 18 – 2023 Saturday Peak Hour Levels of Service With Project Access Scenario 2**

Intersection	2023 Without Project Weekend				2023 With Project Weekend Scenario 2			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
<b>Soldiers Pass Road/SR 89A</b>								
Overall Intersection	B	16.0	B	17.0	B	18.4	B	19.8
Eastbound Left	B	13.5	B	15.1	B	14.2	B	15.5
Eastbound Through	B	12.5	B	11.9	B	18.6	B	19.0
Eastbound Through/Right	A	0.0	A	0.0	B	18.5	B	18.9
Westbound Left	A	0.0	A	0.0	B	14.2	B	13.8
Westbound Through	C	20.1	C	21.8	C	20.1	C	21.8
Westbound Through/Right	C	20.0	C	21.8	C	20.0	C	21.8
Northbound Left	A	0.0	A	0.0	B	13.6	B	18.2
Northbound Through/Right	A	0.0	A	0.0	B	12.2	B	16.3
Southbound Left	B	12.3	B	16.4	B	13.1	B	17.4
Southbound Through/Right	B	12.5	B	17.0	B	12.6	B	17.1
<b>Un-Signalized Intersections</b>								
<b>Saddlerock Circle/SR 89A</b>								
Eastbound Left	B	10.0	B	12.0	N/A	N/A	N/A	N/A
Westbound Left	A	9.9	B	11.0				
Northbound Left/Through/Right	E	39.2	F	71.1				
Northbound Right	N/A		N/A		B	11.8	B	13.4
Southbound Left/Through/Right	D	28.2	F	>120	N/A		N/A	
Southbound Right	N/A		N/A		B	11.8	B	13.7
<b>West Driveway/Saddlerock Circle</b>								
Westbound Left/Right	N/A		N/A		A	8.7	A	8.8
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle



**Table 19 – 2026 Saturday Peak Hour Levels of Service With Project Access Scenario 2**

Intersection	2026 Without Project Weekend				2026 With Project Weekend Scenario 2			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Signalized Intersections</b>								
Soldiers Pass Road/SR 89A								
Overall Intersection	B	16.0	B	17.6	B	18.5	C	20.6
Eastbound Left	B	13.6	B	15.9	B	14.3	B	16.1
Eastbound Through	B	12.4	B	12.0	B	18.5	B	19.5
Eastbound Through/Right	A	0.0	A	0.0	B	18.5	B	19.4
Westbound Left	A	0.0	A	0.0	B	14.1	B	13.9
Westbound Through	C	20.1	C	22.9	C	20.1	C	22.9
Westbound Through/Right	C	20.0	C	22.8	C	20.0	C	22.8
Northbound Left	A	0.0	A	0.0	B	14.6	B	19.5
Northbound Through/Right	A	0.0	A	0.0	B	13.0	B	17.3
Southbound Left	B	13.1	B	17.4	B	14.0	B	18.6
Southbound Through/Right	B	13.4	B	18.2	B	13.4	B	18.2
<b>Un-Signalized Intersections</b>								
Saddlerock Circle/SR 89A								
Eastbound Left	B	10.3	B	12.6	N/A		N/A	
Westbound Left	B	10.1	B	11.4				
Northbound Left/Through/Right	E	47.6	F	89.7				
Northbound Right	N/A		N/A		B	12.1	B	13.8
Southbound Left/Through/Right	D	32.9	F	>120	N/A		N/A	
Southbound Right	N/A		N/A		B	12.1	B	14.3
West Driveway/Saddlerock Circle								
Westbound Left/Right	N/A		N/A		A	8.7	A	8.8
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle

As shown in **Tables 12 through 19**, the intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project in the original access scenario.

The second access scenario treats the intersection of Saddlerock Circle/SR 89a as a right in/right out only and redirects traffic from Saddlerock Circle/SR 89A to Soldier Pass Road/SR 89A. The LOS at the study intersections resulting from this redirection is expected to be C or better.

All remaining study intersections are expected to operate at an adequate LOS.



## Turn Lane Analysis

A key element of this traffic analysis is to determine if right and left turn lanes are required at the driveways providing direct access to the project. The need for turn lanes were based on the ADOT’s *Traffic Guidelines and Processes 245 – Turn Lane Warrants* (TGP 245) at the intersection of Soldiers Pass Road/SR 89A. City of Sedona guidelines were reviewed to determine the need for auxiliary turn lanes for the proposed access points on Saddlerock Circle.

When needed, turn lanes remove the slowing turning traffic from the through traffic stream, improving capacity and reducing rear-end accidents. **Table 20** shows the locations that were evaluated for left and right turn lanes based on weekday traffic volumes in 2026 with the project. Weekday volumes from 2026 were used due to the higher volume of vehicles during the peak hours compared to Saturday peak hour volumes.

**Table 20 – Turn Lane Warrants**

Intersection	Direction	Turn Treatment Analyzed	Guidelines Applied	Turn Treatments Warranted?
Soldiers Pass Road/SR 89A	Eastbound	Right Turn Lane	ADOT	Proposed
West Driveway/Saddlerock Circle	Southbound	Left Turn Lane	Sedona	No

As shown in **Table 20**, a dedicated right turn lane is proposed for the eastbound direction at Soldiers Pass Road/SR 89A. A southbound left turn lane is not warranted at West Driveway/Saddlerock Circle.

A key element of this analysis is to estimate the queue storage requirements for the proposed right turn lane at Soldier Pass Road/SR 89A.

Queue storage requirements for the warranted right turn lane into the proposed site was calculated using the following methods as recommended in *A Policy of Geometric Design of Highways and Streets* (AASHTO, 2011). Typically, an average vehicle length of 25 feet is assumed.

For un-signalized intersections, storage for vehicles likely to arrive in an average two-minute period within the peak hour should be provided.

$$\begin{aligned} \text{Vehicles per 2 min. period} &= (\text{vehicles/hour}) \div (30 \text{ periods/hour}) \\ \text{Storage length} &= \text{vehicles per 2 min. period} \times 25 \end{aligned}$$

**Table 21** shows the calculated queue lengths for the proposed eastbound right turn lane based on 2026 weekday traffic volumes with traffic from the project.



**Table 21 – Turn Lane Warrants**

Intersection	Right Turn Storage			
	NB	SB	EB	WB
Soldiers Pass Road/SR 89A				
Turning Volume (vph)			31	
$S_{\text{calculated}} =$			39	
$S_{\text{rounded}} =$			50	

S - storage in feet, vph - vehicles per hour

As shown in **Table 21**, the dedicated right turn lane proposed at Soldiers Pass Road/SR 89A will require a minimum of 50 feet of storage.

**Crash Analysis**

Crash history for the three study intersections was obtained from ADOT between 1 January 2016 to 31 December 2020. The results of the crash data review are shown in **Tables 22** and **23**.

**Table 22 – Crash Analysis at Soldiers Pass Road/SR 89A**

Year	Crash Type							Fatal	Injury	Crash Totals
	Angle	Left Turn	Rear-End	Sideswipe	Single Vehicle	Head On	Other			
2016			2		1				1	3
2017	1	2	2	1			1		1	7
2018			1		1					2
2019			1						1	1
2020										
<b>5-Year Total</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>13</b>

**Table 22** shows that thirteen (13) crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study analyzed. Of these crashes, six (6) were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.



**Table 23 – Crash Analysis at Saddlerock Circle/SR 89A**

Year	Crash Type							Fatal	Injury	Crash Totals
	Angle	Left Turn	Rear-End	Sideswipe	Single Vehicle	Head On	Other			
2015		1								1
2016			1							1
2017	1									1
2018										0
2019	1								1	0
<b>5-Year Total</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>

As shown in **Table 23**, there were three (3) reported collisions with one injury at the intersection of Saddlerock Circle/SR 89A within the five-year study period.

It is possible that other crashes occurred in the area where the Police Department was not contacted, and no official record of these crashes exists.

**Mitigation**

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project in the original access scenario. These delays are expected to continue in 2023 and 2026 during the weekday and weekend peak hours. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday and weekend peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. While a traffic signal would be expected to alleviate the delays, the intersection is less than 500 feet away from the signalized Soldiers Pass Road/SR 89A intersection and would negatively impact progression on SR 89A. Further mitigation options are limited or require removing left turn movements and rerouting residential traffic through commercial areas.

**Conclusion**

When fully completed, the proposed Saddle Rock Crossing project is predicted to generate an additional 1,504 vehicle trips per day (vtpd) on weekdays to the adjacent street system from the new project site. Fifty percent of these new trips (752 vehicle trips) will be into the project and fifty percent will be out of the project.

the intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements during the weekday and Saturday peak hours. These delays are expected to continue in 2022 during the weekday and weekend peak hours.



The remaining study intersections currently operate at adequate LOS.

Motorists on Saddlerock Circle travel at an average speed of 23 to 24 mph with a northbound-southbound average of 69.3% of vehicles traveling under 25 mph.

The existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue in 2023 and 2026 without traffic from the Saddle Rock Crossing site during the weekday and weekend peak hours.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project in the original access scenario.

The second access scenario treats the intersection of Saddlerock Circle/SR 89a as a right in/right out only and redirects traffic from Saddlerock Circle/SR 89A to Soldier Pass Road/SR 89A. The LOS at the study intersections resulting from this redirection is expected to be C or better.

All remaining study intersections are expected to operate at an adequate LOS.

An eastbound right turn lane is proposed at the intersection of Soldiers Pass Road/SR 89A. This turn lane should be installed to provide a minimum of 50 feet of storage.

Based on crash data retrieved from the ADOT database, 13 crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study analyzed between 2016 and 2020. Of these crashes, six (6) were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

With limited crashes at the intersection of Saddlerock Circle/SR 89A, no specific crash trends can be identified.

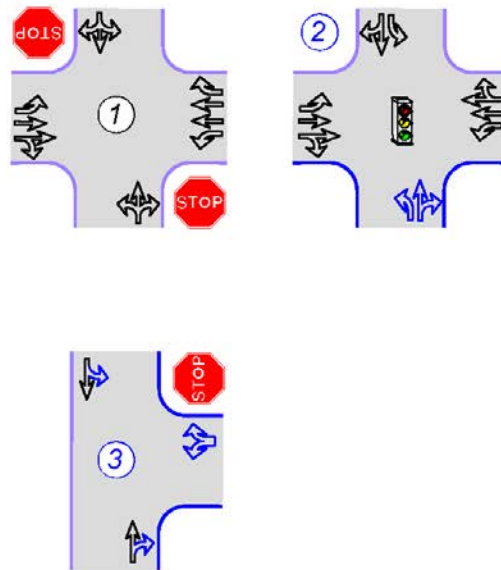
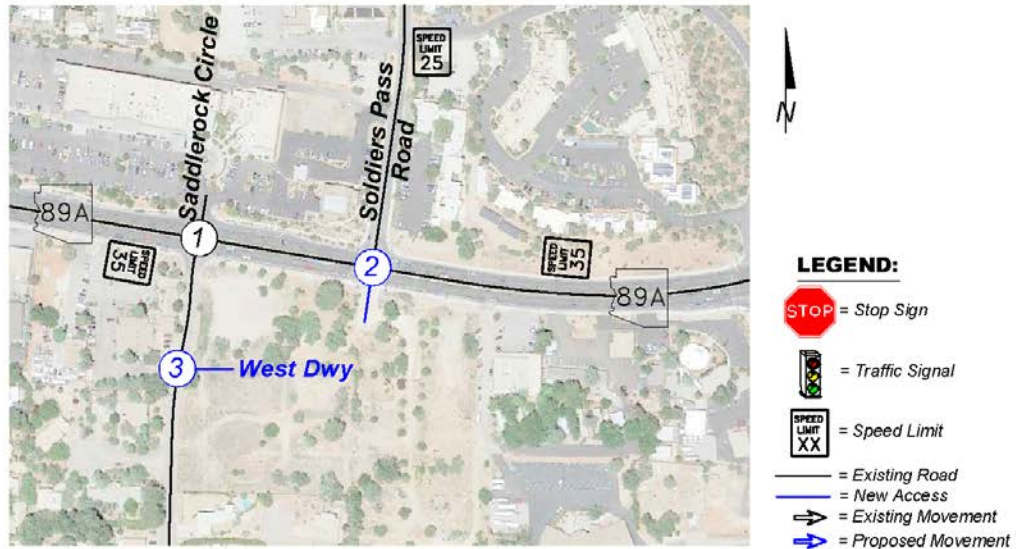
The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project in the original access scenario. These delays are expected to continue in 2023 and 2026 during the weekday and weekend peak hours. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday and weekend peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. While a traffic signal would be expected to alleviate the delays, the intersection is less than 500 feet away from the signalized Soldiers Pass Road/SR 89A intersection and would negatively impact progression on SR 89A. Further mitigation options are limited or require removing left turn movements and rerouting residential traffic through commercial areas.

Proposed lane configurations and traffic control are shown in **Figure 24**.





Figure 24 – Proposed Lane Configurations and Traffic Control





**SADDLE ROCK CROSSING  
SOLDIERS PASS ROAD/STATE ROUTE 89A  
TRAFFIC IMPACT ANALYSIS**

**APPENDIX**

**Traffic Counts**

**Trip Generation Calculations**

**Capacity Calculations**

**Approved ADOT TIA Presubmittal Form**

**Comment Resolution**



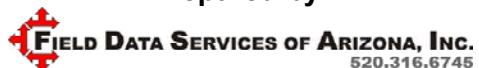
**SADDLE ROCK CROSSING  
SOLDIERS PASS ROAD/STATE ROUTE 89A  
TRAFFIC IMPACT ANALYSIS**

**APPENDIX**

**Traffic Counts**

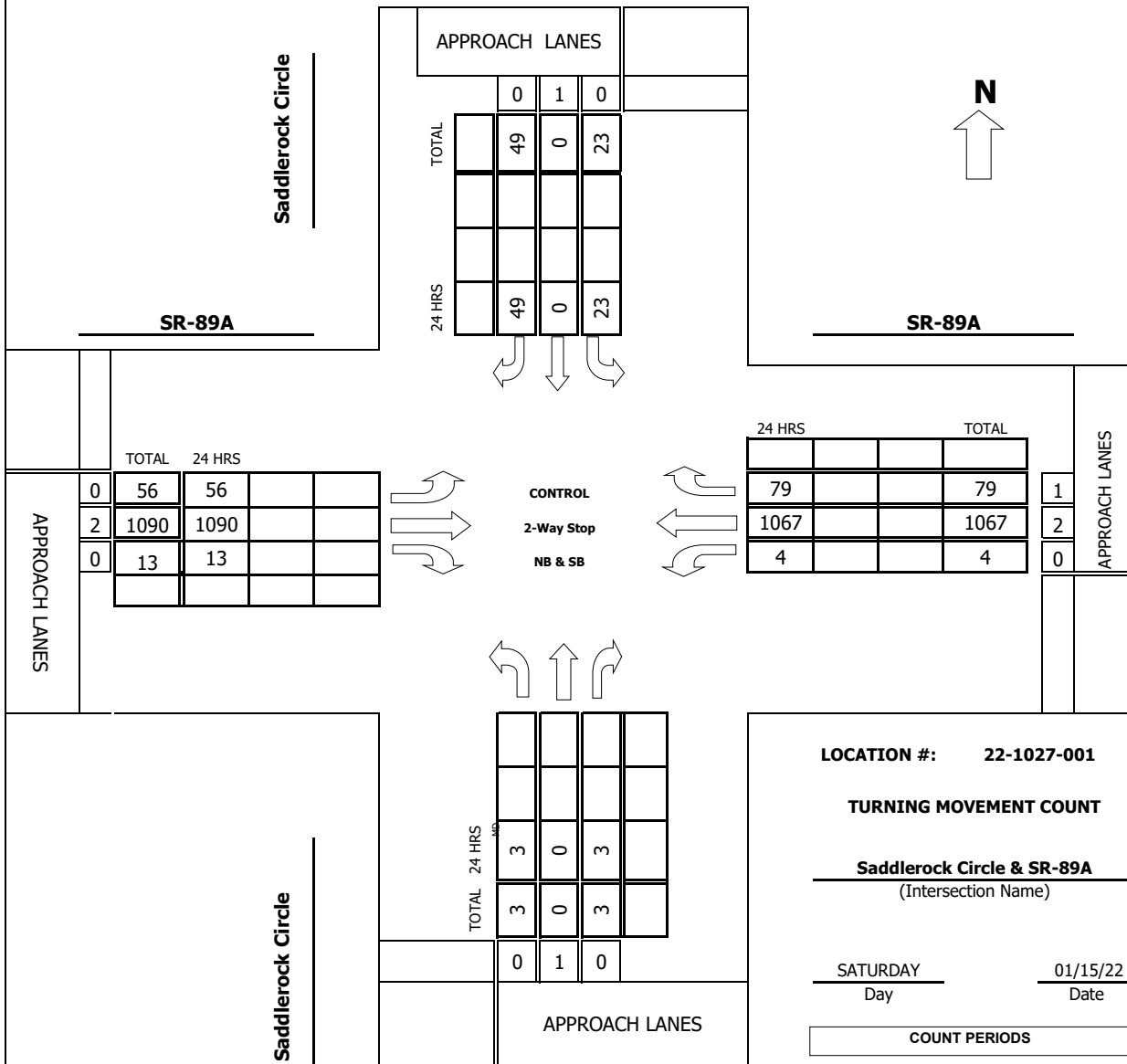
# Intersection Turning Movement

Prepared by:



Project #: 22-1027-001

## TMC SUMMARY OF Saddlerock Circle & SR-89A



LOCATION #: **22-1027-001**

### TURNING MOVEMENT COUNT

**Saddlerock Circle & SR-89A**  
(Intersection Name)

SATURDAY 01/15/22  
Day Date

### COUNT PERIODS

AM	1200AM	-	1200AM
NOON	-	-	-
PM	-	-	-

AM PEAK HOUR 230 PM

NOON PEAK HOUR \_\_\_\_\_

PM PEAK HOUR \_\_\_\_\_

**Intersection Turning Movement**  
Prepared by:



N-S STREET: **Saddlerock Circle**      DATE: **01/15/22**      LOCATION: **Sedona**  
 E-W STREET: **SR-89A**      DAY: **SATURDAY**      PROJECT#: **22-1027-001**

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
12:00 AM	0	0	0	0	0	1	0	5	0	0	15	0	21
12:15 AM	0	0	0	0	0	0	0	8	0	0	19	0	27
12:30 AM	0	0	0	0	0	0	0	8	0	0	16	0	24
12:45 AM	0	0	0	0	0	0	0	4	0	0	9	0	13
1:00 AM	0	0	0	0	0	0	0	4	0	0	13	0	17
1:15 AM	0	0	0	0	0	0	0	3	1	0	8	0	12
1:30 AM	0	0	0	0	0	0	0	1	0	0	4	0	5
1:45 AM	0	0	0	0	0	0	0	5	0	0	4	0	9
2:00 AM	0	0	0	0	0	0	0	3	0	0	4	0	7
2:15 AM	0	0	0	0	0	0	0	3	0	0	5	0	8
2:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
2:45 AM	0	0	0	0	0	0	0	2	0	0	5	0	7
3:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:15 AM	0	0	0	0	0	0	0	2	0	0	5	0	7
3:30 AM	0	0	0	0	0	0	0	14	3	0	3	0	17
3:45 AM	1	0	0	0	0	0	0	3	0	0	1	0	4
4:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 AM	0	0	0	0	0	0	0	5	0	0	3	0	8
4:30 AM	0	0	0	0	0	0	0	6	0	0	5	0	11
4:45 AM	0	0	0	0	0	1	0	2	0	0	4	1	8
5:00 AM	0	0	0	0	0	0	0	12	0	1	4	0	17
5:15 AM	0	0	0	0	0	0	0	13	0	0	2	0	15
5:30 AM	0	0	0	0	0	0	0	19	0	0	13	1	33
5:45 AM	0	0	0	0	0	0	0	20	0	0	9	1	30
6:00 AM	0	0	0	0	0	0	0	25	0	0	25	0	50
6:15 AM	0	0	0	1	0	0	0	35	0	0	34	1	71
6:30 AM	0	0	0	0	0	0	0	57	0	0	29	1	87
6:45 AM	2	0	0	0	0	0	0	72	1	0	41	2	118
7:00 AM	2	0	0	1	0	0	2	58	0	0	52	2	117
7:15 AM	0	0	0	2	0	0	0	100	1	0	59	2	164
7:30 AM	1	0	0	3	0	0	2	122	0	0	91	6	225
7:45 AM	2	0	0	4	0	1	3	140	0	1	105	2	258
8:00 AM	0	0	2	3	0	3	2	157	1	1	121	7	297
8:15 AM	0	0	1	2	0	0	1	144	2	0	110	10	270
8:30 AM	1	0	1	3	0	1	5	162	2	1	138	8	322
8:45 AM	1	0	4	4	0	5	4	166	1	0	137	6	328
9:00 AM	1	0	1	2	0	3	4	139	0	1	170	12	333
9:15 AM	4	0	1	5	0	2	7	216	2	1	146	5	389
9:30 AM	3	0	2	4	0	11	10	222	2	1	199	17	471
9:45 AM	3	0	5	0	0	8	11	219	3	0	225	16	491
10:00 AM	1	0	0	2	0	9	9	267	2	1	229	10	530
10:15 AM	0	0	0	6	1	6	10	263	2	3	208	10	509
10:30 AM	2	0	2	4	0	10	7	262	1	2	222	12	524
10:45 AM	5	0	1	3	0	11	13	258	1	0	207	15	514
11:00 AM	1	0	1	9	0	9	11	239	1	0	213	15	499
11:15 AM	3	0	1	3	0	13	14	222	2	0	212	12	482
11:30 AM	2	0	1	6	0	9	12	248	3	0	217	7	505
11:45 AM	3	1	0	2	2	7	12	276	3	0	238	17	561
12:00 PM	3	0	0	6	0	6	16	234	2	1	251	14	533
12:15 PM	1	0	0	3	0	9	17	289	3	0	261	11	594
12:30 PM	1	0	2	5	0	16	8	296	5	1	268	24	626
12:45 PM	1	0	2	10	0	7	13	244	6	3	204	17	507
1:00 PM	1	0	0	4	0	15	11	249	2	2	254	24	573
1:15 PM	1	0	0	5	0	13	16	291	3	1	246	12	588
1:30 PM	3	0	0	9	0	10	15	264	0	0	262	18	581
1:45 PM	2	0	0	6	0	7	7	287	4	1	228	15	557
2:00 PM	0	0	2	7	0	10	11	261	3	0	246	17	557
2:15 PM	3	0	0	7	1	7	11	254	3	0	208	15	509
2:30 PM	1	0	0	4	0	12	16	286	4	0	264	18	605
2:45 PM	1	0	0	2	8	0	14	274	0	0	273	19	608
3:00 PM	0	0	1	5	0	13	11	272	5	2	266	22	597
3:15 PM	1	0	0	6	0	10	12	258	4	2	264	20	577
3:30 PM	6	0	0	9	0	15	13	244	5	0	252	18	562
3:45 PM	0	0	3	5	0	17	14	246	1	1	254	15	556
4:00 PM	1	0	0	7	0	15	20	266	4	0	277	20	610
4:15 PM	0	1	2	10	0	7	17	220	6	2	250	16	531
4:30 PM	0	0	0	10	0	8	14	267	3	3	219	17	541
4:45 PM	1	0	1	8	0	12	18	238	5	1	220	11	515
5:00 PM	0	2	3	4	0	12	12	236	4	1	220	23	517
5:15 PM	0	1	2	3	0	9	16	218	2	1	245	20	517
5:30 PM	2	0	0	5	0	15	25	247	0	0	234	23	553
5:45 PM	1	0	0	10	0	17	20	228	0	2	224	22	524
6:00 PM	0	0	0	9	0	13	21	197	1	3	276	21	541
6:15 PM	1	0	0	7	0	25	18	187	2	1	237	11	489
6:30 PM	0	0	0	9	0	18	13	176	2	0	181	20	419
6:45 PM	2	2	0	4	0	8	11	123	2	0	139	13	304
7:00 PM	1	0	1	7	0	13	8	125	1	0	164	13	333
7:15 PM	2	2	0	5	0	8	16	108	1	0	140	6	288
7:30 PM	0	0	0	4	0	6	6	108	1	0	113	9	247
7:45 PM	1	0	1	9	0	9	6	96	2	0	118	6	248
8:00 PM	1	0	0	8	0	4	4	95	2	0	115	7	236
8:15 PM	1	1	0	4	0	4	6	90	2	0	98	12	218
8:30 PM	0	0	0	6	0	5	9	57	1	0	101	8	187
8:45 PM	1	0	0	10	2	5	5	53	1	0	94	2	173
9:00 PM	1	0	1	3	0	5	1	62	2	0	87	0	162
9:15 PM	1	0	0	1	0	8	2	52	2	0	92	1	159
9:30 PM	0	0	0	1	0	3	0	43	0	0	79	0	126
9:45 PM	1	0	0	0	0	0	0	57	1	0	70	1	130
10:00 PM	0	0	0	0	0	1	1	40	0	0	55	0	97
10:15 PM	0	0	0	0	0	1	0	26	0	0	54	0	81
10:30 PM	0	0	0	0	0	1	0	22	0	0	48	0	71
10:45 PM	0	0	0	0	0	0	0	27	0	0	44	0	71
11:00 PM	0	0	0	0	0	0	0	27	0	1	41	0	69
11:15 PM	0	0	0	0	0	0	1	26	0	0	32	0	59
11:30 PM	0	0	0	0	0	0	0	16	0	0	17	0	33
11:45 PM	0	0	0	0	0	1	0	4	0	0	15	0	20

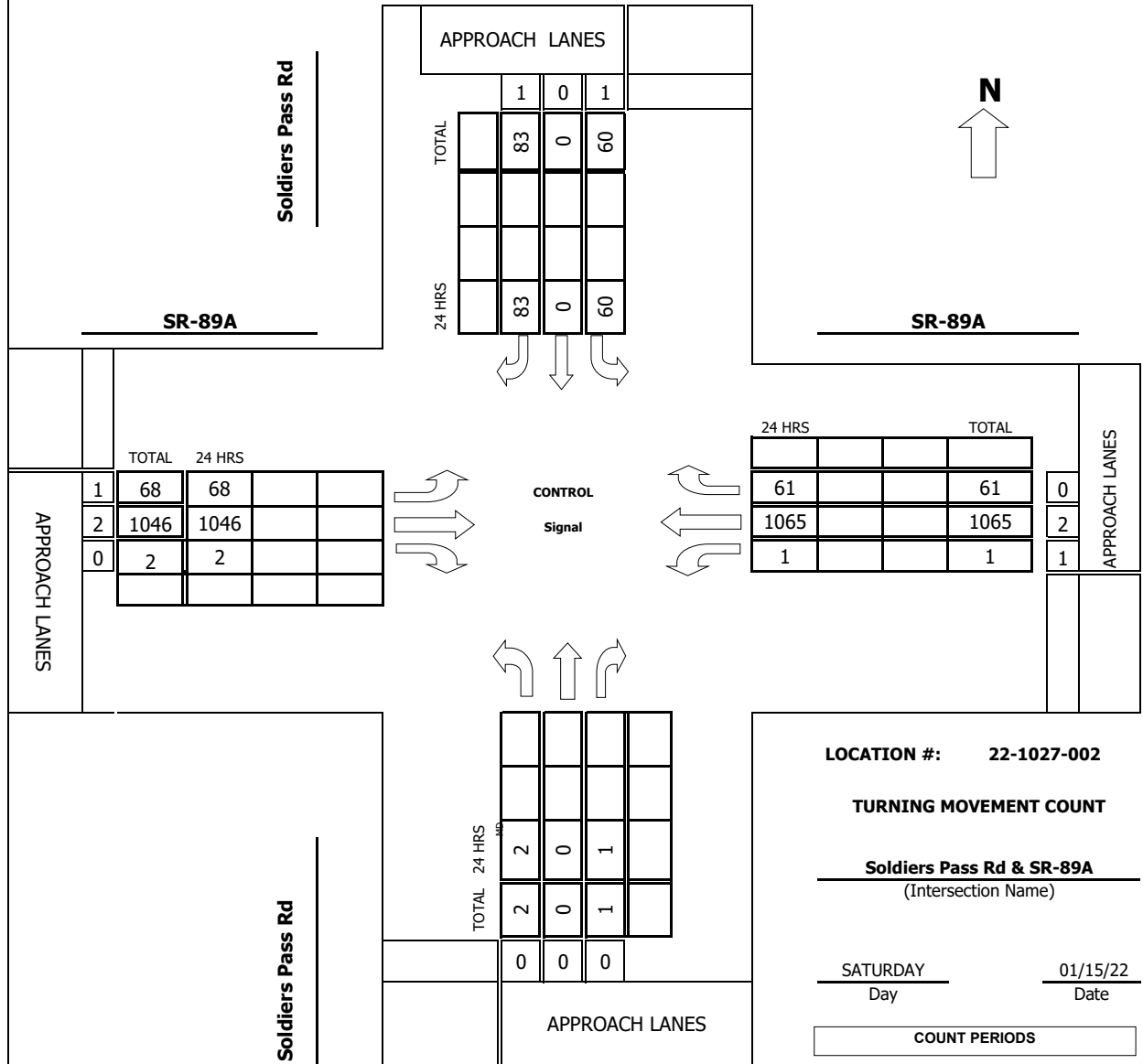
TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	81	10	42	328	6	524	617	12188	130	42	11881	759	26608
Approach %	60.90	7.52	31.58	38.23	0.70	61.07	4.77	94.22	1.01	0.33	93.68	5.98	
App/Depart	133	/	1386	858	/	178	12935	/	12558	12682	/	12486	

AM Peak Hr Begins at: 230 PM

PEAK	Volumes	Approach %	FACTOR:
PEAK	3	0	3
Volumes	23	0	49
Approach %	50.00	0.00	50.00
FACTOR:	0.500	0.818	0.947
</			

**Project #:** 22-1027-002

**TMC SUMMARY OF Soldiers Pass Rd & SR-89A**



**LOCATION #:** 22-1027-002

**TURNING MOVEMENT COUNT**

**Soldiers Pass Rd & SR-89A**  
 (Intersection Name)

**SATURDAY** 01/15/22  
 Day Date

COUNT PERIODS		
<b>AM</b>	1200AM	- 1200AM
<b>NOON</b>	-	-
<b>PM</b>	-	-

AM PEAK HOUR 230 PM  
 NOON PEAK HOUR \_\_\_\_\_  
 PM PEAK HOUR \_\_\_\_\_

**Intersection Turning Movement**  
Prepared by:



N-S STREET: **Soldiers Pass Rd**      DATE: **01/15/22**      LOCATION: **Sedona**  
 E-W STREET: **SR-89A**      DAY: **SATURDAY**      PROJECT#: **22-1027-002**

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
12:00 AM	0	0	0	0	0	1	1	4	0	0	14	0	27
12:15 AM	0	0	0	0	0	1	0	8	0	0	18	0	20
12:30 AM	0	0	0	0	0	0	0	8	0	0	16	0	24
12:45 AM	0	0	0	0	0	0	0	4	0	0	9	0	13
1:00 AM	0	0	0	0	0	0	0	4	0	0	13	0	17
1:15 AM	0	0	0	0	0	0	0	3	0	0	8	1	12
1:30 AM	0	0	0	1	0	1	0	1	0	0	3	0	6
1:45 AM	0	0	0	0	0	0	0	5	0	0	4	0	9
2:00 AM	0	0	0	0	0	0	0	3	0	0	4	0	7
2:15 AM	0	0	0	0	0	0	0	3	0	0	5	0	8
2:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
2:45 AM	0	0	0	0	0	0	0	2	0	0	5	0	7
3:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:15 AM	0	0	0	0	0	0	1	1	0	0	5	0	7
3:30 AM	0	0	0	0	0	0	0	3	0	0	3	0	6
3:45 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
4:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 AM	0	0	0	0	0	0	0	5	0	0	3	0	8
4:30 AM	0	0	0	0	0	0	0	6	0	0	5	0	11
4:45 AM	0	0	0	0	0	0	0	2	0	0	5	0	7
5:00 AM	0	0	0	0	0	0	1	11	0	0	4	0	17
5:15 AM	0	0	0	0	0	0	3	10	0	0	2	0	15
5:30 AM	0	0	0	1	0	0	0	19	0	0	14	0	34
5:45 AM	0	0	0	1	0	0	0	20	0	0	10	0	31
6:00 AM	0	0	0	2	0	0	0	25	0	0	25	1	53
6:15 AM	0	0	0	1	0	0	1	35	0	0	35	1	73
6:30 AM	0	0	0	0	0	2	5	52	0	0	28	2	89
6:45 AM	0	0	0	0	0	2	0	72	0	0	41	3	118
7:00 AM	0	0	0	0	0	3	4	55	0	0	51	2	115
7:15 AM	0	0	0	3	0	6	6	96	0	0	55	2	168
7:30 AM	0	0	0	1	0	5	19	106	0	0	92	9	232
7:45 AM	0	0	0	3	0	8	14	130	0	0	100	4	259
8:00 AM	0	0	0	5	0	10	4	158	0	0	119	3	299
8:15 AM	0	0	0	1	0	4	8	138	1	0	116	5	273
8:30 AM	0	0	0	5	0	7	14	152	0	0	140	11	329
8:45 AM	0	0	0	10	0	11	11	163	0	0	132	14	341
9:00 AM	0	0	0	10	0	8	13	129	0	0	175	18	353
9:15 AM	0	0	0	8	0	21	14	208	0	1	131	9	392
9:30 AM	1	0	0	13	0	14	14	213	1	0	202	14	472
9:45 AM	0	0	0	17	0	13	12	213	0	0	228	9	461
10:00 AM	0	0	0	6	0	21	17	252	0	0	219	16	531
10:15 AM	0	0	0	20	0	13	25	244	0	0	208	11	521
10:30 AM	0	0	1	15	0	15	14	254	0	1	221	15	536
10:45 AM	0	1	0	17	0	24	20	241	1	0	198	9	511
11:00 AM	0	0	0	8	0	17	18	231	0	0	211	19	504
11:15 AM	0	0	0	7	0	15	17	209	0	1	209	18	476
11:30 AM	0	0	0	15	0	12	24	231	0	0	212	18	512
11:45 AM	1	0	0	19	0	21	38	239	1	0	233	14	566
12:00 PM	0	0	0	11	0	18	11	229	0	0	248	14	531
12:15 PM	0	0	0	16	0	24	14	278	0	0	248	11	591
12:30 PM	1	0	1	12	1	19	21	281	1	0	273	17	627
12:45 PM	0	0	1	17	0	20	49	207	0	1	204	10	509
1:00 PM	0	0	0	12	0	22	22	242	0	0	258	12	569
1:15 PM	1	0	0	21	0	23	13	282	1	0	235	10	586
1:30 PM	0	0	0	8	0	20	16	257	0	0	260	15	576
1:45 PM	0	0	0	17	0	18	20	273	0	0	226	8	562
2:00 PM	0	0	0	13	0	22	11	259	0	0	241	6	552
2:15 PM	0	0	0	14	0	13	22	239	0	0	210	9	507
2:30 PM	2	0	0	14	0	18	23	265	2	0	262	16	602
2:45 PM	0	0	1	17	0	24	19	265	0	1	268	18	613
3:00 PM	0	0	0	16	0	15	15	263	0	0	275	14	598
3:15 PM	0	0	0	13	0	26	11	253	0	0	260	13	576
3:30 PM	0	0	0	12	0	18	9	243	1	0	252	7	542
3:45 PM	1	0	0	12	0	15	24	230	0	1	254	9	546
4:00 PM	0	0	0	9	0	16	17	256	0	0	281	10	589
4:15 PM	0	0	0	13	0	17	14	218	0	0	251	13	526
4:30 PM	0	0	0	16	0	26	34	243	0	0	213	14	546
4:45 PM	0	0	0	10	0	9	24	223	0	0	223	19	508
5:00 PM	0	0	0	10	0	15	12	231	0	0	229	11	508
5:15 PM	0	0	0	11	0	8	12	211	0	0	258	6	506
5:30 PM	0	0	2	11	0	11	14	237	1	1	246	6	529
5:45 PM	0	0	0	11	0	16	16	222	0	0	232	5	502
6:00 PM	0	0	0	19	0	23	8	198	0	0	277	3	528
6:15 PM	0	0	1	27	0	34	5	189	0	1	215	6	478
6:30 PM	0	0	0	5	0	14	8	177	0	0	187	4	395
6:45 PM	0	0	0	4	0	7	10	117	0	0	145	7	290
7:00 PM	0	0	0	4	0	5	10	123	0	0	172	4	318
7:15 PM	0	0	0	3	0	3	4	109	0	0	143	3	265
7:30 PM	0	0	0	4	0	2	4	107	1	0	120	1	239
7:45 PM	1	0	0	3	0	4	6	100	0	0	119	3	236
8:00 PM	0	0	0	1	0	6	6	97	0	0	116	0	226
8:15 PM	0	0	0	3	0	4	4	90	0	0	106	3	210
8:30 PM	0	0	0	2	0	3	2	60	1	0	106	3	177
8:45 PM	0	0	0	10	0	5	3	60	0	0	91	3	172
9:00 PM	0	0	0	1	0	3	4	62	0	0	84	0	154
9:15 PM	0	0	0	3	0	2	0	53	0	0	91	3	152
9:30 PM	0	0	0	2	0	5	0	44	0	0	74	1	126
9:45 PM	0	0	0	0	0	3	2	55	0	0	68	1	129
10:00 PM	0	0	0	1	0	1	2	38	0	0	54	1	97
10:15 PM	0	0	0	1	0	2	0	26	0	0	52	0	81
10:30 PM	0	0	0	0	0	0	0	22	0	0	48	1	71
10:45 PM	0	0	0	0	0	3	1	26	0	0	41	0	71
11:00 PM	0	0	0	0	0	3	1	26	0	0	39	0	69
11:15 PM	0	0	0	1	0	4	0	26	0	0	28	6	65
11:30 PM	0	0	0	5	0	2	1	15	0	0	15	3	41
11:45 PM	0	0	0	2	0	2	0	4	0	0	13	4	25

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	8	1	7	606	1	829	842	11704	12	8	11845	561	26424
Approach %	50.00	6.25	43.75	42.20	0.07	57.73	6.70	93.20	0.10	0.06	95.42	4.52	
App/Depart	16	/	1404	1436	/	21	12558	/	12317	12414	/	12682	

AM Peak Hr Begins at: 230 PM

PEAK	Volumes	Approach %	FACTOR:
PEAK	2	0	0.375
Volumes	60	0	0.872
Approach %	83	0.00	0.962
FACTOR:	68	1046	0.975
	6.09	93.73	0.974
	0.18	0.09	
	1	1065	
	61	94.50	
	5.41		

CONTROL: **Signal**  
 COMMENT 1:  
 GPS: **34.862632, -111.783233**



**SADDLE ROCK CROSSING  
SOLDIERS PASS ROAD/STATE ROUTE 89A  
TRAFFIC IMPACT ANALYSIS**

**APPENDIX**

**Trip Generation Calculations**



## Multifamily Housing (Low-Rise) Not Close to Rail Transit (LUC 220)

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF  
TRANSPORTATION ENGINEERS' TRIP GENERATION, 11TH EDITION.

THE ITE LAND USE CODE IS

Multifamily Housing (Low-Rise) Not Close to Rail Transit (220), General Urban/Suburban

### Weekday

Fitted Curve  $T=6.41(X) + 75.31$

Where X = 40 Dwelling Units

**T = 332 VTPD**

ENTER:  $(0.5)*(332) = 166$  VTPD

EXIT:  $(0.5)*(332) = 166$  VTPD

### AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Fitted Curve  $T=0.31(X) + 22.85$

Where X = 40 Dwelling Units

**T = 35 VPH**

ENTER:  $(0.24)*(35.25) = 8$  VPH

EXIT:  $(0.76)*(35.25) = 27$  VPH

### PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Fitted Curve  $T=0.43(X) + 20.55$

Where X = 40 Dwelling Units

**T = 38 VPH**

ENTER:  $(0.63)*(37.75) = 25$  VPH

EXIT:  $(0.37)*(37.75) = 13$  VPH

\*where, T = trip ends

### TRIP GENERATION SUMMARY

WEEKDAY

332 VTPD

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

35 VPH

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

38 VPH

# Hotel

LAND USE: 114-Room Hotel

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 11TH EDITION. THE ITE LAND USE CODE IS Hotel (310), General Urban/Suburban

## Weekday

Fitted Curve  $T=10.84(X) - 423.51$   
Where X = 114 Rooms

$$T = 814 \text{ VTPD}$$

$$\text{ENTER: } (0.5) * (814) = 407 \text{ VTPD}$$

$$\text{EXIT: } (0.5) * (814) = 407 \text{ VTPD}$$

## AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Fitted Curve  $T=0.50(X) - 7.45$   
Where X = 114 Rooms

$$T = 50 \text{ VPH}$$

$$\text{ENTER: } (0.56) * (50) = 28 \text{ VPH}$$

$$\text{EXIT: } (0.44) * (50) = 22 \text{ VPH}$$

## PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Fitted Curve  $T=0.74(X) - 27.89$   
Where X = 114 Rooms

$$T = 58 \text{ VPH}$$

$$\text{ENTER: } (0.51) * (58) = 30 \text{ VPH}$$

$$\text{EXIT: } (0.49) * (58) = 28 \text{ VPH}$$

\*where, T = trip ends

## TRIP GENERATION SUMMARY

### WEEKDAY

814 VTPD

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

50 VPH

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

58 VPH

# All Suite Hotel

LAND USE: 8 Rooms All Suite Hotel

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 11TH EDITION. THE ITE LAND USE CODE IS All Suite Hotel (311)

## WEEKDAY

Average Rate = 4.4 Trips per Room (R)

$$T = 4.4 \text{ Trips} \times 8 \text{ R}$$

$$T = \quad \quad \quad \mathbf{36 \text{ VTPD}}$$

$$\text{ENTER: } (0.5) \times (36) = \quad \quad \quad \mathbf{18 \text{ VTPD}}$$

$$\text{EXIT: } (0.5) \times (36) = \quad \quad \quad \mathbf{18 \text{ VTPD}}$$

## AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 0.34 Trips per Room (R)

$$T = 0.34 \text{ Trips} \times 8 \text{ R}$$

$$T = \quad \quad \quad \mathbf{3 \text{ VPH}}$$

$$\text{ENTER: } (0.53) \times (3) = \quad \quad \quad \mathbf{2 \text{ VPH}}$$

$$\text{EXIT: } (0.47) \times (3) = \quad \quad \quad \mathbf{1 \text{ VPH}}$$

## PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 0.36 Trips per Room (R)

$$T = 0.36 \text{ Trips} \times 8 \text{ R}$$

$$T = \quad \quad \quad \mathbf{3 \text{ VPH}}$$

$$\text{ENTER: } (0.49) \times (3) = \quad \quad \quad \mathbf{1 \text{ VPH}}$$

$$\text{EXIT: } (0.51) \times (3) = \quad \quad \quad \mathbf{2 \text{ VPH}}$$

\*where, T = trip ends

## TRIP GENERATION SUMMARY

### WEEKDAY

**36 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

**3 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

**3 VPH**

# Drinking Place

LAND USE: 985 Square Feet Drinking Place

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS Drinking Place (975)

## WEEKDAY

Average Rate = 0 Trips per 1000 Square Feet (sqft)

$$T = 0 \text{ Trips} \times 985 \text{ sqft} / 1000$$

$$T = \quad \quad \quad \mathbf{0 \text{ VTPD}}$$

$$\text{ENTER: } (0.5) \times (0) = \quad \quad \quad \mathbf{0 \text{ VTPD}}$$

$$\text{EXIT: } (0.5) \times (0) = \quad \quad \quad \mathbf{0 \text{ VTPD}}$$

## AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 0 Trips per 1000 Square Feet (sqft)

$$T = 0 \text{ Trips} \times 985 \text{ sqft} / 1000$$

$$T = \quad \quad \quad \mathbf{0 \text{ VPH}}$$

$$\text{ENTER: } (0.5) \times (0) = \quad \quad \quad \mathbf{0 \text{ VPH}}$$

$$\text{EXIT: } (0.5) \times (0) = \quad \quad \quad \mathbf{0 \text{ VPH}}$$

## PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 11.36 Trips per 1000 Square Feet (sqft)

$$T = 11.36 \text{ Trips} \times 985 \text{ sqft} / 1000$$

$$T = \quad \quad \quad \mathbf{12 \text{ VPH}}$$

$$\text{ENTER: } (0.66) \times (12) = \quad \quad \quad \mathbf{8 \text{ VPH}}$$

$$\text{EXIT: } (0.34) \times (12) = \quad \quad \quad \mathbf{4 \text{ VPH}}$$

\*where, T = trip ends

## TRIP GENERATION SUMMARY

### WEEKDAY

**0 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

**0 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

**12 VPH**

# High-Turnover (Sit-Down) Restaurant

LAND USE: 3,000 Square Feet High-Turnover (Sit-Down) Restaurant

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 11TH EDITION. THE ITE LAND USE CODE IS High-Turnover (Sit-Down) Restaurant (932)

## WEEKDAY

Average Rate = 107.2 Trips per 1000 Square Feet (sqft)

$$T = 107.2 \text{ Trips} \times 3000 \text{ sqft} / 1000$$

$$T = \mathbf{322 \text{ VTPD}}$$

$$\text{ENTER: } (0.5) \times (322) = \mathbf{161 \text{ VTPD}}$$

$$\text{EXIT: } (0.5) \times (322) = \mathbf{161 \text{ VTPD}}$$

## AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 9.57 Trips per 1000 Square Feet (sqft)

$$T = 9.57 \text{ Trips} \times 3000 \text{ sqft} / 1000$$

$$T = \mathbf{29 \text{ VPH}}$$

$$\text{ENTER: } (0.55) \times (29) = \mathbf{16 \text{ VPH}}$$

$$\text{EXIT: } (0.45) \times (29) = \mathbf{13 \text{ VPH}}$$

## PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 9.05 Trips per 1000 Square Feet (sqft)

$$T = 9.05 \text{ Trips} \times 3000 \text{ sqft} / 1000$$

$$T = \mathbf{28 \text{ VPH}}$$

$$\text{ENTER: } (0.61) \times (28) = \mathbf{17 \text{ VPH}}$$

$$\text{EXIT: } (0.39) \times (28) = \mathbf{11 \text{ VPH}}$$

\*where, T = trip ends

## TRIP GENERATION SUMMARY

### WEEKDAY

**322 VTPD**

### AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

**29 VPH**

### PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

**28 VPH**



**SADDLE ROCK CROSSING  
SOLDIERS PASS ROAD/STATE ROUTE 89A  
TRAFFIC IMPACT ANALYSIS**

**APPENDIX**

**Capacity Calculations**

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	44	966	19	5	658	39	8	1	7	14	1	25
Future Vol, veh/h	44	966	19	5	658	39	8	1	7	14	1	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	100	-	-	100	-	100	-	-	-	-	-	-
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	49	1073	21	6	731	43	9	1	8	16	1	28





















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	774	0	0	1094	0	0	1560	1968	547	1378	1935	366
Stage 1	-	-	-	-	-	-	1182	1182	-	743	743	-
Stage 2	-	-	-	-	-	-	378	786	-	635	1192	-
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	837	-	-	634	-	-	76	62	481	104	65	631
Stage 1	-	-	-	-	-	-	201	262	-	373	420	-
Stage 2	-	-	-	-	-	-	616	401	-	433	259	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	837	-	-	634	-	-	68	58	481	96	61	631
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	58	-	96	61	-
Stage 1	-	-	-	-	-	-	189	247	-	351	416	-
Stage 2	-	-	-	-	-	-	582	397	-	399	244	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			45.2			28.4		
HCM LOS							E			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	837	-	-	634	-	-	198
HCM Lane V/C Ratio	0.166	0.058	-	-	0.009	-	-	0.224
HCM Control Delay (s)	45.2	9.6	-	-	10.7	-	-	28.4
HCM Lane LOS	E	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.8

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	874	0	0	617	47	0	0	0	57	0	83
Future Volume (veh/h)	111	874	0	0	617	47	0	0	0	57	0	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	971	0	0	686	52	0	0	0	63	0	92
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	326	1564	0	253	991	75	117	774	0	854	0	656
Arrive On Green	0.07	0.44	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1781	3647	0	1781	3348	254	1304	1870	0	1781	0	1585
Grp Volume(v), veh/h	123	971	0	0	364	374	0	0	0	63	0	92
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1825	1304	1870	0	1781	0	1585
Q Serve(g_s), s	2.7	13.0	0.0	0.0	11.2	11.2	0.0	0.0	0.0	1.3	0.0	2.2
Cycle Q Clear(g_c), s	2.7	13.0	0.0	0.0	11.2	11.2	0.0	0.0	0.0	1.3	0.0	2.2
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	1564	0	253	526	540	117	774	0	854	0	656
V/C Ratio(X)	0.38	0.62	0.00	0.00	0.69	0.69	0.00	0.00	0.00	0.07	0.00	0.14
Avail Cap(c_a), veh/h	503	2335	0	553	1168	1199	117	774	0	854	0	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	13.3	0.0	0.0	19.2	19.2	0.0	0.0	0.0	11.0	0.0	11.2
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.6	0.0	0.0	4.4	4.6	0.0	0.0	0.0	0.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.4	13.7	0.0	0.0	20.9	20.8	0.0	0.0	0.0	11.1	0.0	11.7
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1094			738			0				155
Approach Delay, s/veh		13.8			20.8			0.0				11.5
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	31.6		30.0	8.9	22.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	15.0		4.2	4.7	13.2				
Green Ext Time (p_c), s		0.0	0.0	7.8		0.6	0.1	5.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.2								
HCM 6th LOS				B								



HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	62	1046	16	3	1044	81	8	0	1	29	0	74
Future Vol, veh/h	62	1046	16	3	1044	81	8	0	1	29	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
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	69	1162	18	3	1160	90	9	0	1	32	0	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1250	0	0	1180	0	0	1895	2565	590	1885	2484	580
Stage 1	-	-	-	-	-	-	1309	1309	-	1166	1166	-
Stage 2	-	-	-	-	-	-	586	1256	-	719	1318	-
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	553	-	-	588	-	-	42	26	451	43	29	458
Stage 1	-	-	-	-	-	-	168	227	-	206	266	-
Stage 2	-	-	-	-	-	-	463	241	-	386	225	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	553	-	-	588	-	-	31	23	451	39	25	458
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	23	-	39	25	-
Stage 1	-	-	-	-	-	-	147	199	-	180	265	-
Stage 2	-	-	-	-	-	-	378	240	-	337	197	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	144.8	156.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	35	553	-	-	588	-	-	114
HCM Lane V/C Ratio	0.286	0.125	-	-	0.006	-	-	1.004
HCM Control Delay (s)	144.8	12.4	-	-	11.2	-	-	156.9
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.9	0.4	-	-	0	-	-	6.6

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	71	985	0	0	1084	53	0	0	0	93	0	81
Future Volume (veh/h)	71	985	0	0	1084	53	0	0	0	93	0	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	1094	0	0	1204	59	0	0	0	103	0	90
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	246	1938	0	274	1492	73	95	628	0	693	0	533
Arrive On Green	0.05	0.55	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.34	0.00	0.34
Sat Flow, veh/h	1781	3647	0	1781	3448	169	1307	1870	0	1781	0	1585
Grp Volume(v), veh/h	79	1094	0	0	620	643	0	0	0	103	0	90
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1307	1870	0	1781	0	1585
Q Serve(g_s), s	1.7	15.3	0.0	0.0	23.1	23.1	0.0	0.0	0.0	3.1	0.0	3.0
Cycle Q Clear(g_c), s	1.7	15.3	0.0	0.0	23.1	23.1	0.0	0.0	0.0	3.1	0.0	3.0
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	1938	0	274	769	796	95	628	0	693	0	533
V/C Ratio(X)	0.32	0.56	0.00	0.00	0.81	0.81	0.00	0.00	0.00	0.15	0.00	0.17
Avail Cap(c_a), veh/h	398	1938	0	518	948	982	95	628	0	693	0	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	11.3	0.0	0.0	18.8	18.8	0.0	0.0	0.0	17.8	0.0	17.7
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.0	4.3	4.2	0.0	0.0	0.0	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.4	0.0	0.0	9.6	9.9	0.0	0.0	0.0	1.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	11.7	0.0	0.0	23.0	22.9	0.0	0.0	0.0	18.2	0.0	18.4
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1173			1263			0				193
Approach Delay, s/veh		11.9			23.0			0.0				18.3
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	45.9		30.0	8.6	37.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	17.3		5.1	3.7	25.1				
Green Ext Time (p_c), s		0.0	0.0	8.7		0.7	0.1	7.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.7								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕↘		↘	↕↕	↘		↕↕			↕↕	
Traffic Vol, veh/h	47	1025	20	5	698	41	8	1	7	15	1	27
Future Vol, veh/h	47	1025	20	5	698	41	8	1	7	15	1	27
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	-	-	100	-	100	-	-	-	-	-	-
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	52	1139	22	6	776	46	9	1	8	17	1	30






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	822	0	0	1161	0	0	1655	2088	581	1462	2053	388
Stage 1	-	-	-	-	-	-	1254	1254	-	788	788	-
Stage 2	-	-	-	-	-	-	401	834	-	674	1265	-
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	803	-	-	597	-	-	64	52	457	90	55	611
Stage 1	-	-	-	-	-	-	182	242	-	350	400	-
Stage 2	-	-	-	-	-	-	597	381	-	410	239	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	803	-	-	597	-	-	56	48	457	82	51	611
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	48	-	82	51	-
Stage 1	-	-	-	-	-	-	170	226	-	327	396	-
Stage 2	-	-	-	-	-	-	560	377	-	375	223	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			55.3			33.3		
HCM LOS							F			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	89	803	-	-	597	-	-	174
HCM Lane V/C Ratio	0.2	0.065	-	-	0.009	-	-	0.275
HCM Control Delay (s)	55.3	9.8	-	-	11.1	-	-	33.3
HCM Lane LOS	F	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0	-	-	1.1

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	927	0	0	655	50	0	0	0	60	0	88
Future Volume (veh/h)	118	927	0	0	655	50	0	0	0	60	0	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	131	1030	0	0	728	56	0	0	0	67	0	98
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	324	1610	0	243	1035	80	114	756	0	834	0	641
Arrive On Green	0.07	0.45	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1781	3647	0	1781	3344	257	1297	1870	0	1781	0	1585
Grp Volume(v), veh/h	131	1030	0	0	387	397	0	0	0	67	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1824	1297	1870	0	1781	0	1585
Q Serve(g_s), s	2.9	14.1	0.0	0.0	12.1	12.1	0.0	0.0	0.0	1.5	0.0	2.5
Cycle Q Clear(g_c), s	2.9	14.1	0.0	0.0	12.1	12.1	0.0	0.0	0.0	1.5	0.0	2.5
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	1610	0	243	550	565	114	756	0	834	0	641
V/C Ratio(X)	0.40	0.64	0.00	0.00	0.70	0.70	0.00	0.00	0.00	0.08	0.00	0.15
Avail Cap(c_a), veh/h	491	2281	0	537	1141	1171	114	756	0	834	0	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	13.3	0.0	0.0	19.2	19.2	0.0	0.0	0.0	11.6	0.0	11.9
Incr Delay (d2), s/veh	0.8	0.4	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.2	0.0	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	1.1	4.9	0.0	0.0	4.8	4.9	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	13.7	0.0	0.0	20.9	20.8	0.0	0.0	0.0	11.8	0.0	12.4
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1161			784			0				165
Approach Delay, s/veh		13.8			20.9			0.0				12.2
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	33.1		30.0	9.1	24.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	16.1		4.5	4.9	14.1				
Green Ext Time (p_c), s		0.0	0.0	8.2		0.7	0.1	5.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.3								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	13.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕			↕	
Traffic Vol, veh/h	66	1110	17	3	1108	86	8	0	1	31	0	79
Future Vol, veh/h	66	1110	17	3	1108	86	8	0	1	31	0	79
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	-	-	100	-	100	-	-	-	-	-	-
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	73	1233	19	3	1231	96	9	0	1	34	0	88

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1327	0	0	1252	0	0	2011	2722	626	2000	2635	616
Stage 1	-	-	-	-	-	-	1389	1389	-	1237	1237	-
Stage 2	-	-	-	-	-	-	622	1333	-	763	1398	-
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	516	-	-	552	-	-	35	20	427	35	23	433
Stage 1	-	-	-	-	-	-	150	208	-	186	246	-
Stage 2	-	-	-	-	-	-	441	221	-	363	206	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	516	-	-	552	-	-	25	17	427	~ 31	20	433
Mov Cap-2 Maneuver	-	-	-	-	-	-	25	17	-	~ 31	20	-
Stage 1	-	-	-	-	-	-	129	179	-	160	245	-
Stage 2	-	-	-	-	-	-	350	220	-	311	177	-





















Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	192.9	281.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	28	516	-	-	552	-	-	93
HCM Lane V/C Ratio	0.357	0.142	-	-	0.006	-	-	1.314
HCM Control Delay (s)	192.9	13.1	-	-	11.6	-	-	281.4
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.1	0.5	-	-	0	-	-	8.8

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

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	1045	0	0	1150	56	0	0	0	99	0	86
Future Volume (veh/h)	75	1045	0	0	1150	56	0	0	0	99	0	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	83	1161	0	0	1278	62	0	0	0	110	0	96
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	237	1983	0	261	1541	75	92	611	0	674	0	518
Arrive On Green	0.05	0.56	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.33	0.00	0.33
Sat Flow, veh/h	1781	3647	0	1781	3450	167	1300	1870	0	1781	0	1585
Grp Volume(v), veh/h	83	1161	0	0	657	683	0	0	0	110	0	96
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1300	1870	0	1781	0	1585
Q Serve(g_s), s	1.8	16.7	0.0	0.0	25.4	25.5	0.0	0.0	0.0	3.5	0.0	3.4
Cycle Q Clear(g_c), s	1.8	16.7	0.0	0.0	25.4	25.5	0.0	0.0	0.0	3.5	0.0	3.4
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1983	0	261	794	822	92	611	0	674	0	518
V/C Ratio(X)	0.35	0.59	0.00	0.00	0.83	0.83	0.00	0.00	0.00	0.16	0.00	0.19
Avail Cap(c_a), veh/h	381	1983	0	498	922	955	92	611	0	674	0	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	11.3	0.0	0.0	19.0	19.0	0.0	0.0	0.0	18.8	0.0	18.8
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	5.6	5.5	0.0	0.0	0.0	0.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.9	0.0	0.0	10.7	11.1	0.0	0.0	0.0	1.5	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	11.8	0.0	0.0	24.6	24.5	0.0	0.0	0.0	19.4	0.0	19.6
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1244			1340			0			206	
Approach Delay, s/veh		12.1			24.5			0.0			19.5	
Approach LOS		B			C						B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	48.0		30.0	8.7	39.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	18.7		5.5	3.8	27.5				
Green Ext Time (p_c), s		0.0	0.0	9.1		0.8	0.1	7.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.6								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	32	796	7	3	740	50	11	0	5	16	0	24
Future Vol, veh/h	32	796	7	3	740	50	11	0	5	16	0	24
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	-	-	100	-	100	-	-	-	-	-	-
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	36	884	8	3	822	56	12	0	6	18	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	878	0	0	892	0	0	1377	1844	446	1342	1792	411
Stage 1	-	-	-	-	-	-	960	960	-	828	828	-
Stage 2	-	-	-	-	-	-	417	884	-	514	964	-
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	765	-	-	756	-	-	104	74	560	110	80	590
Stage 1	-	-	-	-	-	-	276	333	-	332	384	-
Stage 2	-	-	-	-	-	-	584	362	-	511	332	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	765	-	-	756	-	-	95	70	560	105	76	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	95	70	-	105	76	-
Stage 1	-	-	-	-	-	-	263	317	-	316	382	-
Stage 2	-	-	-	-	-	-	555	361	-	482	316	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0			37.6			27.1		
HCM LOS							E			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	128	765	-	-	756	-	-	207
HCM Lane V/C Ratio	0.139	0.046	-	-	0.004	-	-	0.215
HCM Control Delay (s)	37.6	9.9	-	-	9.8	-	-	27.1
HCM Lane LOS	E	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.8

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	53	763	0	0	736	49	0	0	0	48	0	56
Future Volume (veh/h)	53	763	0	0	736	49	0	0	0	48	0	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	848	0	0	818	54	0	0	0	53	0	62
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	284	1632	0	304	1143	75	113	748	0	825	0	634
Arrive On Green	0.05	0.46	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1781	3647	0	1781	3384	223	1340	1870	0	1781	0	1585
Grp Volume(v), veh/h	59	848	0	0	430	442	0	0	0	53	0	62
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1830	1340	1870	0	1781	0	1585
Q Serve(g_s), s	1.3	10.8	0.0	0.0	13.5	13.5	0.0	0.0	0.0	1.2	0.0	1.6
Cycle Q Clear(g_c), s	1.3	10.8	0.0	0.0	13.5	13.5	0.0	0.0	0.0	1.2	0.0	1.6
Prop In Lane	1.00		0.00	1.00		0.12	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	1632	0	304	600	618	113	748	0	825	0	634
V/C Ratio(X)	0.21	0.52	0.00	0.00	0.72	0.72	0.00	0.00	0.00	0.06	0.00	0.10
Avail Cap(c_a), veh/h	487	2256	0	594	1128	1162	113	748	0	825	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	12.3	0.0	0.0	18.4	18.4	0.0	0.0	0.0	11.8	0.0	12.0
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.8	0.0	0.0	5.3	5.4	0.0	0.0	0.0	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	12.5	0.0	0.0	20.1	20.0	0.0	0.0	0.0	12.0	0.0	12.3
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		907			872			0				115
Approach Delay, s/veh		12.6			20.0			0.0				12.1
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	33.8		30.0	7.7	26.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	12.8		3.6	3.3	15.5				
Green Ext Time (p_c), s		0.0	0.0	6.7		0.4	0.1	6.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.0								
HCM 6th LOS				B								



HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗	↵		↕↗			↕↗	
Traffic Vol, veh/h	69	991	18	6	966	64	2	1	3	35	0	42
Future Vol, veh/h	69	991	18	6	966	64	2	1	3	35	0	42
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	-	-	100	-	100	-	-	-	-	-	-
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	77	1101	20	7	1073	71	2	1	3	39	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1144	0	0	1121	0	0	1816	2423	561	1792	2362	537
Stage 1	-	-	-	-	-	-	1265	1265	-	1087	1087	-
Stage 2	-	-	-	-	-	-	551	1158	-	705	1275	-
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	606	-	-	619	-	-	49	32	471	51	35	488
Stage 1	-	-	-	-	-	-	179	239	-	231	290	-
Stage 2	-	-	-	-	-	-	486	269	-	393	236	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	606	-	-	619	-	-	40	28	471	44	30	488
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	28	-	44	30	-
Stage 1	-	-	-	-	-	-	156	209	-	202	287	-
Stage 2	-	-	-	-	-	-	435	266	-	339	206	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			66.6			178		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	65	606	-	-	619	-	-	87
HCM Lane V/C Ratio	0.103	0.127	-	-	0.011	-	-	0.983
HCM Control Delay (s)	66.6	11.8	-	-	10.9	-	-	178
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0	-	-	5.6

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	89	940	0	0	968	56	0	0	0	48	0	68
Future Volume (veh/h)	89	940	0	0	968	56	0	0	0	48	0	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	1044	0	0	1076	62	0	0	0	53	0	76
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	270	1870	0	279	1384	80	99	655	0	722	0	555
Arrive On Green	0.06	0.53	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.35	0.00	0.35
Sat Flow, veh/h	1781	3647	0	1781	3415	197	1323	1870	0	1781	0	1585
Grp Volume(v), veh/h	99	1044	0	0	560	578	0	0	0	53	0	76
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1835	1323	1870	0	1781	0	1585
Q Serve(g_s), s	2.2	14.4	0.0	0.0	19.9	19.9	0.0	0.0	0.0	1.5	0.0	2.4
Cycle Q Clear(g_c), s	2.2	14.4	0.0	0.0	19.9	19.9	0.0	0.0	0.0	1.5	0.0	2.4
Prop In Lane	1.00		0.00	1.00		0.11	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	1870	0	279	720	743	99	655	0	722	0	555
V/C Ratio(X)	0.37	0.56	0.00	0.00	0.78	0.78	0.00	0.00	0.00	0.07	0.00	0.14
Avail Cap(c_a), veh/h	421	1976	0	534	988	1020	99	655	0	722	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	11.6	0.0	0.0	18.8	18.8	0.0	0.0	0.0	15.9	0.0	16.2
Incr Delay (d2), s/veh	0.8	0.3	0.0	0.0	2.7	2.6	0.0	0.0	0.0	0.2	0.0	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	0.8	5.0	0.0	0.0	8.0	8.3	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	11.9	0.0	0.0	21.5	21.5	0.0	0.0	0.0	16.1	0.0	16.7
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1143			1138			0			129	
Approach Delay, s/veh		12.1			21.5			0.0			16.4	
Approach LOS		B			C						B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	42.8		30.0	8.8	34.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	16.4		4.4	4.2	21.9				
Green Ext Time (p_c), s		0.0	0.0	8.3		0.5	0.1	7.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.8								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	48	1046	21	5	712	42	9	1	8	15	1	27
Future Vol, veh/h	48	1046	21	5	712	42	9	1	8	15	1	27
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	-	-	100	-	100	-	-	-	-	-	-
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	53	1162	23	6	791	47	10	1	9	17	1	30






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	838	0	0	1185	0	0	1688	2130	593	1491	2094	396
Stage 1	-	-	-	-	-	-	1280	1280	-	803	803	-
Stage 2	-	-	-	-	-	-	408	850	-	688	1291	-
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	792	-	-	585	-	-	61	49	449	86	52	603
Stage 1	-	-	-	-	-	-	175	235	-	343	394	-
Stage 2	-	-	-	-	-	-	591	375	-	403	232	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	792	-	-	585	-	-	54	45	449	78	48	603
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	45	-	78	48	-
Stage 1	-	-	-	-	-	-	163	219	-	320	390	-
Stage 2	-	-	-	-	-	-	554	371	-	367	216	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			58.3			35		
HCM LOS							F			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	87	792	-	-	585	-	-	167
HCM Lane V/C Ratio	0.23	0.067	-	-	0.009	-	-	0.286
HCM Control Delay (s)	58.3	9.9	-	-	11.2	-	-	35
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0	-	-	1.1

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	946	0	0	668	51	0	0	0	62	0	90
Future Volume (veh/h)	120	946	0	0	668	51	0	0	0	62	0	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	1051	0	0	742	57	0	0	0	69	0	100
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	323	1626	0	239	1049	81	113	750	0	827	0	636
Arrive On Green	0.07	0.46	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1781	3647	0	1781	3344	257	1295	1870	0	1781	0	1585
Grp Volume(v), veh/h	133	1051	0	0	394	405	0	0	0	69	0	100
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1824	1295	1870	0	1781	0	1585
Q Serve(g_s), s	3.0	14.5	0.0	0.0	12.4	12.4	0.0	0.0	0.0	1.5	0.0	2.6
Cycle Q Clear(g_c), s	3.0	14.5	0.0	0.0	12.4	12.4	0.0	0.0	0.0	1.5	0.0	2.6
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	1626	0	239	558	572	113	750	0	827	0	636
V/C Ratio(X)	0.41	0.65	0.00	0.00	0.71	0.71	0.00	0.00	0.00	0.08	0.00	0.16
Avail Cap(c_a), veh/h	488	2263	0	531	1132	1162	113	750	0	827	0	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	13.3	0.0	0.0	19.2	19.2	0.0	0.0	0.0	11.9	0.0	12.2
Incr Delay (d2), s/veh	0.8	0.4	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.2	0.0	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	1.1	5.1	0.0	0.0	4.9	5.1	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	13.7	0.0	0.0	20.9	20.9	0.0	0.0	0.0	12.1	0.0	12.7
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1184			799			0				169
Approach Delay, s/veh		13.8			20.9			0.0				12.4
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	33.6		30.0	9.1	24.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	16.5		4.6	5.0	14.4				
Green Ext Time (p_c), s		0.0	0.0	8.4		0.7	0.1	5.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.3								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	15.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗		↕			↕	
Traffic Vol, veh/h	67	1132	17	3	1130	88	9	0	1	31	0	80
Future Vol, veh/h	67	1132	17	3	1130	88	9	0	1	31	0	80
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	-	-	100	-	100	-	-	-	-	-	-
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	74	1258	19	3	1256	98	10	0	1	34	0	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1354	0	0	1277	0	0	2050	2776	639	2039	2687	628
Stage 1	-	-	-	-	-	-	1416	1416	-	1262	1262	-
Stage 2	-	-	-	-	-	-	634	1360	-	777	1425	-
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	504	-	-	540	-	-	32	19	419	~ 33	21	426
Stage 1	-	-	-	-	-	-	144	202	-	180	239	-
Stage 2	-	-	-	-	-	-	434	215	-	356	200	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	504	-	-	540	-	-	22	16	419	~ 29	18	426
Mov Cap-2 Maneuver	-	-	-	-	-	-	22	16	-	~ 29	18	-
Stage 1	-	-	-	-	-	-	123	172	-	154	238	-
Stage 2	-	-	-	-	-	-	342	214	-	303	171	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	248.3	\$ 320.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	24	504	-	-	540	-	-	88
HCM Lane V/C Ratio	0.463	0.148	-	-	0.006	-	-	1.402
HCM Control Delay (s)	248.3	13.4	-	-	11.7	-	-	\$ 320.5
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.4	0.5	-	-	0	-	-	9.4

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

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	77	1066	0	0	1173	57	0	0	0	101	0	88
Future Volume (veh/h)	77	1066	0	0	1173	57	0	0	0	101	0	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	1184	0	0	1303	63	0	0	0	112	0	98
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	234	1997	0	256	1556	75	91	606	0	668	0	513
Arrive On Green	0.05	0.56	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.32	0.00	0.32
Sat Flow, veh/h	1781	3647	0	1781	3451	167	1297	1870	0	1781	0	1585
Grp Volume(v), veh/h	86	1184	0	0	670	696	0	0	0	112	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1297	1870	0	1781	0	1585
Q Serve(g_s), s	1.9	17.2	0.0	0.0	26.2	26.3	0.0	0.0	0.0	3.6	0.0	3.5
Cycle Q Clear(g_c), s	1.9	17.2	0.0	0.0	26.2	26.3	0.0	0.0	0.0	3.6	0.0	3.5
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	1997	0	256	801	830	91	606	0	668	0	513
V/C Ratio(X)	0.37	0.59	0.00	0.00	0.84	0.84	0.00	0.00	0.00	0.17	0.00	0.19
Avail Cap(c_a), veh/h	376	1997	0	491	914	946	91	606	0	668	0	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	11.3	0.0	0.0	19.1	19.1	0.0	0.0	0.0	19.2	0.0	19.2
Incr Delay (d2), s/veh	1.0	0.5	0.0	0.0	6.2	6.1	0.0	0.0	0.0	0.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.1	0.0	0.0	11.2	11.6	0.0	0.0	0.0	1.5	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	11.8	0.0	0.0	25.2	25.2	0.0	0.0	0.0	19.8	0.0	20.0
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	C
Approach Vol, veh/h		1270			1366			0			210	
Approach Delay, s/veh		12.1			25.2			0.0			19.9	
Approach LOS		B			C						B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	48.7		30.0	8.7	40.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	19.2		5.6	3.9	28.3				
Green Ext Time (p_c), s		0.0	0.0	9.2		0.8	0.1	7.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	33	812	7	3	755	51	11	0	5	16	0	24
Future Vol, veh/h	33	812	7	3	755	51	11	0	5	16	0	24
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	-	-	100	-	100	-	-	-	-	-	-
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	37	902	8	3	839	57	12	0	6	18	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	896	0	0	910	0	0	1406	1882	455	1370	1829	420
Stage 1	-	-	-	-	-	-	980	980	-	845	845	-
Stage 2	-	-	-	-	-	-	426	902	-	525	984	-
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	753	-	-	744	-	-	99	70	552	105	76	582
Stage 1	-	-	-	-	-	-	268	326	-	324	377	-
Stage 2	-	-	-	-	-	-	577	355	-	504	325	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	753	-	-	744	-	-	91	66	552	100	72	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	66	-	100	72	-
Stage 1	-	-	-	-	-	-	255	310	-	308	375	-
Stage 2	-	-	-	-	-	-	548	354	-	474	309	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0			39.2			28.2		
HCM LOS							E			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	753	-	-	744	-	-	199
HCM Lane V/C Ratio	0.145	0.049	-	-	0.004	-	-	0.223
HCM Control Delay (s)	39.2	10	-	-	9.9	-	-	28.2
HCM Lane LOS	E	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	0.8

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	54	778	0	0	751	50	0	0	0	49	0	57
Future Volume (veh/h)	54	778	0	0	751	50	0	0	0	49	0	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	864	0	0	834	56	0	0	0	54	0	63
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	283	1649	0	301	1159	78	112	741	0	818	0	628
Arrive On Green	0.05	0.46	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1781	3647	0	1781	3379	227	1339	1870	0	1781	0	1585
Grp Volume(v), veh/h	60	864	0	0	438	452	0	0	0	54	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1830	1339	1870	0	1781	0	1585
Q Serve(g_s), s	1.3	11.1	0.0	0.0	13.9	13.9	0.0	0.0	0.0	1.2	0.0	1.6
Cycle Q Clear(g_c), s	1.3	11.1	0.0	0.0	13.9	13.9	0.0	0.0	0.0	1.2	0.0	1.6
Prop In Lane	1.00		0.00	1.00		0.12	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	1649	0	301	609	627	112	741	0	818	0	628
V/C Ratio(X)	0.21	0.52	0.00	0.00	0.72	0.72	0.00	0.00	0.00	0.07	0.00	0.10
Avail Cap(c_a), veh/h	482	2236	0	589	1118	1151	112	741	0	818	0	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	12.2	0.0	0.0	18.4	18.4	0.0	0.0	0.0	12.1	0.0	12.2
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.9	0.0	0.0	5.4	5.6	0.0	0.0	0.0	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	12.5	0.0	0.0	20.1	20.0	0.0	0.0	0.0	12.3	0.0	12.5
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		924			890			0				117
Approach Delay, s/veh		12.5			20.0			0.0				12.4
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	34.4		30.0	7.8	26.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	13.1		3.6	3.3	15.9				
Green Ext Time (p_c), s		0.0	0.0	6.9		0.4	0.1	6.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.0								
HCM 6th LOS				B								



HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	1011	18	6	985	65	2	1	3	36	0	43
Future Vol, veh/h	70	1011	18	6	985	65	2	1	3	36	0	43
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	-	-	100	-	100	-	-	-	-	-	-
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	78	1123	20	7	1094	72	2	1	3	40	0	48





















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1166	0	0	1143	0	0	1850	2469	572	1826	2407	547
Stage 1	-	-	-	-	-	-	1289	1289	-	1108	1108	-
Stage 2	-	-	-	-	-	-	561	1180	-	718	1299	-
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	595	-	-	607	-	-	46	30	463	48	33	481
Stage 1	-	-	-	-	-	-	173	232	-	224	284	-
Stage 2	-	-	-	-	-	-	480	262	-	386	230	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	595	-	-	607	-	-	37	26	463	41	28	481
Mov Cap-2 Maneuver	-	-	-	-	-	-	37	26	-	41	28	-
Stage 1	-	-	-	-	-	-	150	202	-	195	281	-
Stage 2	-	-	-	-	-	-	427	259	-	331	200	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			71.1			211		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)		61	595	-	-	607	-	82
HCM Lane V/C Ratio		0.109	0.131	-	-	0.011	-	1.07
HCM Control Delay (s)		71.1	12	-	-	11	-	211
HCM Lane LOS		F	B	-	-	B	-	F
HCM 95th %tile Q(veh)		0.3	0.4	-	-	0	-	6.1

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	959	0	0	987	57	0	0	0	49	0	69
Future Volume (veh/h)	91	959	0	0	987	57	0	0	0	49	0	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	1066	0	0	1097	63	0	0	0	54	0	77
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	267	1886	0	275	1401	80	98	649	0	716	0	550
Arrive On Green	0.06	0.53	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.35	0.00	0.35
Sat Flow, veh/h	1781	3647	0	1781	3416	196	1322	1870	0	1781	0	1585
Grp Volume(v), veh/h	101	1066	0	0	570	590	0	0	0	54	0	77
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1835	1322	1870	0	1781	0	1585
Q Serve(g_s), s	2.2	14.8	0.0	0.0	20.5	20.5	0.0	0.0	0.0	1.5	0.0	2.5
Cycle Q Clear(g_c), s	2.2	14.8	0.0	0.0	20.5	20.5	0.0	0.0	0.0	1.5	0.0	2.5
Prop In Lane	1.00		0.00	1.00		0.11	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	1886	0	275	729	753	98	649	0	716	0	550
V/C Ratio(X)	0.38	0.57	0.00	0.00	0.78	0.78	0.00	0.00	0.00	0.08	0.00	0.14
Avail Cap(c_a), veh/h	416	1958	0	527	979	1011	98	649	0	716	0	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	11.6	0.0	0.0	18.8	18.8	0.0	0.0	0.0	16.2	0.0	16.5
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	3.0	2.9	0.0	0.0	0.0	0.2	0.0	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	0.9	5.2	0.0	0.0	8.3	8.6	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	11.9	0.0	0.0	21.8	21.8	0.0	0.0	0.0	16.4	0.0	17.0
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1167			1160			0				131
Approach Delay, s/veh		12.2			21.8			0.0				16.8
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	43.5		30.0	8.9	34.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	16.8		4.5	4.2	22.5				
Green Ext Time (p_c), s		0.0	0.0	8.5		0.5	0.1	7.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.0								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖		↔			↔	
Traffic Vol, veh/h	51	1110	22	6	756	45	9	1	8	16	1	29
Future Vol, veh/h	51	1110	22	6	756	45	9	1	8	16	1	29
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	-	-	100	-	100	-	-	-	-	-	-
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	57	1233	24	7	840	50	10	1	9	18	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	890	0	0	1257	0	0	1794	2263	629	1585	2225	420
Stage 1	-	-	-	-	-	-	1359	1359	-	854	854	-
Stage 2	-	-	-	-	-	-	435	904	-	731	1371	-
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	757	-	-	549	-	-	51	40	425	73	43	582
Stage 1	-	-	-	-	-	-	157	215	-	320	373	-
Stage 2	-	-	-	-	-	-	570	354	-	379	212	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	757	-	-	549	-	-	44	37	425	65	39	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	37	-	65	39	-
Stage 1	-	-	-	-	-	-	145	199	-	296	368	-
Stage 2	-	-	-	-	-	-	530	349	-	341	196	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			73.2			43.6		
HCM LOS							F			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	72	757	-	-	549	-	-	143
HCM Lane V/C Ratio	0.278	0.075	-	-	0.012	-	-	0.357
HCM Control Delay (s)	73.2	10.1	-	-	11.6	-	-	43.6
HCM Lane LOS	F	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-	-	1.5

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	128	1004	0	0	709	54	0	0	0	65	0	95
Future Volume (veh/h)	128	1004	0	0	709	54	0	0	0	65	0	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	1116	0	0	788	60	0	0	0	72	0	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	323	1678	0	229	1096	83	110	730	0	805	0	618
Arrive On Green	0.08	0.47	0.00	0.00	0.33	0.33	0.00	0.00	0.00	0.39	0.00	0.39
Sat Flow, veh/h	1781	3647	0	1781	3347	255	1288	1870	0	1781	0	1585
Grp Volume(v), veh/h	142	1116	0	0	418	430	0	0	0	72	0	106
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1825	1288	1870	0	1781	0	1585
Q Serve(g_s), s	3.2	15.8	0.0	0.0	13.5	13.5	0.0	0.0	0.0	1.7	0.0	2.9
Cycle Q Clear(g_c), s	3.2	15.8	0.0	0.0	13.5	13.5	0.0	0.0	0.0	1.7	0.0	2.9
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	1678	0	229	582	598	110	730	0	805	0	618
V/C Ratio(X)	0.44	0.67	0.00	0.00	0.72	0.72	0.00	0.00	0.00	0.09	0.00	0.17
Avail Cap(c_a), veh/h	475	2202	0	513	1101	1131	110	730	0	805	0	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	13.3	0.0	0.0	19.3	19.3	0.0	0.0	0.0	12.7	0.0	13.0
Incr Delay (d2), s/veh	0.9	0.5	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.6	0.0	0.0	5.4	5.5	0.0	0.0	0.0	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	13.8	0.0	0.0	21.0	21.0	0.0	0.0	0.0	12.9	0.0	13.6
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1258			848			0				178
Approach Delay, s/veh		13.9			21.0			0.0				13.3
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	35.4		30.0	9.4	25.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	17.8		4.9	5.2	15.5				
Green Ext Time (p_c), s		0.0	0.0	8.8		0.7	0.2	5.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.5								
HCM 6th LOS				B								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	25.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖		↕			↕	
Traffic Vol, veh/h	71	1202	18	3	1199	93	9	0	1	33	0	85
Future Vol, veh/h	71	1202	18	3	1199	93	9	0	1	33	0	85
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	-	-	100	-	100	-	-	-	-	-	-
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	79	1336	20	3	1332	103	10	0	1	37	0	94

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1435	0	0	1356	0	0	2176	2945	678	2164	2852	666
Stage 1	-	-	-	-	-	-	1504	1504	-	1338	1338	-
Stage 2	-	-	-	-	-	-	672	1441	-	826	1514	-
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	469	-	-	503	-	-	26	15	395	~ 26	17	402
Stage 1	-	-	-	-	-	-	127	183	-	161	220	-
Stage 2	-	-	-	-	-	-	412	196	-	332	181	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	469	-	-	503	-	-	17	12	395	~ 22	14	402
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	12	-	~ 22	14	-
Stage 1	-	-	-	-	-	-	106	152	-	134	219	-
Stage 2	-	-	-	-	-	-	313	195	-	275	151	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	\$ 343.1	\$ 552.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	19	469	-	-	503	-	-	69
HCM Lane V/C Ratio	0.585	0.168	-	-	0.007	-	-	1.9
HCM Control Delay (s)	\$ 343.1	14.2	-	-	12.2	-	-	\$ 552.3
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.6	0.6	-	-	0	-	-	11.9

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

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	82	1132	0	0	1245	61	0	0	0	107	0	93
Future Volume (veh/h)	82	1132	0	0	1245	61	0	0	0	107	0	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	1258	0	0	1383	68	0	0	0	119	0	103
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	223	2036	0	241	1597	78	89	591	0	652	0	501
Arrive On Green	0.05	0.57	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.32	0.00	0.32
Sat Flow, veh/h	1781	3647	0	1781	3448	169	1291	1870	0	1781	0	1585
Grp Volume(v), veh/h	91	1258	0	0	711	740	0	0	0	119	0	103
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1291	1870	0	1781	0	1585
Q Serve(g_s), s	2.0	18.9	0.0	0.0	28.9	29.1	0.0	0.0	0.0	4.0	0.0	3.8
Cycle Q Clear(g_c), s	2.0	18.9	0.0	0.0	28.9	29.1	0.0	0.0	0.0	4.0	0.0	3.8
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	2036	0	241	823	852	89	591	0	652	0	501
V/C Ratio(X)	0.41	0.62	0.00	0.00	0.86	0.87	0.00	0.00	0.00	0.18	0.00	0.21
Avail Cap(c_a), veh/h	358	2036	0	470	891	923	89	591	0	652	0	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	11.4	0.0	0.0	19.4	19.5	0.0	0.0	0.0	20.3	0.0	20.2
Incr Delay (d2), s/veh	1.2	0.6	0.0	0.0	8.4	8.4	0.0	0.0	0.0	0.6	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.7	0.0	0.0	12.8	13.3	0.0	0.0	0.0	1.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	12.0	0.0	0.0	27.8	27.8	0.0	0.0	0.0	20.9	0.0	21.1
LnGrp LOS	B	B	A	A	C	C	A	A	A	C	A	C
Approach Vol, veh/h		1349			1451			0			222	
Approach Delay, s/veh		12.4			27.8			0.0			21.0	
Approach LOS		B			C						C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	50.8		30.0	8.9	41.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	20.9		6.0	4.0	31.1				
Green Ext Time (p_c), s		0.0	0.0	9.5		0.8	0.1	6.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				20.4								
HCM 6th LOS				C								

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

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	35	862	8	3	801	54	12	0	5	17	0	26
Future Vol, veh/h	35	862	8	3	801	54	12	0	5	17	0	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	100	-	-	100	-	100	-	-	-	-	-	-
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	39	958	9	3	890	60	13	0	6	19	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	950	0	0	967	0	0	1492	1997	484	1453	1941	445
Stage 1	-	-	-	-	-	-	1041	1041	-	896	896	-
Stage 2	-	-	-	-	-	-	451	956	-	557	1045	-
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	719	-	-	708	-	-	85	59	529	91	64	561
Stage 1	-	-	-	-	-	-	246	305	-	301	357	-
Stage 2	-	-	-	-	-	-	557	335	-	482	304	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	719	-	-	708	-	-	77	56	529	86	60	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	56	-	86	60	-
Stage 1	-	-	-	-	-	-	233	289	-	285	356	-
Stage 2	-	-	-	-	-	-	526	334	-	451	288	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0			47.6			32.9		
HCM LOS	E			E			E			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	103	719	-	-	708	-	-	176
HCM Lane V/C Ratio	0.183	0.054	-	-	0.005	-	-	0.271
HCM Control Delay (s)	47.6	10.3	-	-	10.1	-	-	32.9
HCM Lane LOS	E	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	1

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	826	0	0	797	53	0	0	0	52	0	61
Future Volume (veh/h)	57	826	0	0	797	53	0	0	0	52	0	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	918	0	0	886	59	0	0	0	58	0	68
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	279	1699	0	292	1211	81	109	722	0	796	0	612
Arrive On Green	0.05	0.48	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.39	0.00	0.39
Sat Flow, veh/h	1781	3647	0	1781	3381	225	1333	1870	0	1781	0	1585
Grp Volume(v), veh/h	63	918	0	0	466	479	0	0	0	58	0	68
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1830	1333	1870	0	1781	0	1585
Q Serve(g_s), s	1.4	12.0	0.0	0.0	15.1	15.1	0.0	0.0	0.0	1.4	0.0	1.8
Cycle Q Clear(g_c), s	1.4	12.0	0.0	0.0	15.1	15.1	0.0	0.0	0.0	1.4	0.0	1.8
Prop In Lane	1.00		0.00	1.00		0.12	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	1699	0	292	636	655	109	722	0	796	0	612
V/C Ratio(X)	0.23	0.54	0.00	0.00	0.73	0.73	0.00	0.00	0.00	0.07	0.00	0.11
Avail Cap(c_a), veh/h	469	2178	0	572	1089	1121	109	722	0	796	0	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	12.1	0.0	0.0	18.5	18.5	0.0	0.0	0.0	12.9	0.0	13.0
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.2	0.0	0.0	5.9	6.1	0.0	0.0	0.0	0.5	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	12.4	0.0	0.0	20.1	20.0	0.0	0.0	0.0	13.1	0.0	13.4
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		981			945			0				126
Approach Delay, s/veh		12.5			20.1			0.0				13.2
Approach LOS		B			C							B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	36.1		30.0	7.9	28.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	14.0		3.8	3.4	17.1				
Green Ext Time (p_c), s		0.0	0.0	7.3		0.5	0.1	6.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									



HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/11/2022

Intersection												
Int Delay, s/veh	13											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕			↕	
Traffic Vol, veh/h	75	1073	19	6	1046	69	2	1	3	38	0	45
Future Vol, veh/h	75	1073	19	6	1046	69	2	1	3	38	0	45
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	-	-	100	-	100	-	-	-	-	-	-
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	83	1192	21	7	1162	77	2	1	3	42	0	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1239	0	0	1213	0	0	1964	2622	607	1939	2555	581
Stage 1	-	-	-	-	-	-	1369	1369	-	1176	1176	-
Stage 2	-	-	-	-	-	-	595	1253	-	763	1379	-
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	558	-	-	571	-	-	38	24	439	~ 39	26	457
Stage 1	-	-	-	-	-	-	154	213	-	203	263	-
Stage 2	-	-	-	-	-	-	458	242	-	363	210	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	558	-	-	571	-	-	30	20	439	~ 33	22	457
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	20	-	~ 33	22	-
Stage 1	-	-	-	-	-	-	131	181	-	173	260	-
Stage 2	-	-	-	-	-	-	403	239	-	305	179	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			89.7			\$ 354.6		
HCM LOS							F			F		





















Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	49	558	-	-	571	-	-	66
HCM Lane V/C Ratio	0.136	0.149	-	-	0.012	-	-	1.397
HCM Control Delay (s)	89.7	12.6	-	-	11.4	-	-	\$ 354.6
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0	-	-	7.7

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

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	1017	0	0	1048	61	0	0	0	52	0	74
Future Volume (veh/h)	96	1017	0	0	1048	61	0	0	0	52	0	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	1130	0	0	1164	68	0	0	0	58	0	82
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	258	1934	0	263	1452	85	95	630	0	695	0	534
Arrive On Green	0.06	0.54	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.34	0.00	0.34
Sat Flow, veh/h	1781	3647	0	1781	3412	199	1316	1870	0	1781	0	1585
Grp Volume(v), veh/h	107	1130	0	0	606	626	0	0	0	58	0	82
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1835	1316	1870	0	1781	0	1585
Q Serve(g_s), s	2.4	16.1	0.0	0.0	22.5	22.5	0.0	0.0	0.0	1.7	0.0	2.7
Cycle Q Clear(g_c), s	2.4	16.1	0.0	0.0	22.5	22.5	0.0	0.0	0.0	1.7	0.0	2.7
Prop In Lane	1.00		0.00	1.00		0.11	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1934	0	263	756	781	95	630	0	695	0	534
V/C Ratio(X)	0.41	0.58	0.00	0.00	0.80	0.80	0.00	0.00	0.00	0.08	0.00	0.15
Avail Cap(c_a), veh/h	400	1934	0	507	951	982	95	630	0	695	0	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	11.5	0.0	0.0	18.9	19.0	0.0	0.0	0.0	17.2	0.0	17.5
Incr Delay (d2), s/veh	1.1	0.5	0.0	0.0	4.0	3.9	0.0	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.7	0.0	0.0	9.3	9.6	0.0	0.0	0.0	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	12.0	0.0	0.0	22.9	22.8	0.0	0.0	0.0	17.4	0.0	18.2
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1237			1232			0			140	
Approach Delay, s/veh		12.3			22.9			0.0			17.9	
Approach LOS		B			C						B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	45.7		30.0	9.0	36.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	18.1		4.7	4.4	24.5				
Green Ext Time (p_c), s		0.0	0.0	8.9		0.6	0.1	7.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.6								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	8	18	0	6	27
Future Vol, veh/h	0	8	18	0	6	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	23	0	8	34

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	73	23	0	0	23	0
Stage 1	23	-	-	-	-	-
Stage 2	50	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	931	1054	-	-	1592	-
Stage 1	1000	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	926	1054	-	-	1592	-
Mov Cap-2 Maneuver	926	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	967	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1054	1592
HCM Lane V/C Ratio	-	-	0.009	0.005
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	48	1087	27	5	738	42	17	1	8	15	1	27
Future Vol, veh/h	48	1087	27	5	738	42	17	1	8	15	1	27
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	1208	30	6	820	47	19	1	9	19	1	34























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	867	0	0	1238	0	0	1766	2222	619	1557	2190	410
Stage 1	-	-	-	-	-	-	1343	1343	-	832	832	-
Stage 2	-	-	-	-	-	-	423	879	-	725	1358	-
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	772	-	-	558	-	-	53	43	432	76	45	591
Stage 1	-	-	-	-	-	-	160	219	-	330	382	-
Stage 2	-	-	-	-	-	-	579	363	-	383	215	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	772	-	-	558	-	-	46	39	432	68	41	591
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	39	-	68	41	-
Stage 1	-	-	-	-	-	-	148	202	-	304	378	-
Stage 2	-	-	-	-	-	-	538	359	-	344	198	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			103.5			42.6		
HCM LOS	F			F			F			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	63	772	-	-	558	-	-	148
HCM Lane V/C Ratio	0.459	0.078	-	-	0.01	-	-	0.363
HCM Control Delay (s)	103.5	10.1	-	-	11.5	-	-	42.6
HCM Lane LOS	F	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1.8	0.3	-	-	0	-	-	1.5

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	120	946	21	24	668	51	26	3	28	62	3	90
Future Volume (veh/h)	120	946	21	24	668	51	26	3	28	62	3	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	1051	23	27	742	57	32	4	35	69	3	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	1402	31	232	1178	90	537	62	545	601	17	583
Arrive On Green	0.07	0.39	0.39	0.03	0.35	0.35	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1781	3555	78	1781	3344	257	1291	165	1445	1368	46	1546
Grp Volume(v), veh/h	133	525	549	27	394	405	32	0	39	69	0	103
Grp Sat Flow(s),veh/h/ln	1781	1777	1856	1781	1777	1824	1291	0	1610	1368	0	1592
Q Serve(g_s), s	3.1	17.2	17.2	0.6	12.5	12.5	1.1	0.0	1.0	2.3	0.0	2.9
Cycle Q Clear(g_c), s	3.1	17.2	17.2	0.6	12.5	12.5	4.1	0.0	1.0	3.3	0.0	2.9
Prop In Lane	1.00		0.04	1.00		0.14	1.00		0.90	1.00		0.97
Lane Grp Cap(c), veh/h	347	700	732	232	626	643	537	0	607	601	0	600
V/C Ratio(X)	0.38	0.75	0.75	0.12	0.63	0.63	0.06	0.00	0.06	0.11	0.00	0.17
Avail Cap(c_a), veh/h	497	1064	1111	456	1064	1092	537	0	607	601	0	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	17.6	17.6	14.7	18.2	18.2	15.4	0.0	13.5	14.5	0.0	14.0
Incr Delay (d2), s/veh	0.7	1.6	1.6	0.2	1.0	1.0	0.2	0.0	0.2	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.7	6.9	0.3	4.9	5.0	0.3	0.0	0.4	0.7	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	19.3	19.2	15.0	19.3	19.3	15.6	0.0	13.7	14.9	0.0	14.7
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1207			826			71				172
Approach Delay, s/veh		18.7			19.1			14.5				14.8
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.5	31.2		30.0	9.3	28.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		6.1	2.6	19.2		5.3	5.1	14.5				
Green Ext Time (p_c), s		0.2	0.0	7.5		0.7	0.1	5.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
Traffic Vol, veh/h	0	7	10	0	10	20
Future Vol, veh/h	0	7	10	0	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	13	0	13	25

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	64	13	0	0	13	0
Stage 1	13	-	-	-	-	-
Stage 2	51	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	942	1067	-	-	1606	-
Stage 1	1010	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	934	1067	-	-	1606	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1067	1606
HCM Lane V/C Ratio	-	-	0.008	0.008
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	25.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕	↘		↕			↕	
Traffic Vol, veh/h	67	1163	27	3	1152	88	16	0	1	31	0	80
Future Vol, veh/h	67	1163	27	3	1152	88	16	0	1	31	0	80
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	1292	30	3	1280	98	18	0	1	39	0	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1378	0	0	1322	0	0	2121	2859	661	2100	2776	640
Stage 1	-	-	-	-	-	-	1475	1475	-	1286	1286	-
Stage 2	-	-	-	-	-	-	646	1384	-	814	1490	-
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	493	-	-	519	-	-	29	17	405	~ 30	19	418
Stage 1	-	-	-	-	-	-	132	189	-	174	233	-
Stage 2	-	-	-	-	-	-	427	209	-	338	186	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	493	-	-	519	-	-	19	14	405	~ 26	16	418
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	14	-	~ 26	16	-
Stage 1	-	-	-	-	-	-	110	157	-	144	232	-
Stage 2	-	-	-	-	-	-	323	208	-	280	154	-






















Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	\$ 449.4	\$ 465.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	20	493	-	-	519	-	-	80
HCM Lane V/C Ratio	0.944	0.17	-	-	0.006	-	-	1.734
HCM Control Delay (s)	\$ 449.4	13.8	-	-	12	-	-	\$ 465.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.6	0.6	-	-	0	-	-	11.8

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

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1066	31	36	1173	57	22	3	26	101	4	88
Future Volume (veh/h)	77	1066	31	36	1173	57	22	3	26	101	4	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	1184	34	40	1303	63	28	4	32	112	4	98
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	1650	47	248	1556	75	450	58	464	515	20	496
Arrive On Green	0.05	0.47	0.47	0.04	0.45	0.45	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	3528	101	1781	3451	167	1293	179	1433	1372	63	1532
Grp Volume(v), veh/h	86	596	622	40	670	696	28	0	36	112	0	102
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1840	1293	0	1612	1372	0	1595
Q Serve(g_s), s	2.0	21.2	21.2	0.9	26.2	26.3	1.3	0.0	1.2	4.8	0.0	3.6
Cycle Q Clear(g_c), s	2.0	21.2	21.2	0.9	26.2	26.3	4.9	0.0	1.2	6.1	0.0	3.6
Prop In Lane	1.00		0.05	1.00		0.09	1.00		0.89	1.00		0.96
Lane Grp Cap(c), veh/h	234	831	866	248	801	830	450	0	522	515	0	516
V/C Ratio(X)	0.37	0.72	0.72	0.16	0.84	0.84	0.06	0.00	0.07	0.22	0.00	0.20
Avail Cap(c_a), veh/h	376	914	953	420	914	946	450	0	522	515	0	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	16.8	16.8	13.3	19.1	19.1	21.0	0.0	18.4	20.5	0.0	19.2
Incr Delay (d2), s/veh	1.0	2.5	2.4	0.3	6.2	6.1	0.3	0.0	0.3	1.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.4	8.8	0.4	11.2	11.6	0.4	0.0	0.5	1.6	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	19.2	19.2	13.6	25.2	25.2	21.3	0.0	18.7	21.5	0.0	20.1
LnGrp LOS	B	B	B	B	C	C	C	A	B	C	A	C
Approach Vol, veh/h		1304			1406			64			214	
Approach Delay, s/veh		19.0			24.9			19.8			20.8	
Approach LOS		B			C			B			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.4	41.3		30.0	8.7	40.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		6.9	2.9	23.2		8.1	4.0	28.3				
Green Ext Time (p_c), s		0.2	0.0	7.9		0.8	0.1	7.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.9								
HCM 6th LOS				C								



HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	8	16	0	6	10
Future Vol, veh/h	0	8	16	0	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	20	0	8	13

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	49	20	0	0	20	0
Stage 1	20	-	-	-	-	-
Stage 2	29	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	960	1058	-	-	1596	-
Stage 1	1003	-	-	-	-	-
Stage 2	994	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	955	1058	-	-	1596	-
Mov Cap-2 Maneuver	955	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	989	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1058	1596
HCM Lane V/C Ratio	-	-	0.009	0.005
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

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	33	833	13	3	781	51	19	0	5	16	0	24
Future Vol, veh/h	33	833	13	3	781	51	19	0	5	16	0	24
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	926	14	3	868	57	21	0	6	20	0	30





















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	925	0	0	940	0	0	1455	1946	470	1419	1896	434
Stage 1	-	-	-	-	-	-	1015	1015	-	874	874	-
Stage 2	-	-	-	-	-	-	440	931	-	545	1022	-
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	734	-	-	725	-	-	91	64	540	97	69	570
Stage 1	-	-	-	-	-	-	255	314	-	311	365	-
Stage 2	-	-	-	-	-	-	566	344	-	490	312	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	734	-	-	725	-	-	82	60	540	92	65	570
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	60	-	92	65	-
Stage 1	-	-	-	-	-	-	241	296	-	294	364	-
Stage 2	-	-	-	-	-	-	534	343	-	458	295	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	53.6	31.5
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	100	734	-	-	725	-	-	185
HCM Lane V/C Ratio	0.267	0.056	-	-	0.005	-	-	0.27
HCM Control Delay (s)	53.6	10.2	-	-	10	-	-	31.5
HCM Lane LOS	F	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-	-	1

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	778	21	24	751	50	26	3	28	49	3	57
Future Volume (veh/h)	54	778	21	24	751	50	26	3	28	49	3	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	864	23	27	834	56	32	4	35	54	3	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	1288	34	264	1159	78	606	65	573	634	29	604
Arrive On Green	0.05	0.36	0.36	0.03	0.34	0.34	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1781	3536	94	1781	3379	227	1335	165	1445	1368	73	1524
Grp Volume(v), veh/h	60	434	453	27	438	452	32	0	39	54	0	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1830	1335	0	1610	1368	0	1596
Q Serve(g_s), s	1.4	13.2	13.2	0.6	13.9	13.9	1.0	0.0	1.0	1.6	0.0	1.7
Cycle Q Clear(g_c), s	1.4	13.2	13.2	0.6	13.9	13.9	2.7	0.0	1.0	2.6	0.0	1.7
Prop In Lane	1.00		0.05	1.00		0.12	1.00		0.90	1.00		0.95
Lane Grp Cap(c), veh/h	283	647	675	264	609	627	606	0	638	634	0	632
V/C Ratio(X)	0.21	0.67	0.67	0.10	0.72	0.72	0.05	0.00	0.06	0.09	0.00	0.10
Avail Cap(c_a), veh/h	482	1118	1166	502	1118	1151	606	0	638	634	0	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	17.2	17.2	14.0	18.4	18.4	13.1	0.0	12.0	12.8	0.0	12.2
Incr Delay (d2), s/veh	0.4	1.2	1.2	0.2	1.6	1.6	0.2	0.0	0.2	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.1	5.3	0.2	5.4	5.6	0.3	0.0	0.3	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	18.4	18.4	14.2	20.1	20.0	13.2	0.0	12.2	13.1	0.0	12.6
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		947			917			71			120	
Approach Delay, s/veh		18.1			19.9			12.7			12.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.4	27.9		30.0	7.8	26.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		4.7	2.6	15.2		4.6	3.4	15.9				
Green Ext Time (p_c), s		0.2	0.0	6.2		0.5	0.1	6.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	6	0	10	24
Future Vol, veh/h	0	7	6	0	10	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	8	0	13	30

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	64	8	0	0	8	0
Stage 1	8	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	942	1074	-	-	1612	-
Stage 1	1015	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	934	1074	-	-	1612	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1074	1612
HCM Lane V/C Ratio	-	-	0.008	0.008
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	14											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	70	1042	28	6	1007	65	9	1	3	36	0	43
Future Vol, veh/h	70	1042	28	6	1007	65	9	1	3	36	0	43
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	1158	31	7	1119	72	10	1	3	45	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1191	0	0	1189	0	0	1924	2555	595	1889	2498	560
Stage 1	-	-	-	-	-	-	1350	1350	-	1133	1133	-
Stage 2	-	-	-	-	-	-	574	1205	-	756	1365	-
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	582	-	-	583	-	-	40	26	447	~ 43	28	472
Stage 1	-	-	-	-	-	-	159	217	-	216	276	-
Stage 2	-	-	-	-	-	-	471	255	-	366	214	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	582	-	-	583	-	-	31	22	447	~ 36	23	472
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	22	-	~ 36	23	-
Stage 1	-	-	-	-	-	-	135	184	-	183	273	-
Stage 2	-	-	-	-	-	-	412	252	-	306	182	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			149.1			\$ 333.1		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	38	582	-	-	583	-	-	72
HCM Lane V/C Ratio	0.38	0.15	-	-	0.011	-	-	1.372
HCM Control Delay (s)	149.1	12.3	-	-	11.2	-	-	\$ 333.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.3	0.5	-	-	0	-	-	8

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

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	91	959	31	36	987	57	22	3	26	49	4	69
Future Volume (veh/h)	91	959	31	36	987	57	22	3	26	49	4	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	1066	34	40	1097	63	28	4	32	54	4	77
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1517	48	260	1401	80	509	62	497	553	27	527
Arrive On Green	0.06	0.43	0.43	0.04	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3515	112	1781	3416	196	1317	179	1433	1372	79	1518
Grp Volume(v), veh/h	101	539	561	40	570	590	28	0	36	54	0	81
Grp Sat Flow(s),veh/h/ln	1781	1777	1850	1781	1777	1835	1317	0	1612	1372	0	1597
Q Serve(g_s), s	2.3	18.2	18.2	0.9	20.5	20.5	1.1	0.0	1.1	2.0	0.0	2.6
Cycle Q Clear(g_c), s	2.3	18.2	18.2	0.9	20.5	20.5	3.7	0.0	1.1	3.1	0.0	2.6
Prop In Lane	1.00		0.06	1.00		0.11	1.00		0.89	1.00		0.95
Lane Grp Cap(c), veh/h	267	767	798	260	729	753	509	0	559	553	0	554
V/C Ratio(X)	0.38	0.70	0.70	0.15	0.78	0.78	0.06	0.00	0.06	0.10	0.00	0.15
Avail Cap(c_a), veh/h	416	979	1019	447	979	1011	509	0	559	553	0	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	17.0	17.0	13.5	18.8	18.8	17.8	0.0	16.0	17.1	0.0	16.5
Incr Delay (d2), s/veh	0.9	1.6	1.6	0.3	3.0	2.9	0.2	0.0	0.2	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	7.1	7.4	0.4	8.3	8.6	0.3	0.0	0.4	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	18.7	18.6	13.8	21.8	21.8	18.0	0.0	16.3	17.4	0.0	17.1
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		1201			1200			64				135
Approach Delay, s/veh		18.4			21.5			17.0				17.2
Approach LOS		B			C			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.3	36.2		30.0	8.9	34.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		5.7	2.9	20.2		5.1	4.3	22.5				
Green Ext Time (p_c), s		0.2	0.0	7.6		0.5	0.1	7.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				19.7								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	8	18	0	6	29
Future Vol, veh/h	0	8	18	0	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	23	0	8	36

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	75	23	0	0	23	0
Stage 1	23	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	928	1054	-	-	1592	-
Stage 1	1000	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	923	1054	-	-	1592	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	965	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1054	1592
HCM Lane V/C Ratio	-	-	0.009	0.005
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↕↗			↕↗	
Traffic Vol, veh/h	51	1131	28	6	782	45	17	1	8	16	1	29
Future Vol, veh/h	51	1131	28	6	782	45	17	1	8	16	1	29
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1257	31	7	869	50	19	1	9	20	1	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	919	0	0	1288	0	0	1850	2334	644	1640	2299	435
Stage 1	-	-	-	-	-	-	1401	1401	-	883	883	-
Stage 2	-	-	-	-	-	-	449	933	-	757	1416	-
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	738	-	-	534	-	-	46	36	416	66	38	569
Stage 1	-	-	-	-	-	-	147	205	-	307	362	-
Stage 2	-	-	-	-	-	-	559	343	-	366	202	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	738	-	-	534	-	-	39	32	416	58	34	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	39	32	-	58	34	-
Stage 1	-	-	-	-	-	-	134	187	-	280	357	-
Stage 2	-	-	-	-	-	-	515	339	-	325	184	-

























Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			135.3			53.6		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)		53	738	-	-	534	-	129
HCM Lane V/C Ratio		0.545	0.086	-	-	0.012	-	0.446
HCM Control Delay (s)		135.3	10.3	-	-	11.8	-	53.6
HCM Lane LOS		F	B	-	-	B	-	F
HCM 95th %tile Q(veh)		2.1	0.3	-	-	0	-	2



HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	128	1004	21	24	709	54	26	3	28	65	3	95
Future Volume (veh/h)	128	1004	21	24	709	54	26	3	28	65	3	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	1116	23	27	788	60	32	4	35	72	3	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	1460	30	225	1224	93	515	61	530	584	16	568
Arrive On Green	0.07	0.41	0.41	0.03	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	3561	73	1781	3347	255	1284	165	1445	1368	44	1548
Grp Volume(v), veh/h	142	557	582	27	418	430	32	0	39	72	0	109
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1825	1284	0	1610	1368	0	1592
Q Serve(g_s), s	3.3	18.7	18.7	0.6	13.6	13.6	1.2	0.0	1.1	2.5	0.0	3.2
Cycle Q Clear(g_c), s	3.3	18.7	18.7	0.6	13.6	13.6	4.4	0.0	1.1	3.6	0.0	3.2
Prop In Lane	1.00		0.04	1.00		0.14	1.00		0.90	1.00		0.97
Lane Grp Cap(c), veh/h	345	729	762	225	650	667	515	0	590	584	0	584
V/C Ratio(X)	0.41	0.76	0.76	0.12	0.64	0.64	0.06	0.00	0.07	0.12	0.00	0.19
Avail Cap(c_a), veh/h	483	1035	1081	442	1035	1062	515	0	590	584	0	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	17.6	17.6	14.8	18.3	18.3	16.5	0.0	14.3	15.5	0.0	15.0
Incr Delay (d2), s/veh	0.8	2.2	2.1	0.2	1.1	1.0	0.2	0.0	0.2	0.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.4	7.7	0.3	5.3	5.5	0.4	0.0	0.4	0.8	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	19.8	19.7	15.0	19.4	19.4	16.7	0.0	14.5	15.9	0.0	15.7
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1281			875			71				181
Approach Delay, s/veh		19.1			19.2			15.5				15.8
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.5	33.0		30.0	9.6	29.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		6.4	2.6	20.7		5.6	5.3	15.6				
Green Ext Time (p_c), s		0.2	0.0	7.8		0.8	0.1	5.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.8								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	7	10	0	10	21
Future Vol, veh/h	0	7	10	0	10	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	13	0	13	26

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	65	13	0	0	13	0
Stage 1	13	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	941	1067	-	-	1606	-
Stage 1	1010	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	933	1067	-	-	1606	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	962	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1067	1606
HCM Lane V/C Ratio	-	-	0.008	0.008
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	40.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖		↕			↕	
Traffic Vol, veh/h	71	1233	28	3	1221	93	16	0	1	33	0	85
Future Vol, veh/h	71	1233	28	3	1221	93	16	0	1	33	0	85
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	1370	31	3	1357	103	18	0	1	41	0	106

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1460	0	0	1401	0	0	2249	3030	701	2226	2942	679
Stage 1	-	-	-	-	-	-	1564	1564	-	1363	1363	-
Stage 2	-	-	-	-	-	-	685	1466	-	863	1579	-
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	459	-	-	484	-	-	23	13	381	~ 24	15	394
Stage 1	-	-	-	-	-	-	117	171	-	156	214	-
Stage 2	-	-	-	-	-	-	404	191	-	316	168	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	459	-	-	484	-	-	~ 14	10	381	~ 20	12	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 14	10	-	~ 20	12	-
Stage 1	-	-	-	-	-	-	94	138	-	126	213	-
Stage 2	-	-	-	-	-	-	293	190	-	254	135	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	\$ 676.7	\$ 752.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	15	459	-	-	484	-	-	63
HCM Lane V/C Ratio	1.259	0.193	-	-	0.007	-	-	2.341
HCM Control Delay (s)	\$ 676.7	14.7	-	-	12.5	-	-	\$ 752.9
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.9	0.7	-	-	0	-	-	14.4

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

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	82	1132	31	36	1245	61	22	3	26	107	4	93
Future Volume (veh/h)	82	1132	31	36	1245	61	22	3	26	107	4	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	1258	34	40	1383	68	28	4	32	119	4	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1698	46	237	1597	78	432	57	453	501	19	485
Arrive On Green	0.05	0.48	0.48	0.04	0.46	0.46	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	3535	95	1781	3448	169	1287	179	1433	1372	60	1535
Grp Volume(v), veh/h	91	632	660	40	711	740	28	0	36	119	0	107
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1840	1287	0	1612	1372	0	1594
Q Serve(g_s), s	2.1	23.2	23.2	0.9	28.9	29.1	1.3	0.0	1.3	5.4	0.0	4.0
Cycle Q Clear(g_c), s	2.1	23.2	23.2	0.9	28.9	29.1	5.3	0.0	1.3	6.6	0.0	4.0
Prop In Lane	1.00		0.05	1.00		0.09	1.00		0.89	1.00		0.96
Lane Grp Cap(c), veh/h	223	854	890	237	823	852	432	0	509	501	0	503
V/C Ratio(X)	0.41	0.74	0.74	0.17	0.86	0.87	0.06	0.00	0.07	0.24	0.00	0.21
Avail Cap(c_a), veh/h	358	891	929	403	891	923	432	0	509	501	0	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	16.9	16.9	13.6	19.4	19.5	22.2	0.0	19.3	21.7	0.0	20.3
Incr Delay (d2), s/veh	1.2	3.2	3.1	0.3	8.4	8.4	0.3	0.0	0.3	1.1	0.0	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	0.8	9.4	9.7	0.4	12.8	13.3	0.4	0.0	0.5	1.8	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	20.1	20.0	13.9	27.8	27.8	22.5	0.0	19.6	22.8	0.0	21.2
LnGrp LOS	B	C	C	B	C	C	C	A	B	C	A	C
Approach Vol, veh/h		1383			1491			64				226
Approach Delay, s/veh		19.9			27.4			20.9				22.0
Approach LOS		B			C			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.5	43.3		30.0	8.9	41.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		7.3	2.9	25.2		8.6	4.1	31.1				
Green Ext Time (p_c), s		0.2	0.0	7.9		0.8	0.1	6.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.6								
HCM 6th LOS				C								

HCM 6th TWSC  
 2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	17	0	6	11
Future Vol, veh/h	0	8	17	0	6	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	21	0	8	14

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	51	21	0	0	21	0
Stage 1	21	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	958	1056	-	-	1595	-
Stage 1	1002	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	953	1056	-	-	1595	-
Mov Cap-2 Maneuver	953	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	988	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1056	1595
HCM Lane V/C Ratio	-	-	0.009	0.005
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕↗		↙	↕↗	↙		↕↗			↕↗	
Traffic Vol, veh/h	35	883	14	3	827	54	20	0	5	17	0	26
Future Vol, veh/h	35	883	14	3	827	54	20	0	5	17	0	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	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	981	16	3	919	60	22	0	6	21	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	979	0	0	997	0	0	1543	2062	499	1504	2010	460
Stage 1	-	-	-	-	-	-	1077	1077	-	925	925	-
Stage 2	-	-	-	-	-	-	466	985	-	579	1085	-
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	701	-	-	690	-	-	78	54	517	84	58	548
Stage 1	-	-	-	-	-	-	234	293	-	290	346	-
Stage 2	-	-	-	-	-	-	546	324	-	468	291	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	701	-	-	690	-	-	70	50	517	79	54	548
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	50	-	79	54	-
Stage 1	-	-	-	-	-	-	219	275	-	272	345	-
Stage 2	-	-	-	-	-	-	511	323	-	434	273	-






















Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	66.7	37.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	85	701	-	-	690	-	-	164
HCM Lane V/C Ratio	0.327	0.062	-	-	0.005	-	-	0.328
HCM Control Delay (s)	66.7	10.5	-	-	10.2	-	-	37.3
HCM Lane LOS	F	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0	-	-	1.3

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	826	21	24	797	53	26	3	28	52	3	61
Future Volume (veh/h)	57	826	21	24	797	53	26	3	28	52	3	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	918	23	27	886	59	32	4	35	58	3	68
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	1347	34	259	1211	81	584	64	558	616	26	589
Arrive On Green	0.05	0.38	0.38	0.03	0.36	0.36	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	3542	89	1781	3381	225	1329	165	1445	1368	67	1528
Grp Volume(v), veh/h	63	460	481	27	466	479	32	0	39	58	0	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1854	1781	1777	1830	1329	0	1610	1368	0	1595
Q Serve(g_s), s	1.4	14.3	14.3	0.6	15.1	15.1	1.0	0.0	1.0	1.8	0.0	1.9
Cycle Q Clear(g_c), s	1.4	14.3	14.3	0.6	15.1	15.1	2.9	0.0	1.0	2.8	0.0	1.9
Prop In Lane	1.00		0.05	1.00		0.12	1.00		0.90	1.00		0.96
Lane Grp Cap(c), veh/h	279	676	705	259	636	655	584	0	621	616	0	615
V/C Ratio(X)	0.23	0.68	0.68	0.10	0.73	0.73	0.05	0.00	0.06	0.09	0.00	0.12
Avail Cap(c_a), veh/h	469	1089	1136	489	1089	1121	584	0	621	616	0	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	17.1	17.1	13.9	18.5	18.5	14.0	0.0	12.8	13.7	0.0	13.0
Incr Delay (d2), s/veh	0.4	1.2	1.2	0.2	1.6	1.6	0.2	0.0	0.2	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.5	5.7	0.2	5.9	6.1	0.3	0.0	0.4	0.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	18.3	18.3	14.1	20.1	20.0	14.2	0.0	13.0	14.0	0.0	13.4
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		1004			972			71				129
Approach Delay, s/veh		18.1			19.9			13.5				13.7
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.5	29.6		30.0	7.9	28.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		4.9	2.6	16.3		4.8	3.4	17.1				
Green Ext Time (p_c), s		0.2	0.0	6.6		0.5	0.1	6.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.5								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	6	0	10	25
Future Vol, veh/h	0	7	6	0	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	8	0	13	31

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	65	8	0	0	8
Stage 1	8	-	-	-	-
Stage 2	57	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	941	1074	-	-	1612
Stage 1	1015	-	-	-	-
Stage 2	966	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	933	1074	-	-	1612
Mov Cap-2 Maneuver	933	-	-	-	-
Stage 1	1015	-	-	-	-
Stage 2	958	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1074	1612
HCM Lane V/C Ratio	-	-	0.008	0.008
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0



HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	22.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖		↔			↔	
Traffic Vol, veh/h	75	1104	29	6	1068	69	9	1	3	38	0	45
Future Vol, veh/h	75	1104	29	6	1068	69	9	1	3	38	0	45
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	94	1227	32	7	1187	77	10	1	3	48	0	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1264	0	0	1259	0	0	2039	2709	630	2003	2648	594
Stage 1	-	-	-	-	-	-	1431	1431	-	1201	1201	-
Stage 2	-	-	-	-	-	-	608	1278	-	802	1447	-
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	546	-	-	548	-	-	33	21	424	~ 35	23	448
Stage 1	-	-	-	-	-	-	141	198	-	196	256	-
Stage 2	-	-	-	-	-	-	450	235	-	344	195	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	546	-	-	548	-	-	25	17	424	~ 28	19	448
Mov Cap-2 Maneuver	-	-	-	-	-	-	25	17	-	~ 28	19	-
Stage 1	-	-	-	-	-	-	117	164	-	162	253	-
Stage 2	-	-	-	-	-	-	388	232	-	281	161	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.1			197.9			\$ 545.6		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	31	546	-	-	548	-	-	57
HCM Lane V/C Ratio	0.466	0.172	-	-	0.012	-	-	1.82
HCM Control Delay (s)	197.9	13	-	-	11.7	-	-	\$ 545.6
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.5	0.6	-	-	0	-	-	9.8

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

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	96	1017	31	36	1048	61	22	3	26	52	4	74
Future Volume (veh/h)	96	1017	31	36	1048	61	22	3	26	52	4	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	1130	34	40	1164	68	28	4	32	58	4	82
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1575	47	252	1452	85	487	60	483	537	25	513
Arrive On Green	0.06	0.45	0.45	0.04	0.43	0.43	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	3522	106	1781	3412	199	1311	179	1433	1372	74	1522
Grp Volume(v), veh/h	107	570	594	40	606	626	28	0	36	58	0	86
Grp Sat Flow(s),veh/h/ln	1781	1777	1851	1781	1777	1835	1311	0	1612	1372	0	1596
Q Serve(g_s), s	2.5	19.8	19.8	0.9	22.5	22.5	1.2	0.0	1.1	2.3	0.0	2.9
Cycle Q Clear(g_c), s	2.5	19.8	19.8	0.9	22.5	22.5	4.0	0.0	1.1	3.4	0.0	2.9
Prop In Lane	1.00		0.06	1.00		0.11	1.00		0.89	1.00		0.95
Lane Grp Cap(c), veh/h	258	794	828	252	756	781	487	0	543	537	0	538
V/C Ratio(X)	0.41	0.72	0.72	0.16	0.80	0.80	0.06	0.00	0.07	0.11	0.00	0.16
Avail Cap(c_a), veh/h	400	951	991	432	951	982	487	0	543	537	0	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	17.0	17.0	13.5	18.9	19.0	19.0	0.0	17.0	18.2	0.0	17.6
Incr Delay (d2), s/veh	1.1	2.1	2.0	0.3	4.0	3.9	0.2	0.0	0.2	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.8	8.1	0.4	9.3	9.6	0.4	0.0	0.4	0.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	19.1	19.1	13.8	22.9	22.8	19.2	0.0	17.3	18.6	0.0	18.2
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		1271			1272			64			144	
Approach Delay, s/veh		18.8			22.6			18.1			18.4	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.3	38.3		30.0	9.0	36.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		6.0	2.9	21.8		5.4	4.5	24.5				
Green Ext Time (p_c), s		0.2	0.0	7.8		0.6	0.1	7.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				20.5								
HCM 6th LOS				C								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	5	0	8	10	6	22
Future Vol, veh/h	5	0	8	10	6	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	0	10	13	8	28

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	61	17	0	0	23
Stage 1	17	-	-	-	-
Stage 2	44	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	945	1062	-	-	1592
Stage 1	1006	-	-	-	-
Stage 2	978	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	940	1062	-	-	1592
Mov Cap-2 Maneuver	940	-	-	-	-
Stage 1	1006	-	-	-	-
Stage 2	973	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	940	1592
HCM Lane V/C Ratio	-	-	0.007	0.005
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

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	1082	28	0	753	43	0	0	8	0	0	27
Future Vol, veh/h	0	1082	28	0	753	43	0	0	8	0	0	27
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1202	31	0	837	48	0	0	9	0	0	34






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	885	0	0	1233	0	0	1637	2103	617	1438	2070	419
Stage 1	-	-	-	-	-	-	1218	1218	-	837	837	-
Stage 2	-	-	-	-	-	-	419	885	-	601	1233	-
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	760	-	-	561	-	-	67	51	433	94	53	583
Stage 1	-	-	-	-	-	-	191	251	-	327	380	-
Stage 2	-	-	-	-	-	-	582	361	-	454	247	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	760	-	-	561	-	-	63	51	433	92	53	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	51	-	92	53	-
Stage 1	-	-	-	-	-	-	191	251	-	327	380	-
Stage 2	-	-	-	-	-	-	548	361	-	445	247	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.5	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	433	760	-	-	561	-	-	583
HCM Lane V/C Ratio	0.021	-	-	-	-	-	-	0.058
HCM Control Delay (s)	13.5	0	-	-	0	-	-	11.6
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	946	21	29	668	51	42	3	28	62	3	90
Future Volume (veh/h)	120	946	21	29	668	51	42	3	28	62	3	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	1051	23	32	742	57	52	4	35	69	3	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	1399	31	238	1189	91	534	62	542	597	17	579
Arrive On Green	0.07	0.39	0.39	0.03	0.36	0.36	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	3555	78	1781	3344	257	1291	165	1445	1368	46	1546
Grp Volume(v), veh/h	133	525	549	32	394	405	52	0	39	69	0	103
Grp Sat Flow(s),veh/h/ln	1781	1777	1856	1781	1777	1824	1291	0	1610	1368	0	1592
Q Serve(g_s), s	3.1	17.3	17.3	0.8	12.5	12.5	1.9	0.0	1.1	2.3	0.0	2.9
Cycle Q Clear(g_c), s	3.1	17.3	17.3	0.8	12.5	12.5	4.9	0.0	1.1	3.4	0.0	2.9
Prop In Lane	1.00		0.04	1.00		0.14	1.00		0.90	1.00		0.97
Lane Grp Cap(c), veh/h	350	699	730	238	632	649	534	0	603	597	0	597
V/C Ratio(X)	0.38	0.75	0.75	0.13	0.62	0.62	0.10	0.00	0.06	0.12	0.00	0.17
Avail Cap(c_a), veh/h	497	1058	1105	454	1058	1086	534	0	603	597	0	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	17.8	17.8	14.6	18.2	18.2	15.8	0.0	13.6	14.7	0.0	14.2
Incr Delay (d2), s/veh	0.7	1.7	1.6	0.3	1.0	1.0	0.4	0.0	0.2	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.7	7.0	0.3	4.9	5.0	0.6	0.0	0.4	0.7	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	19.4	19.4	14.9	19.2	19.2	16.2	0.0	13.8	15.1	0.0	14.8
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1207			831			91				172
Approach Delay, s/veh		18.8			19.0			15.2				14.9
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.8	31.3		30.0	9.4	28.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		6.9	2.8	19.3		5.4	5.1	14.5				
Green Ext Time (p_c), s		0.3	0.0	7.5		0.7	0.1	5.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	3	0	1	9	10	17
Future Vol, veh/h	3	0	1	9	10	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	1	11	13	21

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	54	7	0	0	12
Stage 1	7	-	-	-	-
Stage 2	47	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	954	1075	-	-	1607
Stage 1	1016	-	-	-	-
Stage 2	975	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	946	1075	-	-	1607
Mov Cap-2 Maneuver	946	-	-	-	-
Stage 1	1016	-	-	-	-
Stage 2	967	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	946	1607
HCM Lane V/C Ratio	-	-	0.004	0.008
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

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	0	1194	27	0	1168	88	0	0	1	0	0	80
Future Vol, veh/h	0	1194	27	0	1168	88	0	0	1	0	0	80
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1327	30	0	1298	98	0	0	1	0	0	100






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1396	0	0	1357	0	0	1991	2738	679	1962	2655	649
Stage 1	-	-	-	-	-	-	1342	1342	-	1298	1298	-
Stage 2	-	-	-	-	-	-	649	1396	-	664	1357	-
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	486	-	-	503	-	-	36	20	394	38	23	412
Stage 1	-	-	-	-	-	-	160	219	-	171	230	-
Stage 2	-	-	-	-	-	-	425	206	-	416	215	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	486	-	-	503	-	-	27	20	394	38	23	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	27	20	-	38	23	-
Stage 1	-	-	-	-	-	-	160	219	-	171	230	-
Stage 2	-	-	-	-	-	-	322	206	-	415	215	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			14.2			16.5		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	394	486	-	-	503	-	-	412
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	0.243
HCM Control Delay (s)	14.2	0	-	-	0	-	-	16.5
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.9

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1066	31	39	1173	57	38	3	26	101	4	88
Future Volume (veh/h)	77	1066	31	39	1173	57	38	3	26	101	4	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	1184	34	43	1303	63	48	4	32	112	4	98
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	1644	47	250	1556	75	450	58	464	515	20	496
Arrive On Green	0.05	0.47	0.47	0.04	0.45	0.45	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	3528	101	1781	3451	167	1293	179	1433	1372	63	1532
Grp Volume(v), veh/h	86	596	622	43	670	696	48	0	36	112	0	102
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1840	1293	0	1612	1372	0	1595
Q Serve(g_s), s	2.0	21.2	21.3	1.0	26.2	26.3	2.2	0.0	1.2	4.8	0.0	3.6
Cycle Q Clear(g_c), s	2.0	21.2	21.3	1.0	26.2	26.3	5.8	0.0	1.2	6.1	0.0	3.6
Prop In Lane	1.00		0.05	1.00		0.09	1.00		0.89	1.00		0.96
Lane Grp Cap(c), veh/h	234	828	863	250	801	830	450	0	522	515	0	516
V/C Ratio(X)	0.37	0.72	0.72	0.17	0.84	0.84	0.11	0.00	0.07	0.22	0.00	0.20
Avail Cap(c_a), veh/h	376	914	953	419	914	946	450	0	522	515	0	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	16.9	16.9	13.3	19.1	19.1	21.3	0.0	18.4	20.5	0.0	19.2
Incr Delay (d2), s/veh	1.0	2.5	2.4	0.3	6.2	6.1	0.5	0.0	0.3	1.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.5	8.8	0.4	11.2	11.6	0.7	0.0	0.5	1.6	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	19.4	19.3	13.7	25.2	25.2	21.8	0.0	18.7	21.5	0.0	20.1
LnGrp LOS	B	B	B	B	C	C	C	A	B	C	A	C
Approach Vol, veh/h		1304			1409			84			214	
Approach Delay, s/veh		19.2			24.8			20.5			20.8	
Approach LOS		B			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.5	41.2		30.0	8.7	40.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		7.8	3.0	23.3		8.1	4.0	28.3				
Green Ext Time (p_c), s		0.2	0.0	7.9		0.8	0.1	7.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				22.0								
HCM 6th LOS				C								



HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	3	0	5	11	6	7
Future Vol, veh/h	3	0	5	11	6	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	6	14	8	9

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	38	13	0	0	20
Stage 1	13	-	-	-	-
Stage 2	25	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	974	1067	-	-	1596
Stage 1	1010	-	-	-	-
Stage 2	998	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	969	1067	-	-	1596
Mov Cap-2 Maneuver	969	-	-	-	-
Stage 1	1010	-	-	-	-
Stage 2	993	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	969	1596
HCM Lane V/C Ratio	-	-	0.004	0.005
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

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	849	13	0	798	51	0	0	5	0	0	24
Future Vol, veh/h	0	849	13	0	798	51	0	0	5	0	0	24
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	943	14	0	887	57	0	0	6	0	0	30






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	944	0	0	957	0	0	1394	1894	479	1359	1844	444
Stage 1	-	-	-	-	-	-	950	950	-	887	887	-
Stage 2	-	-	-	-	-	-	444	944	-	472	957	-
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	722	-	-	714	-	-	101	69	533	107	74	561
Stage 1	-	-	-	-	-	-	280	337	-	305	360	-
Stage 2	-	-	-	-	-	-	563	339	-	542	334	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	722	-	-	714	-	-	96	69	533	106	74	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	96	69	-	106	74	-
Stage 1	-	-	-	-	-	-	280	337	-	305	360	-
Stage 2	-	-	-	-	-	-	533	339	-	536	334	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	533	722	-	-	714	-	-	561
HCM Lane V/C Ratio	0.01	-	-	-	-	-	-	0.053
HCM Control Delay (s)	11.8	0	-	-	0	-	-	11.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	778	21	27	751	50	43	3	28	49	3	57
Future Volume (veh/h)	54	778	21	27	751	50	43	3	28	49	3	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	864	23	30	834	56	54	4	35	54	3	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	1279	34	267	1159	78	606	65	573	634	29	604
Arrive On Green	0.05	0.36	0.36	0.03	0.34	0.34	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1781	3536	94	1781	3379	227	1335	165	1445	1368	73	1524
Grp Volume(v), veh/h	60	434	453	30	438	452	54	0	39	54	0	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1830	1335	0	1610	1368	0	1596
Q Serve(g_s), s	1.4	13.3	13.3	0.7	13.9	13.9	1.7	0.0	1.0	1.6	0.0	1.7
Cycle Q Clear(g_c), s	1.4	13.3	13.3	0.7	13.9	13.9	3.4	0.0	1.0	2.6	0.0	1.7
Prop In Lane	1.00		0.05	1.00		0.12	1.00		0.90	1.00		0.95
Lane Grp Cap(c), veh/h	283	643	671	267	609	627	606	0	638	634	0	632
V/C Ratio(X)	0.21	0.68	0.68	0.11	0.72	0.72	0.09	0.00	0.06	0.09	0.00	0.10
Avail Cap(c_a), veh/h	482	1118	1166	500	1118	1151	606	0	638	634	0	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	17.3	17.3	14.0	18.4	18.4	13.3	0.0	12.0	12.8	0.0	12.2
Incr Delay (d2), s/veh	0.4	1.2	1.2	0.2	1.6	1.6	0.3	0.0	0.2	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.1	5.3	0.3	5.4	5.6	0.5	0.0	0.3	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	18.6	18.5	14.2	20.1	20.0	13.6	0.0	12.2	13.1	0.0	12.6
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		947			920			93				120
Approach Delay, s/veh		18.3			19.8			13.0				12.8
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.6	27.8		30.0	7.8	26.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		5.4	2.7	15.3		4.6	3.4	15.9				
Green Ext Time (p_c), s		0.3	0.0	6.2		0.5	0.1	6.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	6	0	3	3	10	18
Future Vol, veh/h	6	0	3	3	10	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	4	4	13	23

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	55	6	0	0	8
Stage 1	6	-	-	-	-
Stage 2	49	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	953	1077	-	-	1612
Stage 1	1017	-	-	-	-
Stage 2	973	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	945	1077	-	-	1612
Mov Cap-2 Maneuver	945	-	-	-	-
Stage 1	1017	-	-	-	-
Stage 2	965	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	945	1612
HCM Lane V/C Ratio	-	-	0.008	0.008
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1078	28	0	1016	65	0	0	5	0	0	43
Future Vol, veh/h	0	1078	28	0	1016	65	0	0	5	0	0	43
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1198	31	0	1129	72	0	0	6	0	0	54





















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1201	0	0	1229	0	0	1779	2415	615	1728	2358	565
Stage 1	-	-	-	-	-	-	1214	1214	-	1129	1129	-
Stage 2	-	-	-	-	-	-	565	1201	-	599	1229	-
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	577	-	-	563	-	-	52	32	434	57	35	468
Stage 1	-	-	-	-	-	-	193	253	-	217	277	-
Stage 2	-	-	-	-	-	-	477	256	-	455	248	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	577	-	-	563	-	-	46	32	434	56	35	468
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	32	-	56	35	-
Stage 1	-	-	-	-	-	-	193	253	-	217	277	-
Stage 2	-	-	-	-	-	-	422	256	-	449	248	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			13.4			13.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	434	577	-	-	563	-	-	468
HCM Lane V/C Ratio	0.013	-	-	-	-	-	-	0.115
HCM Control Delay (s)	13.4	0	-	-	0	-	-	13.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	959	31	42	987	57	32	3	26	49	4	69
Future Volume (veh/h)	91	959	31	42	987	57	32	3	26	49	4	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	1066	34	47	1097	63	40	4	32	54	4	77
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1503	48	264	1401	80	509	62	497	553	27	527
Arrive On Green	0.06	0.43	0.43	0.04	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3515	112	1781	3416	196	1317	179	1433	1372	79	1518
Grp Volume(v), veh/h	101	539	561	47	570	590	40	0	36	54	0	81
Grp Sat Flow(s),veh/h/ln	1781	1777	1850	1781	1777	1835	1317	0	1612	1372	0	1597
Q Serve(g_s), s	2.3	18.3	18.3	1.1	20.5	20.5	1.6	0.0	1.1	2.0	0.0	2.6
Cycle Q Clear(g_c), s	2.3	18.3	18.3	1.1	20.5	20.5	4.1	0.0	1.1	3.1	0.0	2.6
Prop In Lane	1.00		0.06	1.00		0.11	1.00		0.89	1.00		0.95
Lane Grp Cap(c), veh/h	267	760	791	264	729	753	509	0	559	553	0	554
V/C Ratio(X)	0.38	0.71	0.71	0.18	0.78	0.78	0.08	0.00	0.06	0.10	0.00	0.15
Avail Cap(c_a), veh/h	416	979	1019	444	979	1011	509	0	559	553	0	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	17.3	17.3	13.5	18.8	18.8	17.9	0.0	16.0	17.1	0.0	16.5
Incr Delay (d2), s/veh	0.9	1.7	1.6	0.3	3.0	2.9	0.3	0.0	0.2	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	7.2	7.4	0.4	8.3	8.6	0.5	0.0	0.4	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	19.0	18.9	13.8	21.8	21.8	18.2	0.0	16.3	17.4	0.0	17.1
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		1201			1207			76				135
Approach Delay, s/veh		18.6			21.5			17.3				17.2
Approach LOS		B			C			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.6	35.9		30.0	8.9	34.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		6.1	3.1	20.3		5.1	4.3	22.5				
Green Ext Time (p_c), s		0.2	0.0	7.5		0.5	0.1	7.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				19.8								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	6	0	8	10	6	23
Future Vol, veh/h	6	0	8	10	6	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	10	13	8	29

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	62	17	0	0	23	0
Stage 1	17	-	-	-	-	-
Stage 2	45	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	944	1062	-	-	1592	-
Stage 1	1006	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	939	1062	-	-	1592	-
Mov Cap-2 Maneuver	939	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	972	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	1.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1592
HCM Lane V/C Ratio	-	-	0.008	0.005
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

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	1147	29	0	797	45	0	0	8	0	0	29
Future Vol, veh/h	0	1147	29	0	797	45	0	0	8	0	0	29
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1274	32	0	886	50	0	0	9	0	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	936	0	0	1306	0	0	1733	2226	653	1523	2192	443
Stage 1	-	-	-	-	-	-	1290	1290	-	886	886	-
Stage 2	-	-	-	-	-	-	443	936	-	637	1306	-
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	727	-	-	526	-	-	56	43	410	81	45	562
Stage 1	-	-	-	-	-	-	173	232	-	306	361	-
Stage 2	-	-	-	-	-	-	564	342	-	432	228	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	727	-	-	526	-	-	52	43	410	79	45	562
Mov Cap-2 Maneuver	-	-	-	-	-	-	52	43	-	79	45	-
Stage 1	-	-	-	-	-	-	173	232	-	306	361	-
Stage 2	-	-	-	-	-	-	528	342	-	423	228	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			14			11.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	410	727	-	-	526	-	-	562
HCM Lane V/C Ratio	0.022	-	-	-	-	-	-	0.065
HCM Control Delay (s)	14	0	-	-	0	-	-	11.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2



# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/12/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	1004	21	30	709	54	42	3	28	65	3	95
Future Volume (veh/h)	128	1004	21	30	709	54	42	3	28	65	3	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	1116	23	33	788	60	52	4	35	72	3	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	348	1457	30	232	1236	94	511	60	526	580	16	564
Arrive On Green	0.07	0.41	0.41	0.03	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1781	3561	73	1781	3347	255	1284	165	1445	1368	44	1548
Grp Volume(v), veh/h	142	557	582	33	418	430	52	0	39	72	0	109
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1825	1284	0	1610	1368	0	1592
Q Serve(g_s), s	3.4	18.9	18.9	0.8	13.6	13.6	2.0	0.0	1.1	2.5	0.0	3.3
Cycle Q Clear(g_c), s	3.4	18.9	18.9	0.8	13.6	13.6	5.3	0.0	1.1	3.6	0.0	3.3
Prop In Lane	1.00		0.04	1.00		0.14	1.00		0.90	1.00		0.97
Lane Grp Cap(c), veh/h	348	727	760	232	656	674	511	0	586	580	0	580
V/C Ratio(X)	0.41	0.77	0.77	0.14	0.64	0.64	0.10	0.00	0.07	0.12	0.00	0.19
Avail Cap(c_a), veh/h	484	1028	1074	439	1028	1055	511	0	586	580	0	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	17.8	17.8	14.7	18.2	18.2	17.0	0.0	14.5	15.7	0.0	15.2
Incr Delay (d2), s/veh	0.8	2.2	2.1	0.3	1.0	1.0	0.4	0.0	0.2	0.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.4	7.7	0.3	5.3	5.5	0.6	0.0	0.4	0.8	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	20.0	19.9	15.0	19.2	19.2	17.4	0.0	14.7	16.1	0.0	15.9
LnGrp LOS	B	C	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1281			881			91				181
Approach Delay, s/veh		19.3			19.1			16.2				16.0
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.9	33.1		30.0	9.7	30.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		7.3	2.8	20.9		5.6	5.4	15.6				
Green Ext Time (p_c), s		0.3	0.0	7.8		0.8	0.1	5.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.9								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	3	0	1	9	10	18
Future Vol, veh/h	3	0	1	9	10	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	1	11	13	23

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	56	7	0	0	12
Stage 1	7	-	-	-	-
Stage 2	49	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	952	1075	-	-	1607
Stage 1	1016	-	-	-	-
Stage 2	973	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	944	1075	-	-	1607
Mov Cap-2 Maneuver	944	-	-	-	-
Stage 1	1016	-	-	-	-
Stage 2	965	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	944	1607
HCM Lane V/C Ratio	-	-	0.004	0.008
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

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	0	1266	28	0	1237	93	0	0	1	0	0	85
Future Vol, veh/h	0	1266	28	0	1237	93	0	0	1	0	0	85
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1407	31	0	1374	103	0	0	1	0	0	106






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1477	0	0	1438	0	0	2110	2900	719	2078	2812	687
Stage 1	-	-	-	-	-	-	1423	1423	-	1374	1374	-
Stage 2	-	-	-	-	-	-	687	1477	-	704	1438	-
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	452	-	-	468	-	-	29	16	371	31	18	389
Stage 1	-	-	-	-	-	-	143	200	-	153	211	-
Stage 2	-	-	-	-	-	-	403	188	-	394	197	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	452	-	-	468	-	-	21	16	371	31	18	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	21	16	-	31	18	-
Stage 1	-	-	-	-	-	-	143	200	-	153	211	-
Stage 2	-	-	-	-	-	-	293	188	-	393	197	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			14.7			17.7		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	371	452	-	-	468	-	-	389
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	0.273
HCM Control Delay (s)	14.7	0	-	-	0	-	-	17.7
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1.1

HCM 6th Signalized Intersection Summary  
6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1132	31	39	1245	61	38	3	26	107	4	93
Future Volume (veh/h)	77	1132	31	39	1245	61	38	3	26	107	4	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	1258	34	43	1383	68	48	4	32	119	4	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	1690	46	238	1598	78	433	57	453	502	19	485
Arrive On Green	0.05	0.48	0.48	0.04	0.46	0.46	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	3535	95	1781	3448	169	1287	179	1433	1372	60	1535
Grp Volume(v), veh/h	86	632	660	43	711	740	48	0	36	119	0	107
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1840	1287	0	1612	1372	0	1594
Q Serve(g_s), s	2.0	23.2	23.3	1.0	28.9	29.1	2.3	0.0	1.3	5.4	0.0	4.0
Cycle Q Clear(g_c), s	2.0	23.2	23.3	1.0	28.9	29.1	6.3	0.0	1.3	6.6	0.0	4.0
Prop In Lane	1.00		0.05	1.00		0.09	1.00		0.89	1.00		0.96
Lane Grp Cap(c), veh/h	221	850	886	238	824	853	433	0	510	502	0	504
V/C Ratio(X)	0.39	0.74	0.74	0.18	0.86	0.87	0.11	0.00	0.07	0.24	0.00	0.21
Avail Cap(c_a), veh/h	359	892	931	402	892	924	433	0	510	502	0	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	17.0	17.1	13.6	19.4	19.4	22.5	0.0	19.3	21.6	0.0	20.2
Incr Delay (d2), s/veh	1.1	3.3	3.1	0.4	8.3	8.3	0.5	0.0	0.3	1.1	0.0	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	0.8	9.4	9.8	0.4	12.7	13.3	0.7	0.0	0.5	1.8	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	20.3	20.2	14.0	27.7	27.7	23.0	0.0	19.6	22.7	0.0	21.2
LnGrp LOS	B	C	C	B	C	C	C	A	B	C	A	C
Approach Vol, veh/h		1378			1494			84			226	
Approach Delay, s/veh		20.1			27.3			21.5			22.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.6	43.1		30.0	8.8	41.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		8.3	3.0	25.3		8.6	4.0	31.1				
Green Ext Time (p_c), s		0.2	0.0	7.9		0.8	0.1	6.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.7								
HCM 6th LOS				C								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	3	0	5	12	6	8
Future Vol, veh/h	3	0	5	12	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	6	15	8	10

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	40	14	0	0	21
Stage 1	14	-	-	-	-
Stage 2	26	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	972	1066	-	-	1595
Stage 1	1009	-	-	-	-
Stage 2	997	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	967	1066	-	-	1595
Mov Cap-2 Maneuver	967	-	-	-	-
Stage 1	1009	-	-	-	-
Stage 2	992	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	967	1595
HCM Lane V/C Ratio	-	-	0.004	0.005
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

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	900	14	0	845	54	0	0	5	0	0	26
Future Vol, veh/h	0	900	14	0	845	54	0	0	5	0	0	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	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1000	16	0	939	60	0	0	6	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	999	0	0	1016	0	0	1478	2007	508	1439	1955	470
Stage 1	-	-	-	-	-	-	1008	1008	-	939	939	-
Stage 2	-	-	-	-	-	-	470	999	-	500	1016	-
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	689	-	-	678	-	-	88	59	510	94	63	540
Stage 1	-	-	-	-	-	-	258	316	-	284	341	-
Stage 2	-	-	-	-	-	-	543	319	-	521	314	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	689	-	-	678	-	-	83	59	510	93	63	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	59	-	93	63	-
Stage 1	-	-	-	-	-	-	258	316	-	284	341	-
Stage 2	-	-	-	-	-	-	510	319	-	515	314	-






















Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			12.1			12.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	510	689	-	-	678	-	-	540
HCM Lane V/C Ratio	0.011	-	-	-	-	-	-	0.06
HCM Control Delay (s)	12.1	0	-	-	0	-	-	12.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	826	21	27	797	53	44	3	28	52	3	61
Future Volume (veh/h)	57	826	21	27	797	53	44	3	28	52	3	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	918	23	30	886	59	55	4	35	58	3	68
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	1339	34	261	1211	81	584	64	558	616	26	589
Arrive On Green	0.05	0.38	0.38	0.03	0.36	0.36	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	3542	89	1781	3381	225	1329	165	1445	1368	67	1528
Grp Volume(v), veh/h	63	460	481	30	466	479	55	0	39	58	0	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1854	1781	1777	1830	1329	0	1610	1368	0	1595
Q Serve(g_s), s	1.4	14.4	14.4	0.7	15.1	15.1	1.8	0.0	1.0	1.8	0.0	1.9
Cycle Q Clear(g_c), s	1.4	14.4	14.4	0.7	15.1	15.1	3.7	0.0	1.0	2.8	0.0	1.9
Prop In Lane	1.00		0.05	1.00		0.12	1.00		0.90	1.00		0.96
Lane Grp Cap(c), veh/h	279	671	701	261	636	655	584	0	621	616	0	615
V/C Ratio(X)	0.23	0.69	0.69	0.11	0.73	0.73	0.09	0.00	0.06	0.09	0.00	0.12
Avail Cap(c_a), veh/h	469	1089	1136	487	1089	1121	584	0	621	616	0	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	17.3	17.3	13.9	18.5	18.5	14.2	0.0	12.8	13.7	0.0	13.0
Incr Delay (d2), s/veh	0.4	1.3	1.2	0.2	1.6	1.6	0.3	0.0	0.2	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.5	5.8	0.3	5.9	6.1	0.6	0.0	0.4	0.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	18.5	18.5	14.1	20.1	20.0	14.6	0.0	13.0	14.0	0.0	13.4
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		1004			975			94				129
Approach Delay, s/veh		18.2			19.9			13.9				13.7
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.6	29.5		30.0	7.9	28.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		5.7	2.7	16.4		4.8	3.4	17.1				
Green Ext Time (p_c), s		0.3	0.0	6.6		0.5	0.1	6.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.5								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Saddlerock Circle & West Driveway

04/12/2022

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	6	0	3	3	10	19
Future Vol, veh/h	6	0	3	3	10	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	4	4	13	24

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	56	6	0	0	8
Stage 1	6	-	-	-	-
Stage 2	50	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	952	1077	-	-	1612
Stage 1	1017	-	-	-	-
Stage 2	972	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	944	1077	-	-	1612
Mov Cap-2 Maneuver	944	-	-	-	-
Stage 1	1017	-	-	-	-
Stage 2	964	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	944	1612
HCM Lane V/C Ratio	-	-	0.008	0.008
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0



HCM 6th TWSC  
3: Saddlerock Circle & SR89A

04/12/2022

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1142	29	0	1077	69	0	0	3	0	0	45
Future Vol, veh/h	0	1142	29	0	1077	69	0	0	3	0	0	45
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	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	90	90	90	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1269	32	0	1197	77	0	0	3	0	0	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1274	0	0	1301	0	0	1884	2559	651	1832	2498	599
Stage 1	-	-	-	-	-	-	1285	1285	-	1197	1197	-
Stage 2	-	-	-	-	-	-	599	1274	-	635	1301	-
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	541	-	-	528	-	-	43	26	411	47	28	445
Stage 1	-	-	-	-	-	-	174	233	-	197	257	-
Stage 2	-	-	-	-	-	-	455	236	-	433	229	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	541	-	-	528	-	-	38	26	411	47	28	445
Mov Cap-2 Maneuver	-	-	-	-	-	-	38	26	-	47	28	-
Stage 1	-	-	-	-	-	-	174	233	-	197	257	-
Stage 2	-	-	-	-	-	-	397	236	-	429	229	-






















Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			13.8			14.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	411	541	-	-	528	-	-	445
HCM Lane V/C Ratio	0.008	-	-	-	-	-	-	0.126
HCM Control Delay (s)	13.8	0	-	-	0	-	-	14.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

# HCM 6th Signalized Intersection Summary

## 6: SR89A & Soldier Pass Road

04/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	1017	31	42	1048	61	32	3	26	52	4	74
Future Volume (veh/h)	96	1017	31	42	1048	61	32	3	26	52	4	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	1130	34	47	1164	68	40	4	32	58	4	82
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1561	47	256	1452	85	487	60	483	537	25	513
Arrive On Green	0.06	0.44	0.44	0.04	0.43	0.43	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	3522	106	1781	3412	199	1311	179	1433	1372	74	1522
Grp Volume(v), veh/h	107	570	594	47	606	626	40	0	36	58	0	86
Grp Sat Flow(s),veh/h/ln	1781	1777	1851	1781	1777	1835	1311	0	1612	1372	0	1596
Q Serve(g_s), s	2.5	19.9	19.9	1.1	22.5	22.5	1.7	0.0	1.1	2.3	0.0	2.9
Cycle Q Clear(g_c), s	2.5	19.9	19.9	1.1	22.5	22.5	4.5	0.0	1.1	3.4	0.0	2.9
Prop In Lane	1.00		0.06	1.00		0.11	1.00		0.89	1.00		0.95
Lane Grp Cap(c), veh/h	258	788	821	256	756	781	487	0	543	537	0	538
V/C Ratio(X)	0.41	0.72	0.72	0.18	0.80	0.80	0.08	0.00	0.07	0.11	0.00	0.16
Avail Cap(c_a), veh/h	400	951	991	429	951	982	487	0	543	537	0	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	17.3	17.3	13.6	18.9	19.0	19.2	0.0	17.0	18.2	0.0	17.6
Incr Delay (d2), s/veh	1.1	2.2	2.1	0.3	4.0	3.9	0.3	0.0	0.2	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.9	8.2	0.4	9.3	9.6	0.5	0.0	0.4	0.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	19.5	19.4	13.9	22.9	22.8	19.5	0.0	17.3	18.6	0.0	18.2
LnGrp LOS	B	B	B	B	C	C	B	A	B	B	A	B
Approach Vol, veh/h		1271			1279			76			144	
Approach Delay, s/veh		19.1			22.5			18.4			18.4	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.6	38.0		30.0	9.0	36.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		6.5	3.1	21.9		5.4	4.5	24.5				
Green Ext Time (p_c), s		0.2	0.0	7.8		0.6	0.1	7.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				20.6								
HCM 6th LOS				C								



**SADDLE ROCK CROSSING  
SOLDIERS PASS ROAD/STATE ROUTE 89A  
TRAFFIC IMPACT ANALYSIS**

**APPENDIX**

**Approved ADOT TIA Presubmittal Form**

### Exhibit 240-A. Traffic Impact Analysis Pre-Submittal Form

Project Name: Saddle Rock Crossing  
Developer/Owner: Baney Corporation/Curt Baney  
Phone Number: 541.382.2188  
Email: curtb@oxfordsuites.com

Project Location  
State Route (with nearest MP or Street): SR 89 (Soldiers Pass Road, MP 373)  
Local Jurisdiction: Sedona

Stage of Development (choose one)

- Planning/Zoning  Development Plan

Brief Description of Project (land use, intensity, timeframe/phasing)

The project includes the construction of a 5,400 square foot high turnover restaurant, 100 room hotel, 20,000 square feet of specialty retail space, and 12 apartments on undeveloped land on the south side of the Soldiers Pass Road/SR 89a intersection in Sedona, Arizona.

Proposed Access (number, location, restrictions)

The site will be served by five (5) access points. One (1) access point will be located on SR 89 and will align with Soldiers Pass Road. Two (2) access points will be located on Saddle Rock Circle and two (2) will be located on Elk Road.

Preliminary Assumptions (provide as attachment)

- Trip Generation
- Study Horizon Years
- Trip Distribution
- Pass-By Or Internal Capture
- Future Roadway Network
- Study Area Intersections

Traffic Study Type (choose one)

- Transportation Planning Study  
 Traffic Impact Analysis  
 Traffic Impact Statement

Traffic Study Preparer

Firm Name: Southwest Traffic Engineering, LLC  
Contact: Andrew Smigielski PE, PTOE, PTP  
Phone: (602) 266-7983  
Email: smig@swte.us

Pre-Submittal Forms are not required for each project but are a useful tool to reduce the number of submittals/reviews and aid development timeframes. When submitted, Regional Traffic Engineering staff will review and confirm the form in a timely manner. Changes to the above information should be provided in writing. A hard copy of an approved Pre-Submittal Form shall be included in the Study appendix.

Approval by: Robert Lafrenesse Date: 10-30-19



**SADDLE ROCK CROSSING  
SOLDIERS PASS ROAD/STATE ROUTE 89A  
TRAFFIC IMPACT ANALYSIS**

**APPENDIX**

**Comment Resolution**



**Saddle Rock Crossing TIA  
Dated 13 September 2021  
Comment Resolution**

4/13/2022

Item No.	Page No.	Reviewer	Code	Comment	Response
<b>City of Sedona</b>					
1	5 and 26	Sedona	D	Site plan does not show 2 vehicular access points on Elk Rd.	There is no direct access to Elk Road. Elk Road/SR 89a was included in the analysis based on ADOT request. It has now been removed from the analysis. See revised report.
2	General Comment	Sedona	A	The TIA should also analyze the weekend peak hour trips anticipated from the completed development.	Per ADOT direction, this was not required. Per discussion with Sedona, Saturday turning movement counts have been taken at Saddlerock Circle/SR 89 a and Soldiers Pass Road.SR/89. See revised report.
3	14	Sedona	D	Last paragraph – LOS C is the minimum acceptable LOS for W89A	While Sedona's population qualifies the City as 'rural', visitor and regional traffic make the City behave closer to urban operations where LOS D is acceptable and appropriate for such conditions. See revised report.
4	Figures 6, 7, 10, and 11	Sedona	D	We anticipate some site traffic to travel to and from Soldiers Pass Rd and Saddlerock Circle due to the grocery store, commercial businesses and park to the north of 89A. Please revise analysis or justify proposed distribution.	Per discussion with Sedona, 5% of the traffic will be distributed to/from Soldiers Pass Road.
5	General Comment	Sedona	A	Evaluate the effectiveness and need of implementing right-in/right-out movements at intersection of Saddle Rock Circle and SR 89A.	See revised report.
6	15-16	Sedona	A	Evaluate and analyze lane configuration and lane storage requirements at intersection of SR 89A/Solider Pass Road. Traffic should recognize the shift in neighborhood traffic to Solider Pass Road/SR 89A intersection.	See response to Comment 5 and revised report.
7	15-16	Sedona	A	Determine taper lengths.	Se revised report.

A - Will Comply  
B - Consultant to Evaluate  
C - Sedona to Evaluate  
D - See Response