

Traffic Impact Analysis

Redding Distribution Facility Redding, California

DRAFT

August 12, 2021

Prepared for:

42 Redding, LP

Prepared by:

Kimley»Horn

555 Capitol Mall, Suite 300
Sacramento, California 95814

Phone: (916) 858-5800

EXECUTIVE SUMMARY

This report documents the results of a traffic impact study completed for the Distribution Facility project (the “proposed project”, or “project”). The project proposes to construct a Distribution Facility on a currently undeveloped site located south of Electro Way, north of Shasta View Drive, and east of Airport Road and future planned roadway Aviation Drive in the City of Redding, California. Access to the project site is provided at two (2) proposed driveways along Aviation Drive.

This study was performed in accordance with the scopes of work commonly required by City of Redding, and in a manner consistent with City of Redding’s *Traffic Impact Analysis (TIA) Guidelines*.

This evaluation included twenty (20) intersections and three (3) roadway segments as specified by the City.

Based on the study methodology approved by the City, this transportation study was conducted for the study facilities for the following scenarios:

- Existing Year (2021) Conditions
- Opening Year (2022) Conditions
- Opening Year (2022) Plus Project Conditions
- Cumulative Year (2040) Conditions
- Cumulative Year (2040) Plus Project Conditions

Significant findings of this study include:

- The addition of the proposed 250,956 SF distribution facility is estimated to generate 1,086 daily trips, with 176 trips occurring during the AM peak-hour, and 95 trips occurring during the PM peak-hour.
- The addition of the proposed project trips does not result in a significant impact at the evaluated study facilities. Therefore, no mitigation measures are recommended.

TABLE OF CONTENTS

INTRODUCTION	1
PROJECT DESCRIPTION	1
PROJECT AREA ROADWAYS	7
Proposed Project Trip Generation and Assignment	8
TRANSPORTATION STUDY METHODOLOGY	14
Level of Service Definitions	14
Intersection Analysis.....	14
Roadway Segment Analysis.....	14
ANALYSIS SCENARIOS.....	15
Existing Year (2021) Conditions	15
Opening Year (2022) Conditions.....	17
Opening Year (2022) Plus Project Conditions	17
Cumulative Year (2040) Conditions.....	22
Cumulative Year (2040) Plus Project Conditions.....	22
LOS ANALYSIS.....	27
BICYCLE, PEDESTRIAN, AND TRANSIT EVALUATION	33
SITE PLAN, ACCESS, AND CIRCULATION EVALUATION	33
DEFICIENCIES AND IMPROVEMENTS	34
Standards of Deficiency.....	34
Impacts and Mitigation.....	35
CONCLUSIONS	37
APPENDICES	
Trip Generation Data	Appendix A
Turning Movement Count Data Sheets	Appendix B
Supplemental Traffic Data	Appendix C
Reference Material	Appendix D
Intersection Analysis Worksheets for Existing Year (2021) Conditions	Appendix E
Intersection Analysis Worksheets for Opening Year (2022) Conditions	Appendix F
Intersection Analysis Worksheets for Opening Year (2022) Plus Project Conditions.....	Appendix G
Intersection Analysis Worksheets for Cumulative Year (2040) Conditions	Appendix H
Intersection Analysis Worksheets for Cumulative Year (2040) Plus Project Conditions	Appendix I
Roadway Segment Analysis Worksheets.....	Appendix J

LIST OF TABLES

Table 1 – Proposed Project Trip Generation	8
Table 2 – Intersection Level of Service Criteria.....	14
Table 3 – Two-Lane Roadway Segment Level of Service Criteria.....	14
Table 4 – Super 8 Motel Trip Generation.....	15
Table 5 – Intersection Control.....	27
Table 6 – Intersection Level of Service Analysis.....	29
Table 7 – Roadway Segment Level of Service Analysis	31

LIST OF FIGURES

Figure 1 – Study Area Facilities	2
Figure 2 – Proposed Project Site Plan.....	3
Figure 3a – Existing Year (2021) Lane Configuration and Control.....	4
Figure 3b – Existing Year (2021) Lane Configuration and Control	6
Figure 4a – Global Project Trip Distribution	9
Figure 4b – Opening Year (2022) Project Trip Distribution	10
Figure 4c – Cumulative Year (2040) Project Trip Distribution.....	11
Figure 5a – Opening Year (2022) Project Traffic Assignment.....	12
Figure 5b – Cumulative Year (2040) Project Traffic Assignment.....	13
Figure 6 – Existing (2021) AM and PM Peak-Hour Traffic Volumes	16
Figure 7 – Opening Year (2022) Lane Configuration and Control	18
Figure 8 – Opening Year (2022) AM and PM Peak-Hour Traffic Volumes	19
Figure 9 – Opening Year (2022) Plus Project Lane Configuration and Control.....	20
Figure 10 – Opening Year (2022) Plus Project AM and PM Peak-Hour Traffic Volumes.....	21
Figure 11 – Cumulative Year (2040) Lane Configuration and Control	22
Figure 12 – Cumulative Year (2040) AM and PM Peak-Hour Traffic Volumes	24
Figure 13 – Cumulative Year (2040) Plus Project Lane Configuration and Control.....	25
Figure 14 – Cumulative Year (2040) Plus Project AM and PM Peak-Hour Traffic Volumes.....	26

INTRODUCTION

This report documents the results of a traffic impact study completed for the Distribution Facility project (the “proposed project”, or “project”). The project proposes to construct a Distribution Facility on a currently undeveloped site located south of Electro Way, north of Shasta View Drive, and east of Airport Road and future planned roadway Aviation Drive in the City of Redding, California. Access to the project site is provided at two (2) proposed driveways along Aviation Drive.

This study was performed in accordance with the scopes of work commonly required by City of Redding, and in a manner consistent with City of Redding’s *Traffic Impact Analysis (TIA) Guidelines*¹. The remaining sections of this report document the proposed project; analysis methodologies; intersection and roadway segment LOS analyses; bicycle, pedestrian, and transit evaluation; site plan, access, and circulation evaluation; deficiencies and improvements; and general study conclusions.

PROJECT DESCRIPTION

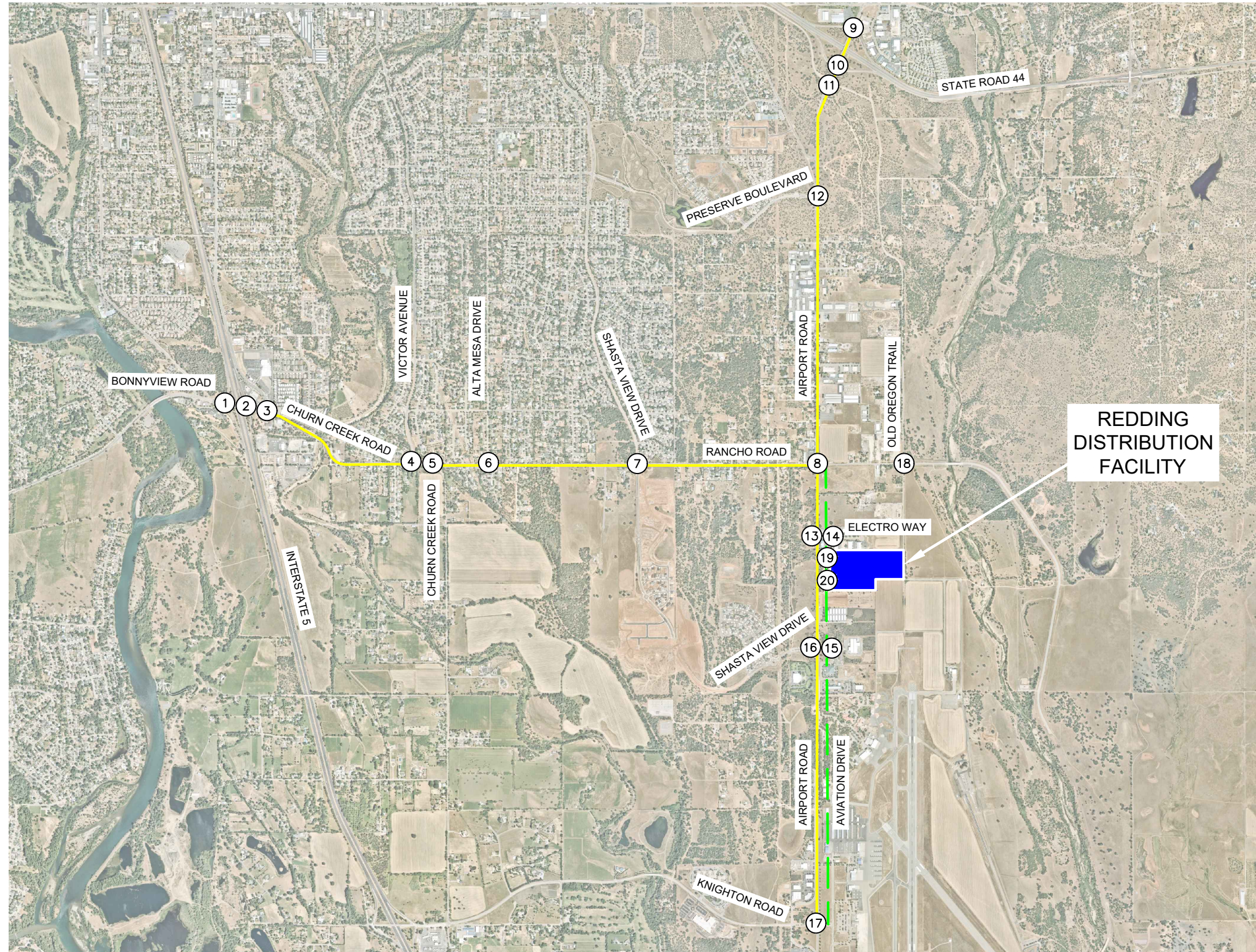
The project proposes to construct a Distribution Facility on a currently undeveloped site located south of Electro Way, north of Shasta View Drive, and east of Airport Road and future planned roadway Aviation Drive in Redding, California. The project site is located within APNs 054200002000 and 054210006000. Access to the project site is provided at two (2) proposed driveways along Aviation drive. The project location is shown in **Figure 1** and an overview of the project site plan is shown in **Figure 2**. The following transportation facilities are included in this evaluation:

Intersections

1. South Bonnyview Road @ I-5 SB Ramps
2. South Bonnyview Road @ I-5 NB Ramps
3. South Bonnyview Road @ Churn Creek Road
4. Churn Creek Road @ Victor Avenue
5. Churn Creek Road @ Rancho Road
6. Rancho Road @ Alta Mesa Drive
7. Rancho Road @ Shasta View Drive
8. Rancho Road @ Airport Road
9. Airport Road @ SR-44 WB Ramps
10. Airport Road @ SR-44 EB Ramps
11. Airport Road @ Hartnell Avenue
12. Airport Road @ Preserve Boulevard
13. Airport Road @ Electro Way
14. Aviation Drive @ Electro Way
15. Aviation Drive @ Shasta View Drive
16. Airport Road @ Shasta View Drive
17. Airport Road @ Knighton Road
18. Rancho Road @ Old Oregon Trail*
19. Aviation Drive @ Site Access Driveway (North)
20. Aviation Drive @ Site Access Driveway (South)

**As secondary access to the site is not planned to be accomplished via Old Oregon Trail, project traffic is not anticipated to impact this intersection. Thus, the intersection will not be analyzed.*

¹ *Traffic Impact Analysis Guidelines*, City of Redding, January 2009.



SOURCE: NEARMAP US, INC.

REDDING DISTRIBUTION FACILITY STUDY AREA FACILITIES

STUDY INTERSECTIONS

1. South Bonnyview Road @ I-5 SB Ramps
2. South Bonnyview Road @ I-5 NB Ramps
3. South Bonnyview Road @ Churn Creek Road
4. Churn Creek Road @ Victor Avenue
5. Churn Creek Road @ Rancho Road
6. Rancho Road @ Alta Mesa Drive
7. Rancho Road @ Shasta View Drive
8. Rancho Road @ Airport Road
9. Airport Road @ SR-44 WB Ramps
10. Airport Road @ SR-44 EB Ramps
11. Airport Road @ Hartnell Avenue
12. Airport Road @ Preserve Boulevard
13. Airport Road @ Electro Way
14. Aviation Drive @ Electro Way
15. Aviation Drive @ Shasta View Drive
16. Airport Road @ Shasta View Drive
17. Airport Road @ Knighton Road
18. Rancho Road @ Old Oregon Trail*
19. Aviation Drive @ Site Access Driveway (North)
20. Aviation Drive @ Site Access Driveway (South)

*As secondary access to the site will not be accomplished via Old Oregon Trail, project traffic is not anticipated to impact this intersection. Thus, the intersection will not be analyzed.

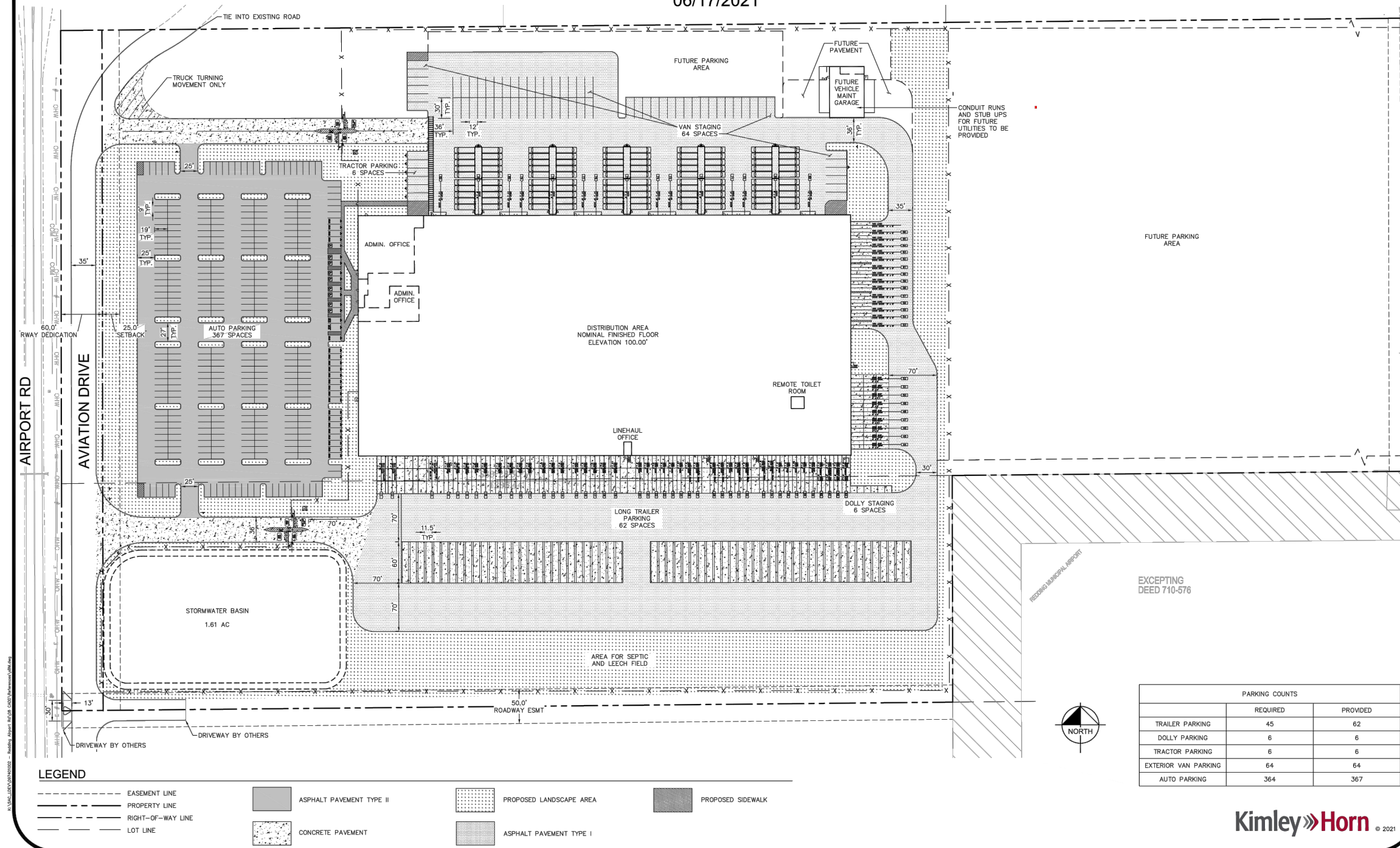
STUDY ROADWAY SEGMENTS

1. Churn Creek Road,
between South Bonnyview Road and Victor Avenue
2. Rancho Road,
between Churn Creek Road and Airport Road
3. Airport Road,
between SR-44 and Knighton Road

LEGEND:

- | | |
|---|------------------------|
| ① | Study Intersection |
| | Study Roadway Segment |
| | Future Planned Roadway |

CONCEPTUAL SITE PLAN
REDDING
06/17/2021



REDDING DISTRIBUTION FACILITY SITE PLAN

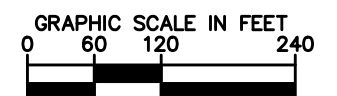


FIGURE 2
—Kimley»Horn—^{© 2021}

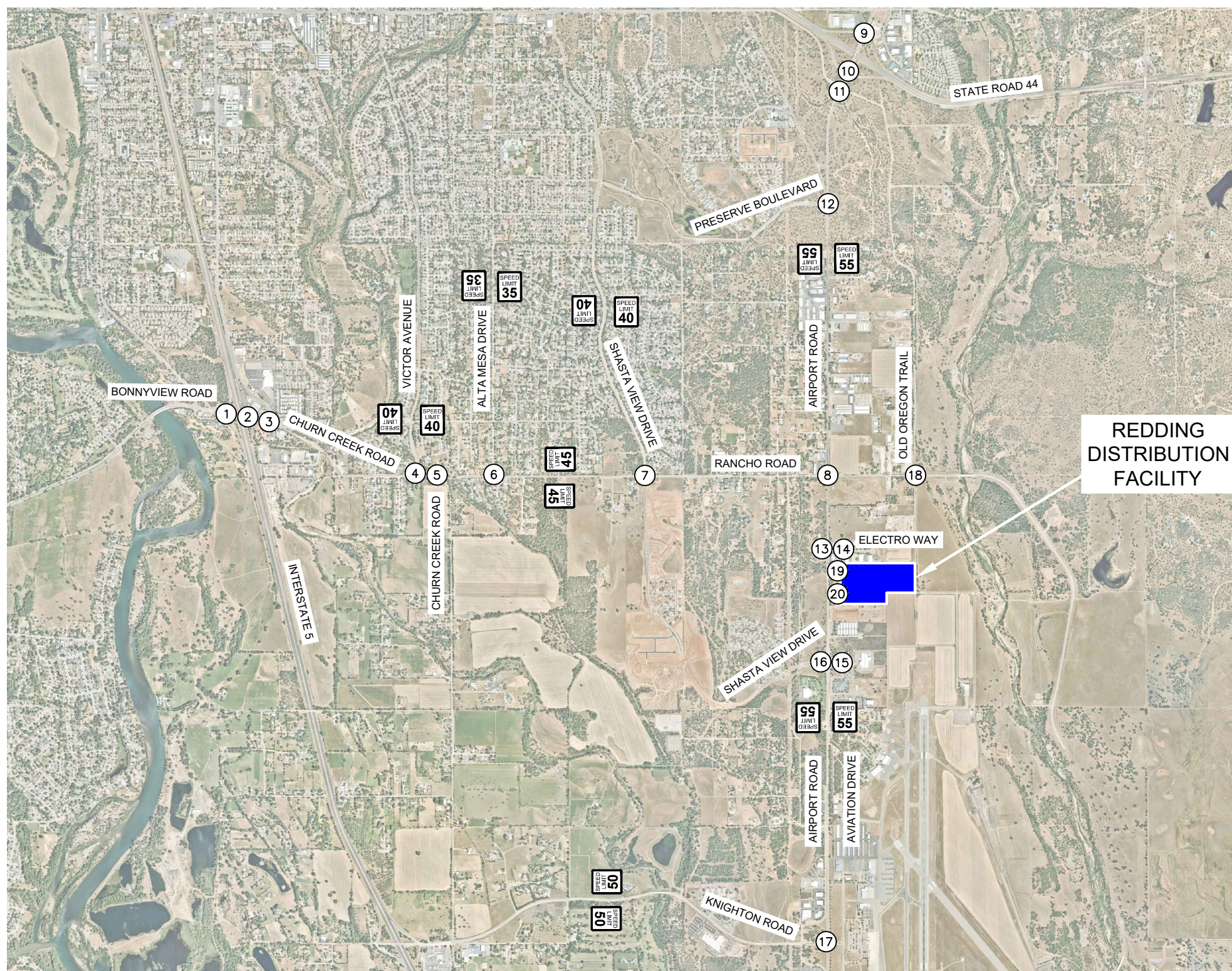
Roadway Segments:

1. Churn Creek Road, between South Bonnyview Road and Victor Avenue
2. Rancho Road, from Churn Creek to Airport Road
3. Airport Road, between SR-44 and Knighton Road

Based on the City's requirements, this transportation study was conducted for the study facilities for the following scenarios:

- Existing Year (2021) Conditions
- Opening Year (2022) Conditions
- Opening Year (2022) Plus Project Conditions
- Cumulative Year (2040) Conditions
- Cumulative Year (2040) Plus Project Conditions

Figure 3a and **Figure 3b** illustrate the study facilities, existing traffic control, and existing lane configurations.



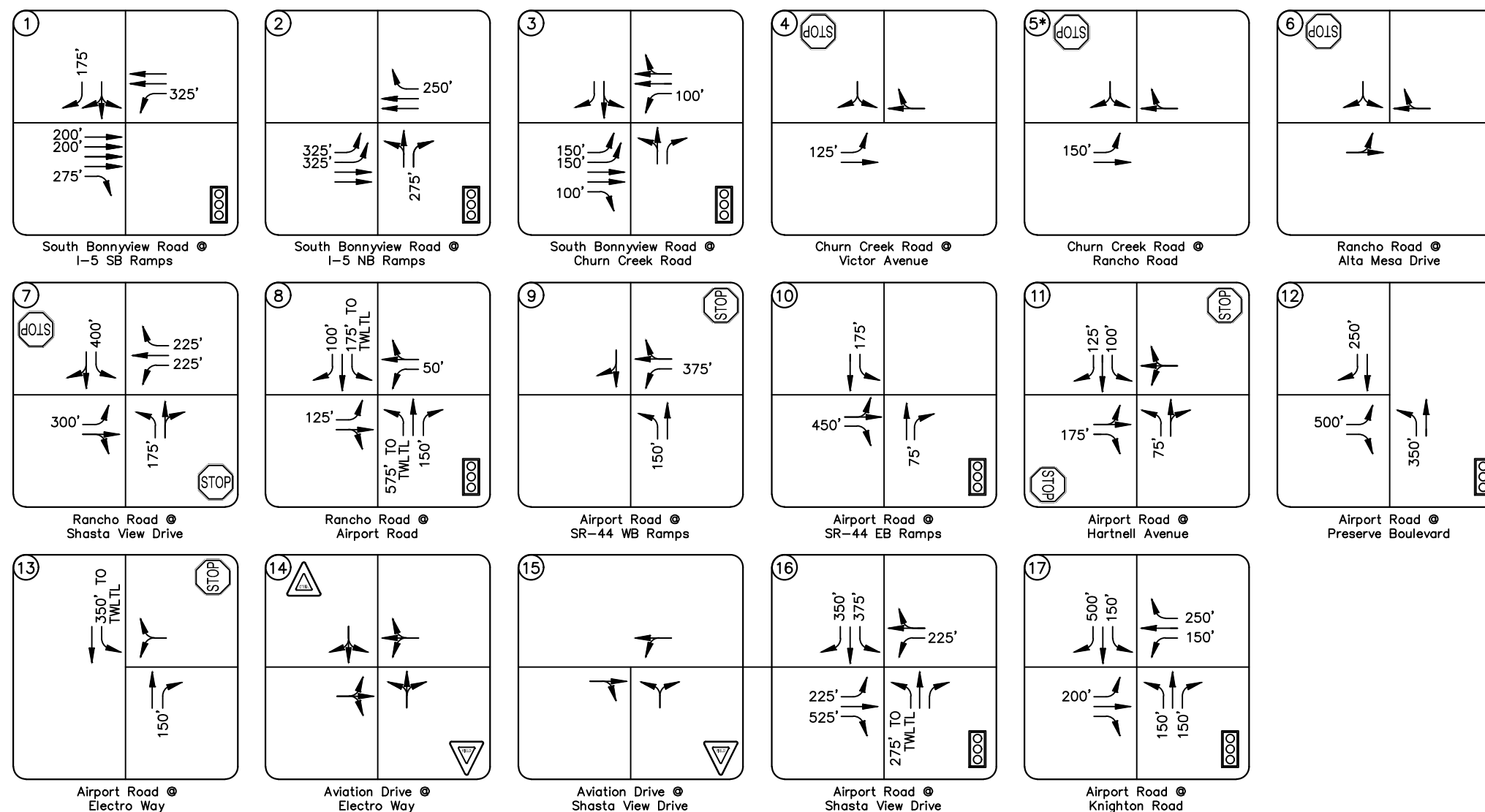
SOURCE: NEARMAP US, INC.

REDDING DISTRIBUTION FACILITY EXISTING YEAR (2021) LANE CONFIGURATION AND CONTROL

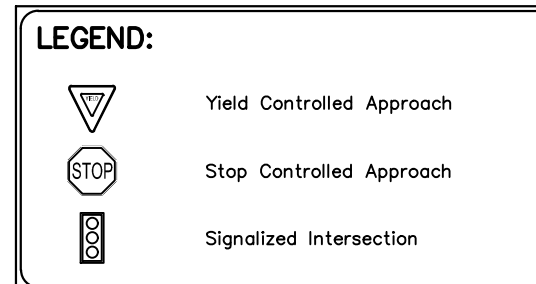
LEGEND:

- ① Study Area Key Intersection
- Ⓐ Project Access Drive
-  Roadway Speed Limit

FIGURE 3a



*It should be noted that the Churn Creek Road/Rancho Road (#5) intersection is modeled as a three-legged intersection with north, east, and west legs.



REDDING DISTRIBUTION FACILITY EXISTING YEAR (2021) LANE CONFIGURATION AND CONTROL

PROJECT AREA ROADWAYS

The following are descriptions of the primary roadways in the vicinity of the project:

Interstate 5 (I-5) is a major north-south interstate that runs through California, Oregon, and Washington. Within Shasta County, the interstate provides connectivity to State Route 44 and State Route 299. Within the study area, Interstate 5 provides access to Churn Creek Road/Bonnyview Road, Knighton Road, and State Route 44.

State Route 44 (SR-44) is an east-west freeway/expressway that runs from Interstate 5 to State Route 89 to the east within Shasta County and connects to Airport Road.

Bonnyview Road is a four-lane minor arterial that continues west from Churn Creek Road at Interstate 5 and connects to State Route 273.

Churn Creek Road is a two to four-lane north-south minor arterial roadway that runs from State Route 299 to Knighton Road. Churn Creek Road runs east-west between Bonnyview Road and Rancho Road.

Rancho Road is an east-west minor arterial roadway that runs from Churn Creek Road to Venture Parkway. The two-lane provides connectivity to Airport Road.

Airport Road is a two-lane north-south minor arterial that runs from State Route 44 to Interstate 5. The minor arterial connects to Rancho Road, Churn Creek Road, Knighton Road, and Interstate 5.

Aviation Drive is a future planned collector roadway that will run parallel to Airport Road. Access to the proposed project site is planned to be provided by Aviation Drive.

Electro Way is a planned two-lane east-west local road that will provide connectivity to the project site. Currently, Electro Way is approximately 0.2 miles long and has a direct connection to Airport Road.

Knighton Road is a two-lane east-west minor arterial runs from Southwood Lake Drive to Municipal Boulevard. The roadway provides connectivity to Airport Road, Churn Creek Road, and Interstate 5.

Hartnell Avenue is a two-lane east-west minor arterial roadway. Hartnell Avenue runs from Cypress Avenue to State Route 44.

Old Oregon Trail is a two-lane major collector that runs north-south. Old Oregon Trail connects directly to the State Route 44, Airport Road, and Hartnell Avenue.

Shasta View Drive is a north-south minor arterial that runs from College View Drive to roughly 0.2 miles south of San Pablo Street. The roadway is planned to connect through to Airport Road from Rancho Road as a local roadway servicing various residential developments. Shasta View Drive connects to Rancho Road, Hartnell Avenue, and State Route 44.

Preserve Boulevard is a two-lane east-west local road. Preserve Boulevard runs from Thomason Trail to Airport Road.

Alta Mesa Drive is a north-south two-lane major collector roadway. Alta Mesa Drive begins at Hartnell Avenue and runs south to Rancho Road.

Victor Avenue is a north-south two to three-lane minor arterial that runs from Old Alturas Road to Churn Creek Road. Victor Avenue connects to Hartnell Avenue, Cypress Avenue, and State Route 44.

Proposed Project Trip Generation and Assignment

Based on information provided by the client, the proposed distribution facility is anticipated to have higher trip generation characteristics than what is indicated by the Institute of Transportation Engineers' (ITE) *Trip Generation, 10th Edition*. Therefore, to be more conservative, client-provided trip counts based on expected operations and comparable facilities were used in lieu of ITE trip generation calculations.

The proposed development is anticipated to generate 1,086 daily trips with 176 AM and 95 PM peak-hour trips, as summarized in **Table 1**. Client-provided trip generation data as used in this study are included in **Appendix A**.

Table 1 – Proposed Project Trip Generation

Description	Size (KSF)	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	In		Out		Total Trips	In		Out	
				%	Trips	%	Trips		%	Trips	%	Trips
Distribution Facility*	250,956	1,086	176	34%	59	66%	117	95	46%	44	54%	51
*Source: Client-provided trip generation estimates based on comparable facilities and expected operations.												

Project traffic was distributed and assigned to the roadway network based on local understanding of vehicular patterns in the study area and professional judgment. The proposed project trip AM and PM distribution percentages are provided in **Figure 4a**, **Figure 4b**, and **Figure 4c**. The assignment of AM and PM peak-hour project trips for the proposed project is depicted in **Figure 5a** and **Figure 5b**.

The Opening Year (2022) distribution and assignment differ slightly from the Cumulative Year (2040) distribution and assignment as future planned roadway Aviation Drive is anticipated to be built out and serve project traffic in Cumulative Year (2040) scenarios, but not in Opening Year (2022) scenarios.

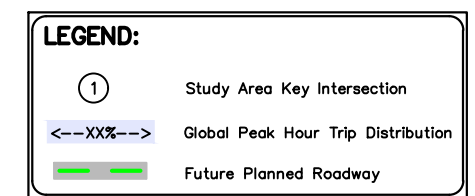
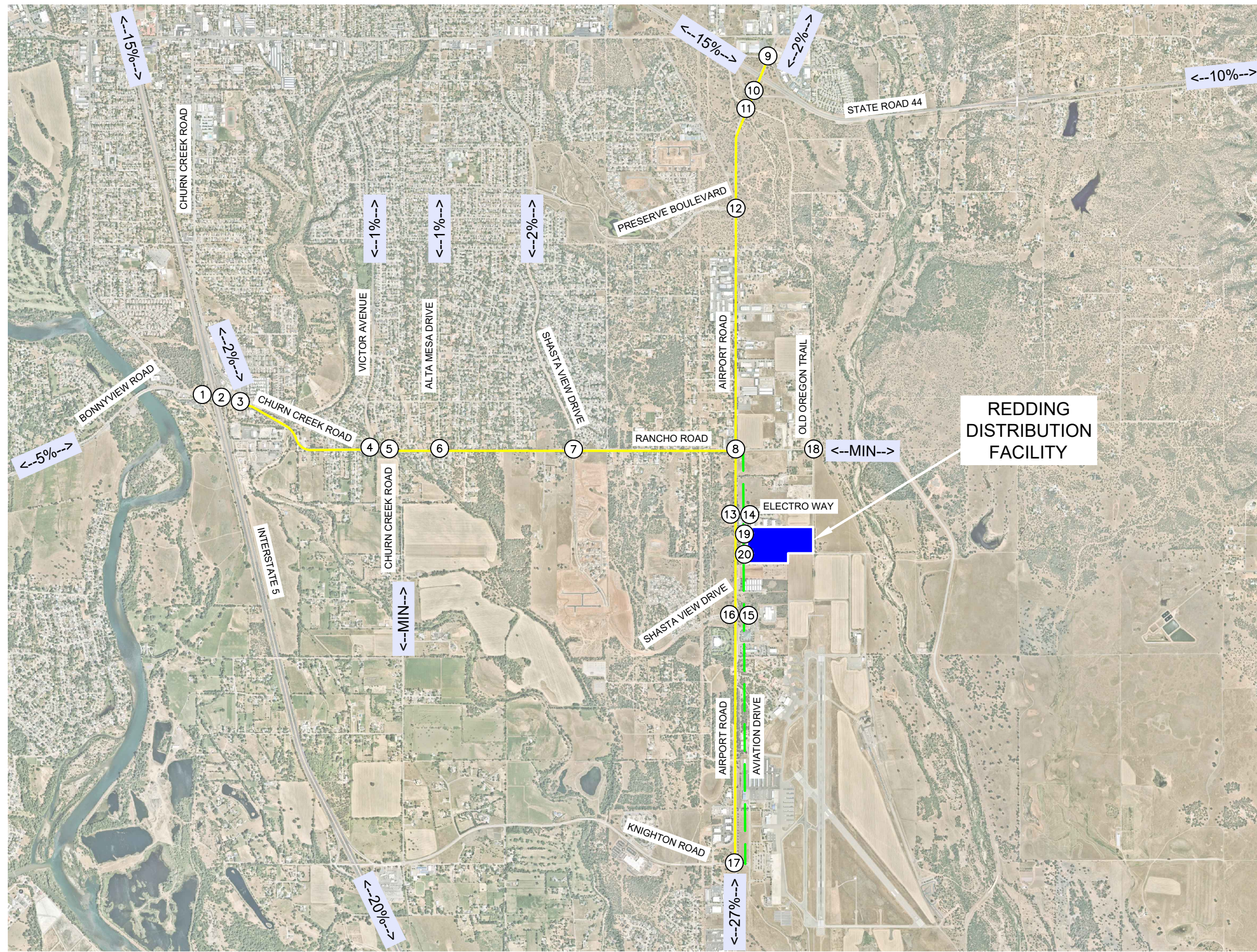
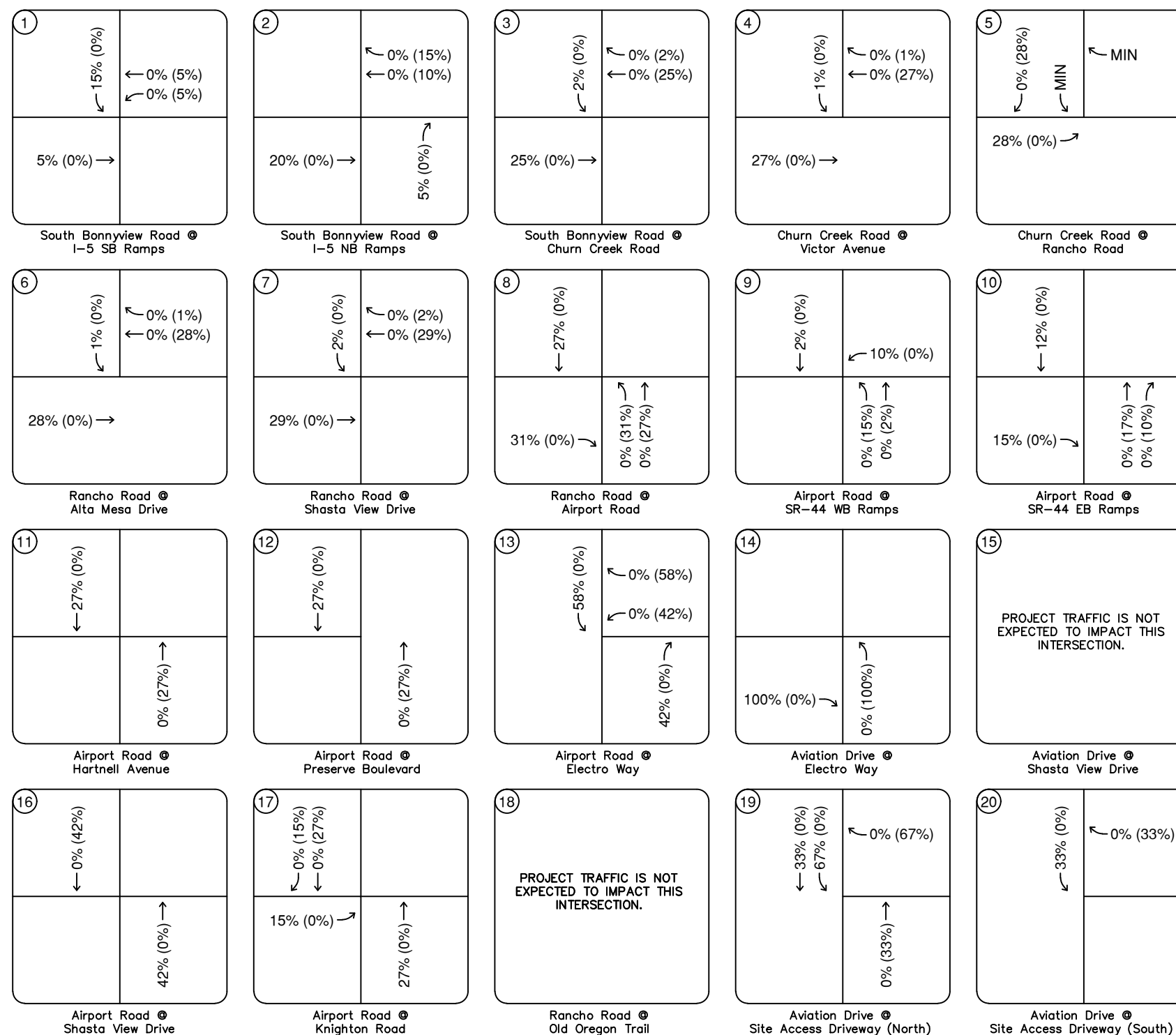


FIGURE 4a

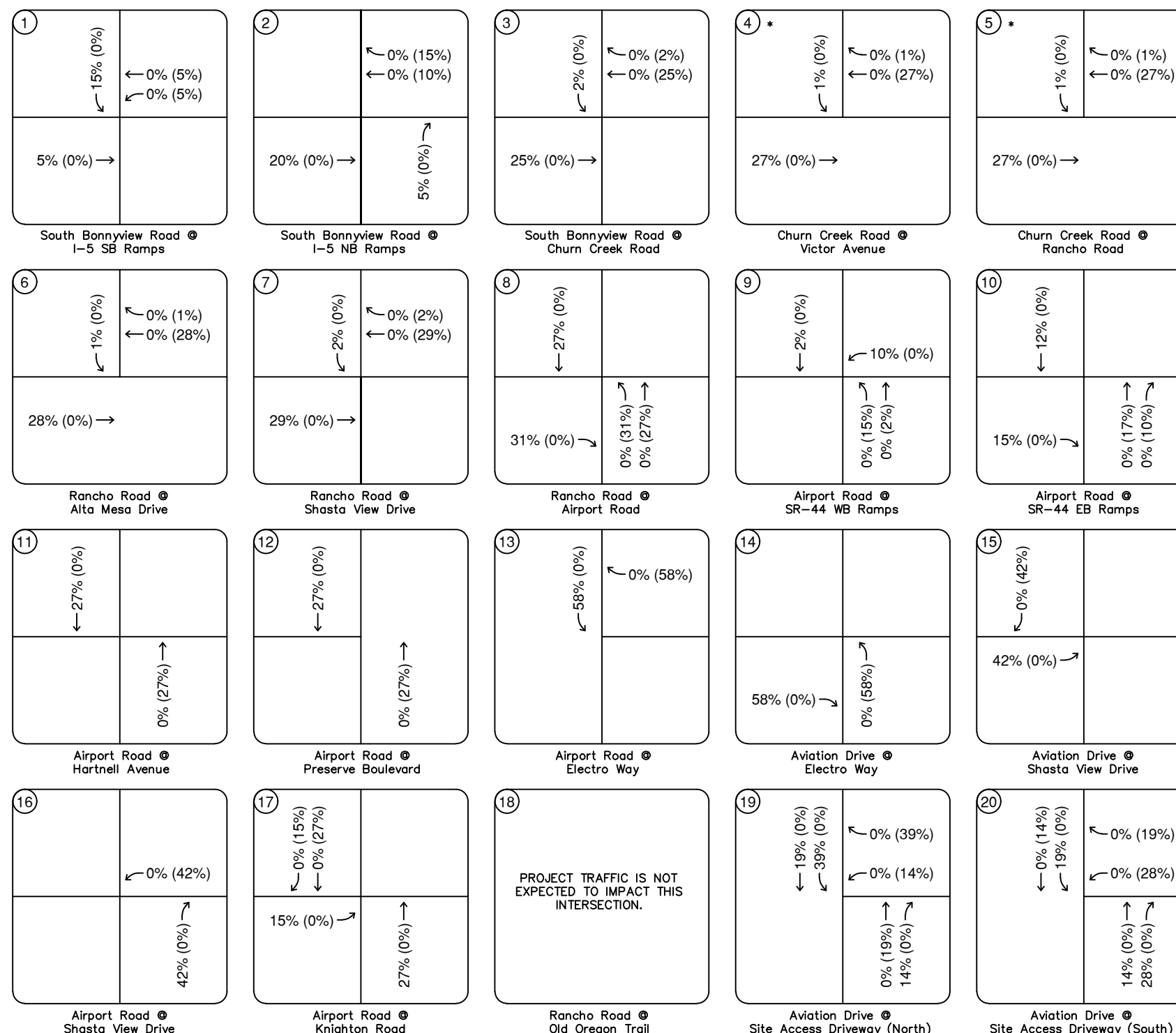
Kimley»Horn ©2021



LEGEND:

- ① Study Area Key Intersection
- Ⓐ Project Access Drive
- ← XX% (XX%) IN(OUT) Peak Hour Trip Distribution

REDDING DISTRIBUTION FACILITY
OPENING YEAR 2022 PROJECT TRIP DISTRIBUTION



*The Churn Creek Road/Victor Avenue (#4) and Churn Creek Road/Rancho Road (#5) intersections are planned to be combined into one (1) single-lane roundabout. The trip distribution shown for both Intersection #4 and Intersection #5 reflects the trip distribution for the planned roundabout.

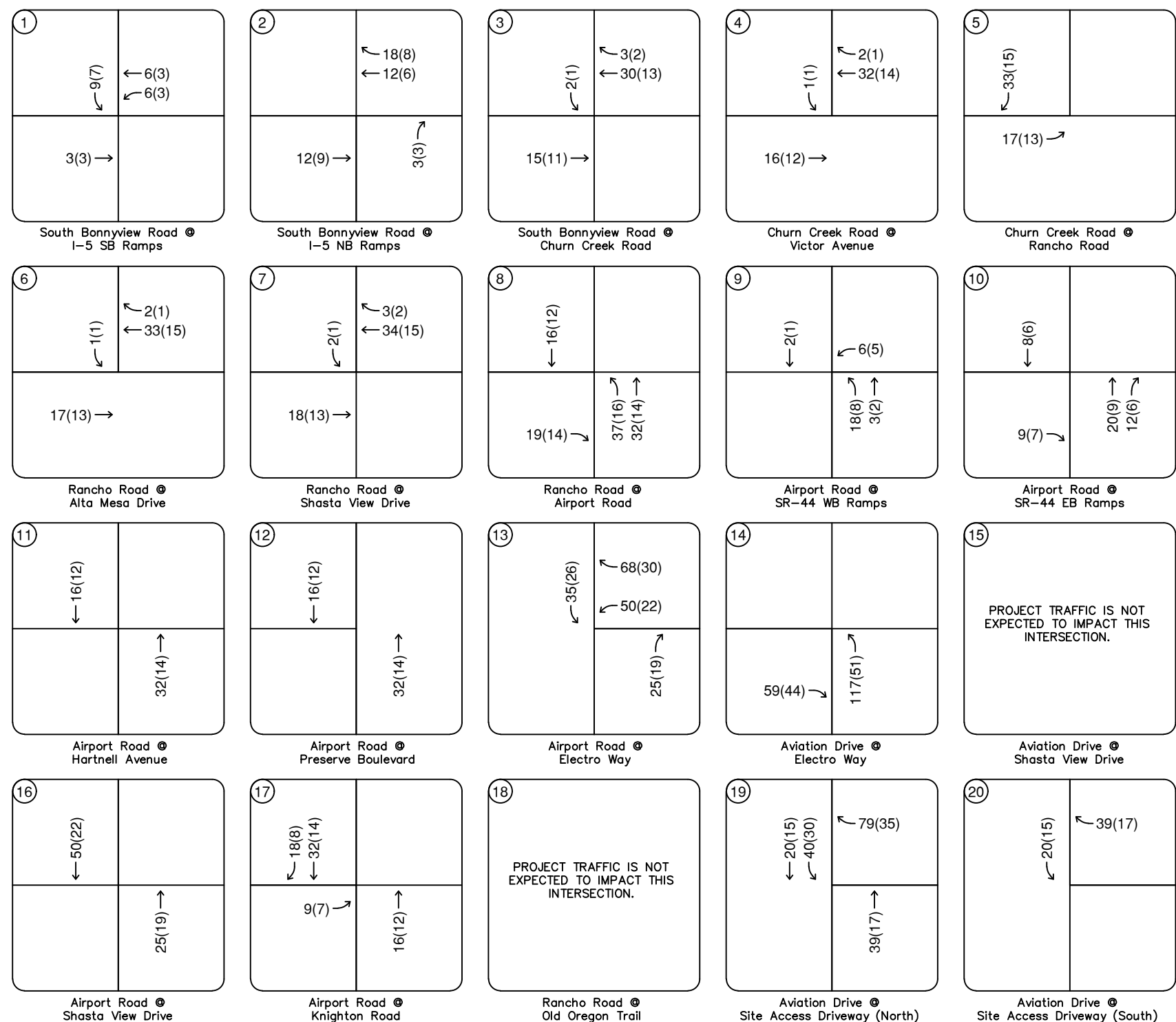
LEGEND:

① Study Area Key Intersection

Ⓐ Project Access Drive

← XX%(XX%) IN(OUT) Peak Hour Trip Distribution

REDDING DISTRIBUTION FACILITY CUMULATIVE YEAR 2040 PROJECT TRIP DISTRIBUTION

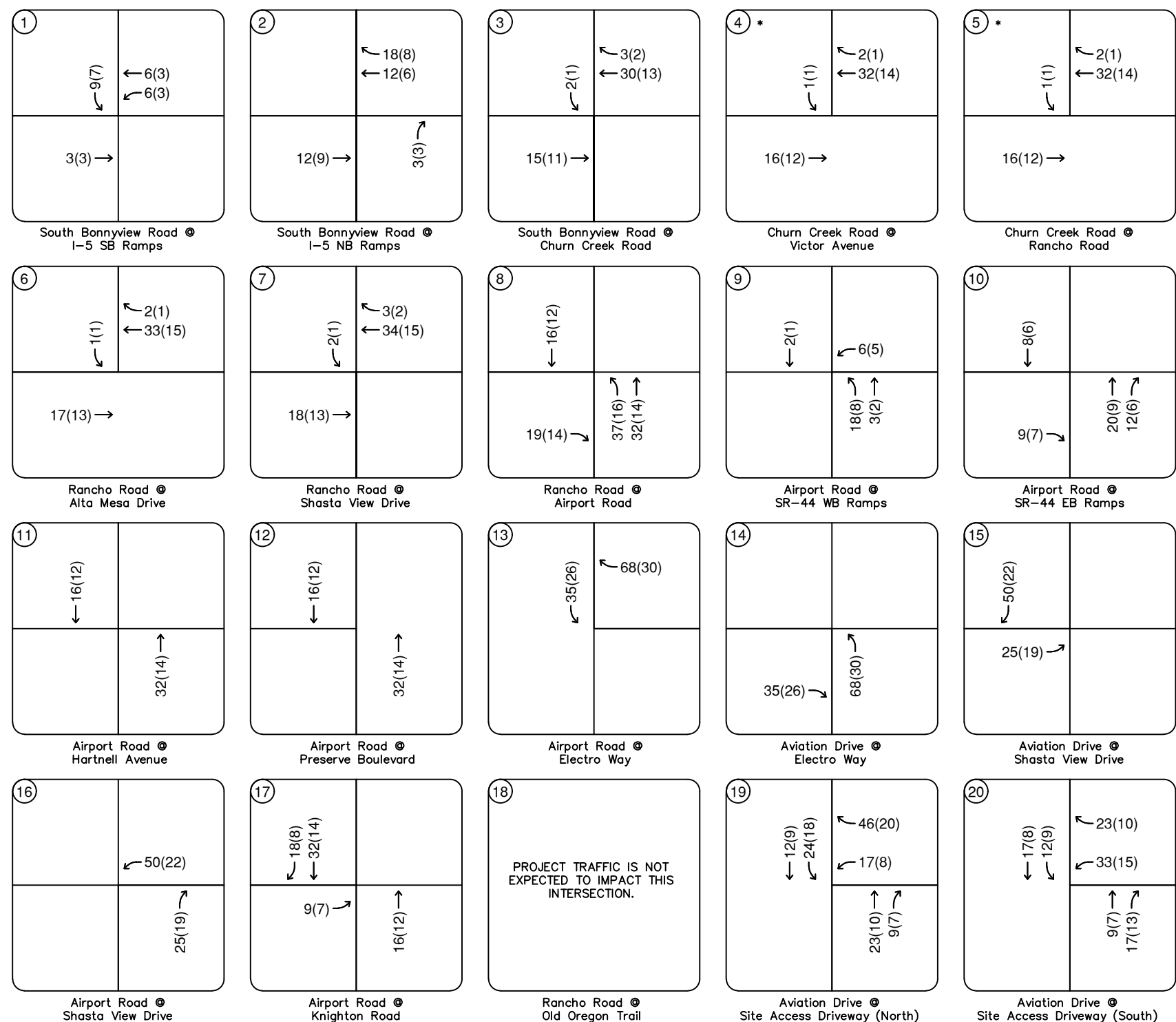


LEGEND:

① Study Area Key Intersection

←XX(X) AM(PM) Peak Hour Traffic Volumes

REDDING DISTRIBUTION FACILITY
OPENING YEAR 2022 PROJECT TRIP ASSIGNMENT



*The Churn Creek Road/Victor Avenue (#4) and Churn Creek Road/Rancho Road (#5) intersections are planned to be combined into one (1) single-lane roundabout. The trip assignment shown for both Intersection #4 and Intersection #5 reflects the trip assignment for the planned roundabout.

LEGEND:

① Study Area Key Intersection

←XX(X) AM(PM) Peak Hour Traffic Volumes

REDDING DISTRIBUTION FACILITY CUMULATIVE YEAR 2040 PROJECT TRIP ASSIGNMENT

TRANSPORTATION STUDY METHODOLOGY

This transportation study was performed in accordance with the City of Redding's *TIA Guidelines*.

Level of Service Definitions

The level of service (LOS) of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A, which represents minimal delay, to F, which represents heavy delay and a facility that is operating at or near its functional capacity. LOS for this study was determined using methods defined in the *Highway Capacity Manual (HCM) 6th Edition*.

Intersection Analysis

The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection. **Table 2** presents intersection LOS definitions as defined in the HCM.

Table 2 – Intersection Level of Service Criteria

Level of Service (LOS)	Un-Signalized	Signalized
	Average Control Delay* (sec/veh)	Average Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: *Highway Capacity Manual, 6th Edition*

* Applied to the worst lane/lane group(s) for SSSC

LOS for the study intersections was determined using the Synchro 11® traffic analysis software. Synchro 11 is an interactive computer program that enables planners and engineers to forecast the traffic impacts of new developments, conduct area-wide traffic forecasting studies, test different mitigation measures and compare different traffic scenarios. Synchro 11 utilizes HCM 6 methodology to analyze intersection delay and LOS. SimTraffic microsimulation was used to analyze intersections in close proximity to each other.

Roadway Segment Analysis

The LOS criteria for roadway segments, as defined by the City of Redding's *TIA Guidelines*, is presented in **Table 3**.

Table 3 – Two-Lane Roadway Segment Level of Service Criteria

Roadway Type	Maximum Peak Hour Volume Per Lane				
	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway-High Access Control	570	660	760	850	950
Expressway-Moderate Access Control	520	610	700	790	870
Divided Arterial (w/ LTL)	500	560	650	730	810
Undivided Arterial (no LTL)	410	470	540	610	680
Collector	270	340	410	470	540

Source: *City of Redding TIA Guidelines*

ANALYSIS SCENARIOS

As described in the following sections, the LOS analysis was conducted for the study facilities for the following scenarios:

- Existing Year (2021) Conditions
- Opening Year (2022) Conditions
- Opening Year (2022) Plus Project Conditions
- Cumulative Year (2040) Conditions
- Cumulative Year (2040) Plus Project Conditions

Existing Year (2021) Conditions

In order to determine the existing conditions at the study area facilities, existing peak-hour traffic counts were needed. Various traffic count data were provided by the City, including April 2021 traffic counts for the following intersections:

- Airport Road @ SR-44 WB Ramps (#9)
- Airport Road @ SR-44 EB Ramps (#10)
- Airport Road @ Hartnell Avenue (#11)

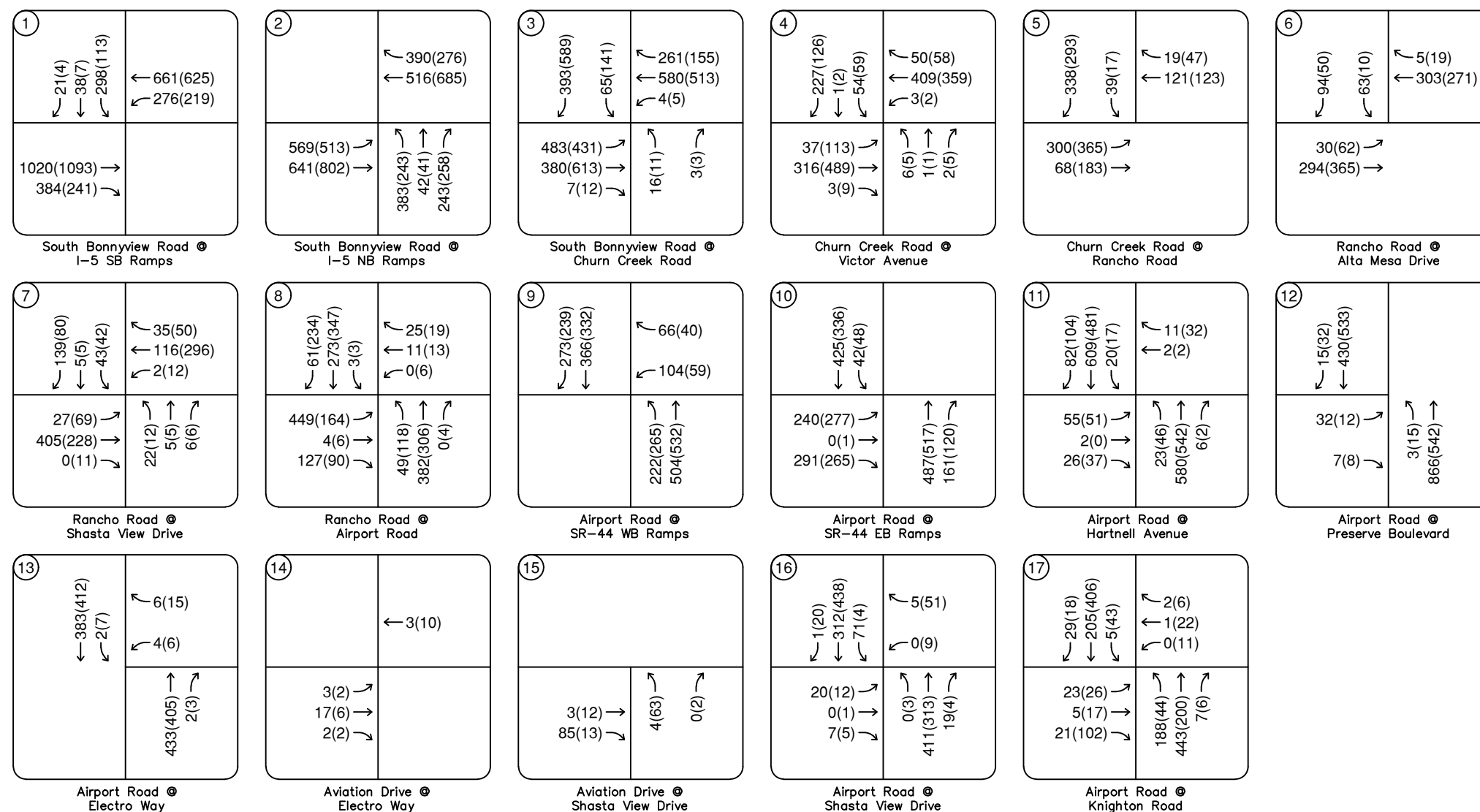
Traffic counts for the remaining study area intersections were obtained from StreetLight Data, a Big Data tool that provides validated and calibrated traffic data based on location records from smart phones and vehicle navigation devices. The data was collected as an average from each Tuesday through Thursday in January and February 2020 (due to the COVID-19 pandemic), and then linearly grown to 2021 using the Shasta County Regional Travel Demand Model (SCRTDF). Traffic counts provided by the City as well as counts obtained from StreetLight Data are included in **Appendix B**. Existing Year (2021) AM and PM peak-hour traffic volumes are presented in **Figure 6**.

Due to the nature of StreetLight Data and the processing of geospatial trips into turning movement volumes, intersection approaches for a small driveway or for a recently constructed roadway are not reflected in the street layer used to route vehicles through the study area. In this case the south leg of South Bonnyview Road @ Churn Creek (#3) and the south leg of Rancho Road @ Shasta View Drive (#7) fit this description.

The south leg at South Bonnyview Road @ Churn Creek Road (#3) serves a Super 8 motel. The motel is estimated to have 80 rooms and generate trips as shown in **Table 4**. Turning movement counts were estimated (based on the distribution of trips indicated by the north leg of the intersection) to and from the south leg. As a result, volumes were manually input for the northbound left, northbound right, eastbound right, and westbound left movements. Northbound through and southbound through volumes are assumed to be minimal, so the northbound through and southbound through volumes were left at zero (0).

Table 4 – Super 8 Motel Trip Generation

Description	Estimated Size (Rooms)	AM Peak-Hour					PM Peak-Hour				
		Total Trips	In		Out		Total Trips	In		Out	
			%	Trips	%	Trips		%	Trips	%	Trips
Super 8 Motel	80	30	37%	11	63%	19	30	53%	16	47%	14



LEGEND:

① Study Area Key Intersection

← XX(X) AM(PM) Peak Hour Traffic Volumes

REDDING DISTRIBUTION FACILITY EXISTING YEAR (2021) PEAK-HOUR TRAFFIC VOLUMES

FIGURE 6
Kimley»Horn

The south leg at Rancho Road and Shasta View Drive (#7) serves residential land use. For conservative analysis, volumes at this leg are assumed to be equivalent to volumes at the west leg of Airport Road and Shasta View Drive (#16). The distribution of these volumes was assumed to reciprocate the distribution of vehicles indicated by the north leg of Intersection #7. As a result, volumes were input for the northbound left, northbound right, eastbound right, and westbound left movements. As there was only one (1) inbound car to the west leg of Intersection #16 in the AM peak-hour, the one (1) car was added to the westbound left volume and the eastbound right volume remained at zero (0). Additionally, five (5) vehicles instead of zero (0) vehicles were assumed for the northbound through and southbound through volumes in both the AM and PM peak-hour.

While StreetLight Data is already normalized and calibrated to a national database of automatic traffic counters based on roadway classification, land use setting, location, and other factors – the data platform also allows for localized ADT data to be used in a single-factor calibration of StreetLight device index counts. Available ADT data within the study area (included in **Appendix C**) were used in calibrating the data. Location based weighting taking into account roadway characteristics and seasonal variation was applied to the raw counts based on these ADT volumes. Calibrated turning movement volumes produced by StreetLight were then compared to raw volume estimates before use in this study. After verifying accurate weighting and calibration by the platform, the calibrated turning movement volumes were used to represent Existing Year (2021) peak-hour traffic volumes.

Opening Year (2022) Conditions

The roadway geometry and traffic control shown in **Figure 7** was used for this scenario. The roadway geometry and traffic control for this scenario incorporates improvements identified in the City of Redding *Capital Improvement Plan (CIP)*² that are expected to be completed in 2022. Specific improvements were analyzed as shown in the *Airport Road Widening Study*³ and *Bonnyview Interchange (Exit 675) Improvements Study*⁴ (excerpts are included in **Appendix D**).

Opening Year (2022) traffic counts were obtained by linearly interpolating between models. This scenario assumes that the adjacent projects to the south of the project site do not develop and that the proposed project is required to gain access entirely using Electro Way. This scenario includes the Stonecreek Subdivision as a cumulative project. Opening Year (2022) AM and PM peak-hour traffic volumes are presented in **Figure 8**.

Opening Year (2022) Plus Project Conditions

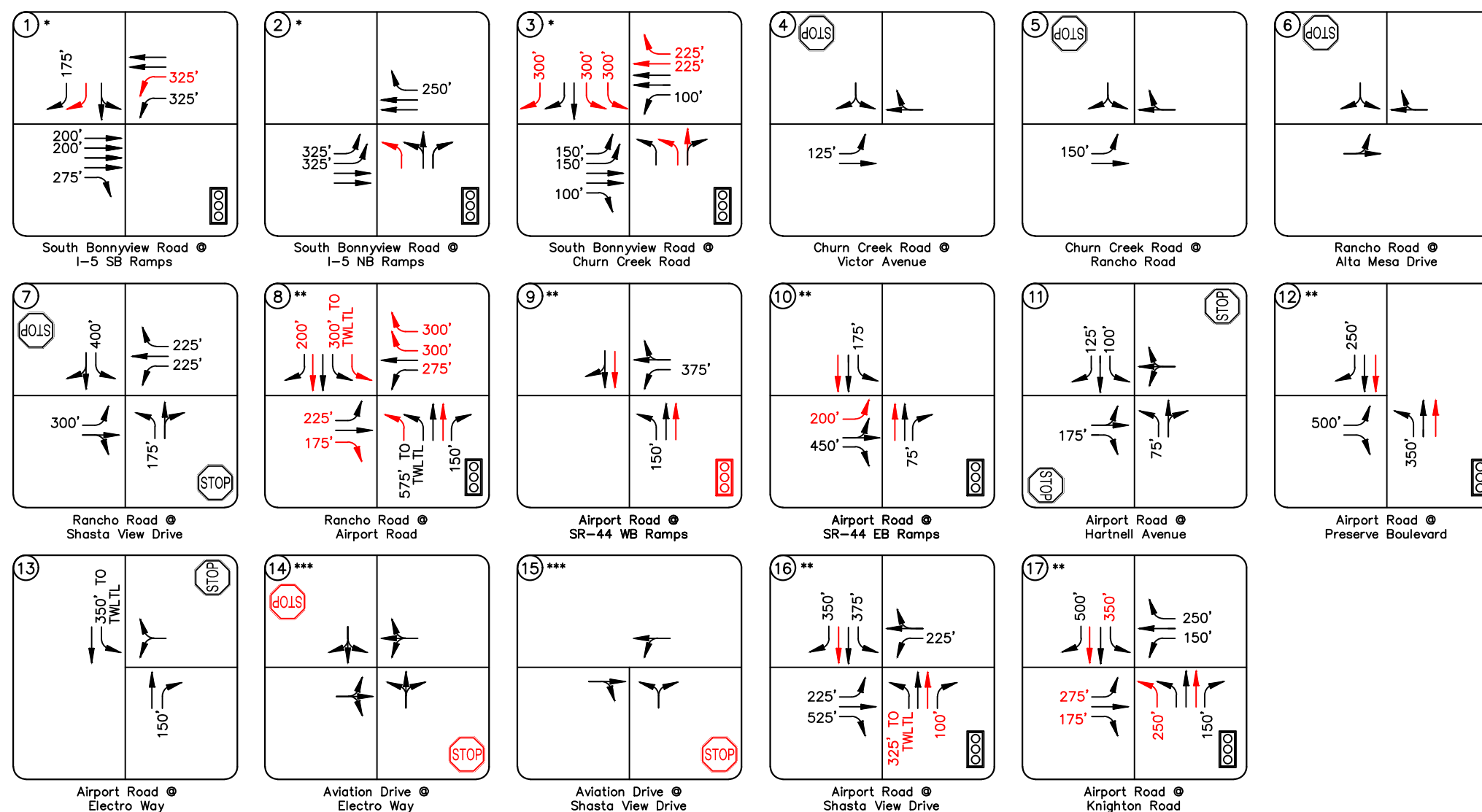
The roadway geometry and traffic control shown in **Figure 9** was used for this scenario. The roadway geometry and traffic control in this scenario is the same as the roadway geometry and traffic control in the Opening Year (2022) scenario (illustrated in **Figure 7**), with the addition of the project driveways.

As previously discussed on Page 8 of this report, client-provided trip counts based on expected operations and comparable facilities were used in lieu of ITE trip generation calculations. These trips were assigned to the roadway network based on local understanding of vehicular patterns in the study area and professional judgment. The traffic assignment was then manually added to the Opening Year (2022) peak-hour traffic volumes to establish Opening Year (2022) Plus Project peak-hour traffic volumes (presented in **Figure 10**).

² *Capital Improvement Plan (CIP)*, City of Redding.

³ *Project Study Report for Airport Road Widening*, Parsons Brinckerhoff, April 2008.

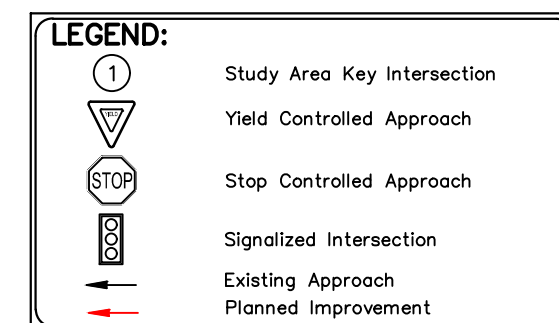
⁴ *Bonnyview Interchange (Exit 675) Improvements*, California Department of Transportation, October 2017.



*The interchange is anticipated to be converted to a Diverging Diamond Interchange (DDI). For the purposes of this study, the interchange will be analyzed as two (2) signalized intersections based on the expected lane configuration of Alternative 1a identified in the Bonnyview Interchange (Exit 675) Improvements report dated October 2017 (excerpt included in Appendix D). Alternative 1a also includes improvements to South Bonnyview Road @ Churn Creek Road (#3).

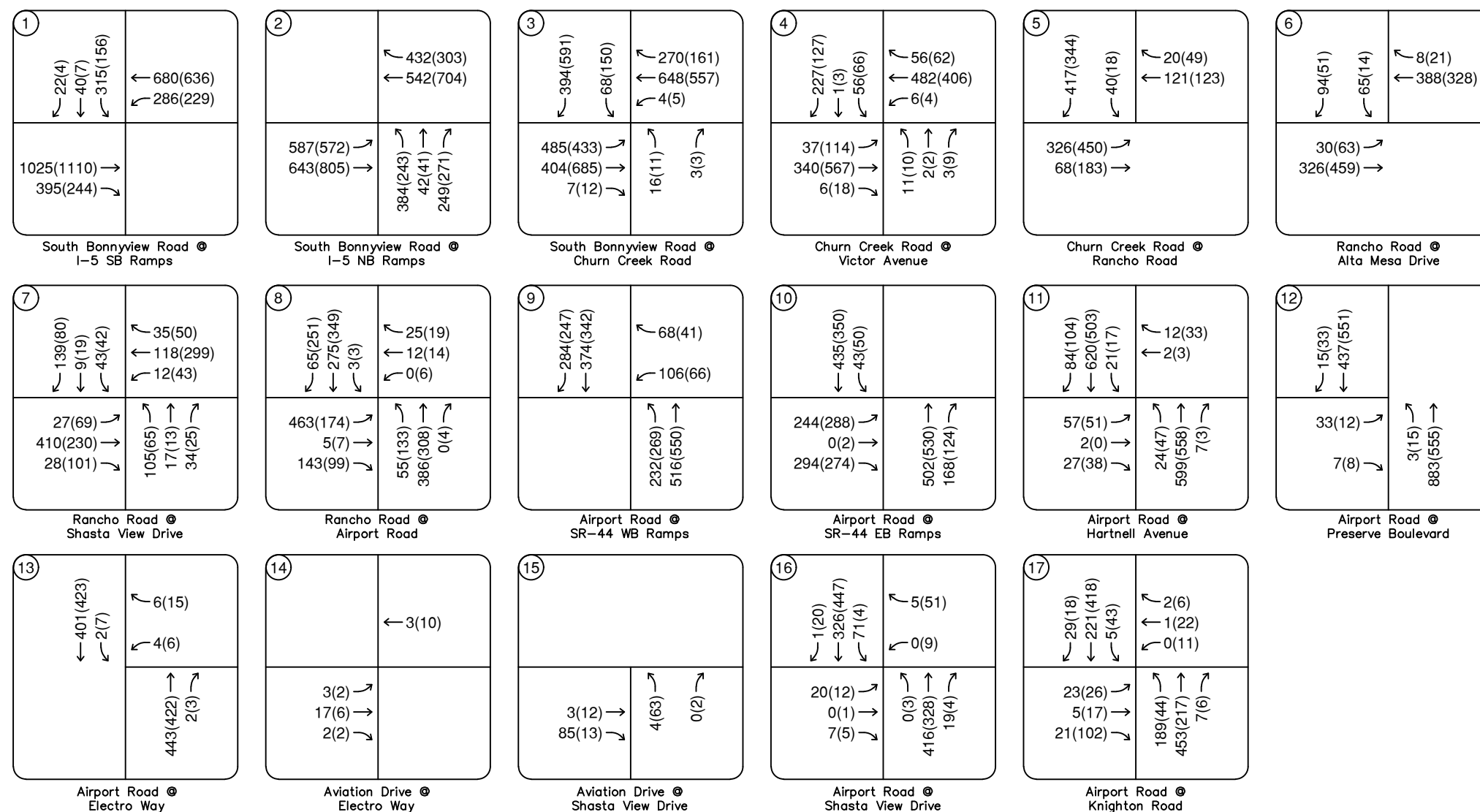
**Airport Road Corridor Improvements are based on the lane configuration and control identified in the Airport Road Widening Study (April 2008) for the 2030 With Project Conditions (excerpt included in Appendix D). For the Airport Road/SR-44 Interchange as well as Airport Road @ Preserve Boulevard (#12), the improvements identified in the Airport Road Widening Study were modified as they are no longer considered applicable.

***It is assumed that the intersection will become stop-controlled.



REDDING DISTRIBUTION FACILITY OPENING YEAR (2022) LANE CONFIGURATION AND CONTROL

FIGURE 7
Kimley»Horn



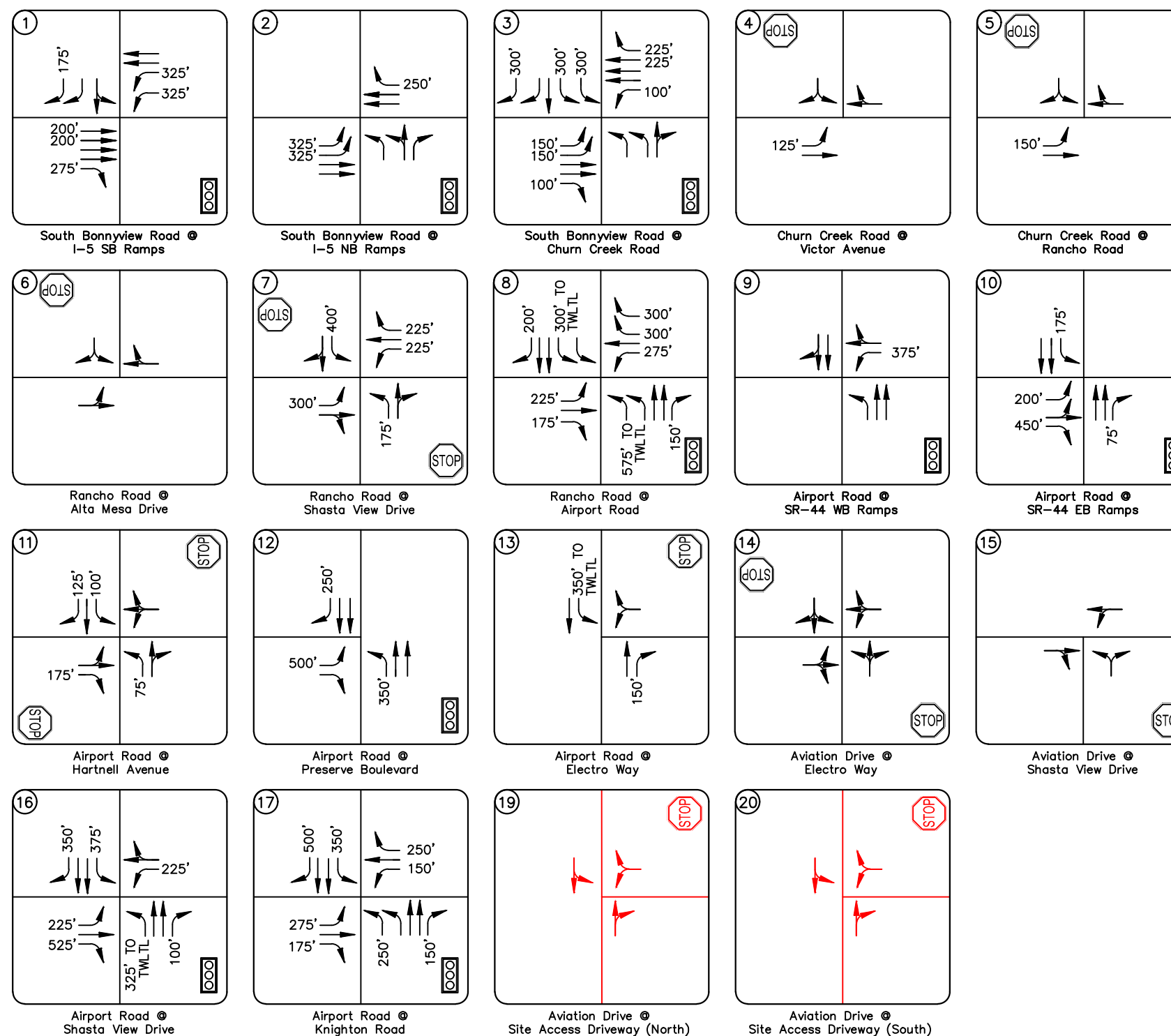
LEGEND:

① Study Area Key Intersection

← XX(X) AM(PM) Peak Hour Traffic Volumes

REDDING DISTRIBUTION FACILITY OPENING YEAR (2022) PEAK-HOUR TRAFFIC VOLUMES

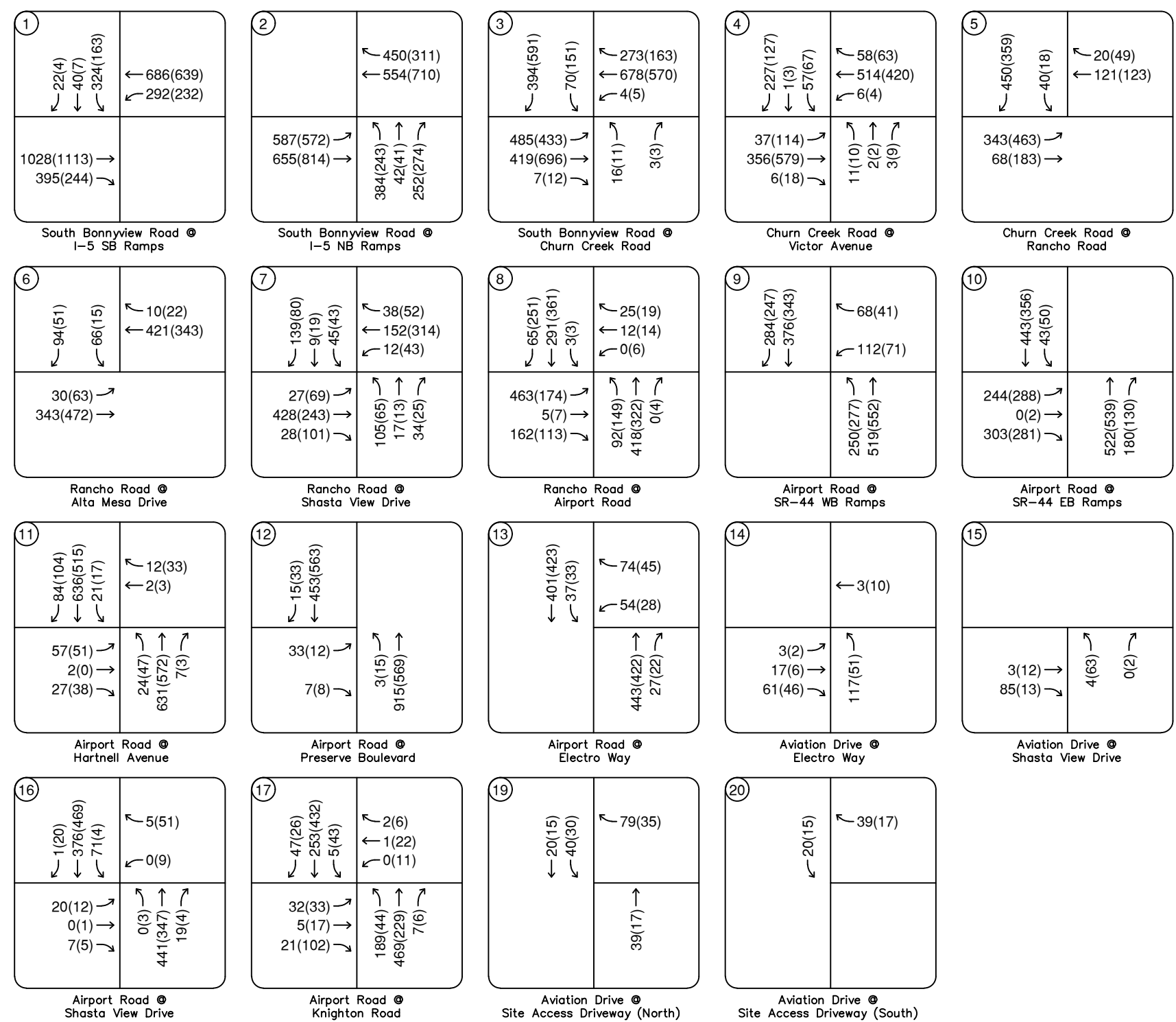
FIGURE 8
Kimley»Horn ©2021



LEGEND:

	Study Area Key Intersection
	Yield Controlled Approach
	Stop Controlled Approach
	Signalized Intersection
	Existing Approach
	Proposed Project Improvement

—Kimley»»Horr © 2021



LEGEND:

① Study Area Key Intersection

←XX(X) AM(PM) Peak Hour Traffic Volumes

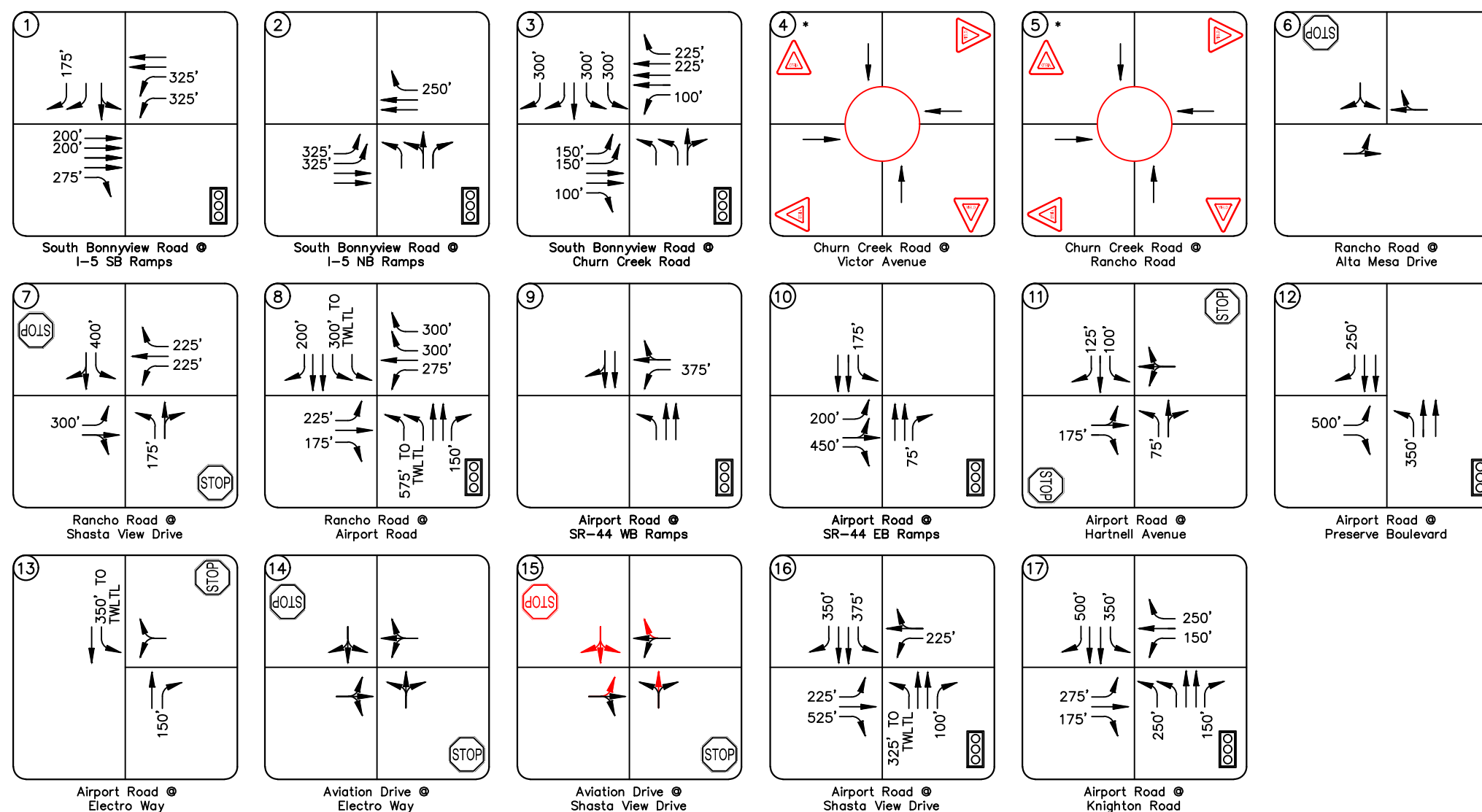
REDDING DISTRIBUTION FACILITY
OPENING YEAR (2022) PLUS PROJECT PEAK-HOUR TRAFFIC VOLUMES

Cumulative Year (2040) Conditions

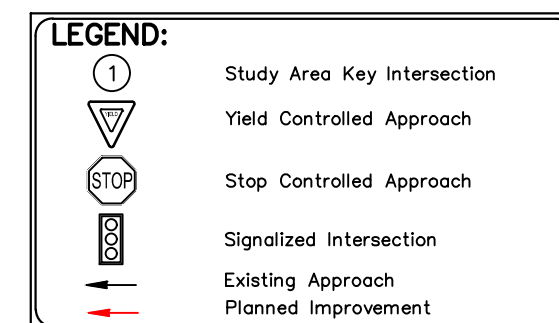
Volumes for the Cumulative (2040) scenario were obtained through the SCRTDF model. This scenario includes the VA Health Clinic as a cumulative project (excerpt included in **Appendix D**). This scenario assumes the roadway geometry and traffic control shown in **Figure 11**, which incorporate the Bonnyview Road/Churn Creek Road/Victor Avenue roundabout improvements identified in the City of Redding *CIP*. Cumulative (2040) peak-hour traffic volumes are presented in **Figure 12** for the AM and PM peak-hours.

Cumulative Year (2040) Plus Project Conditions

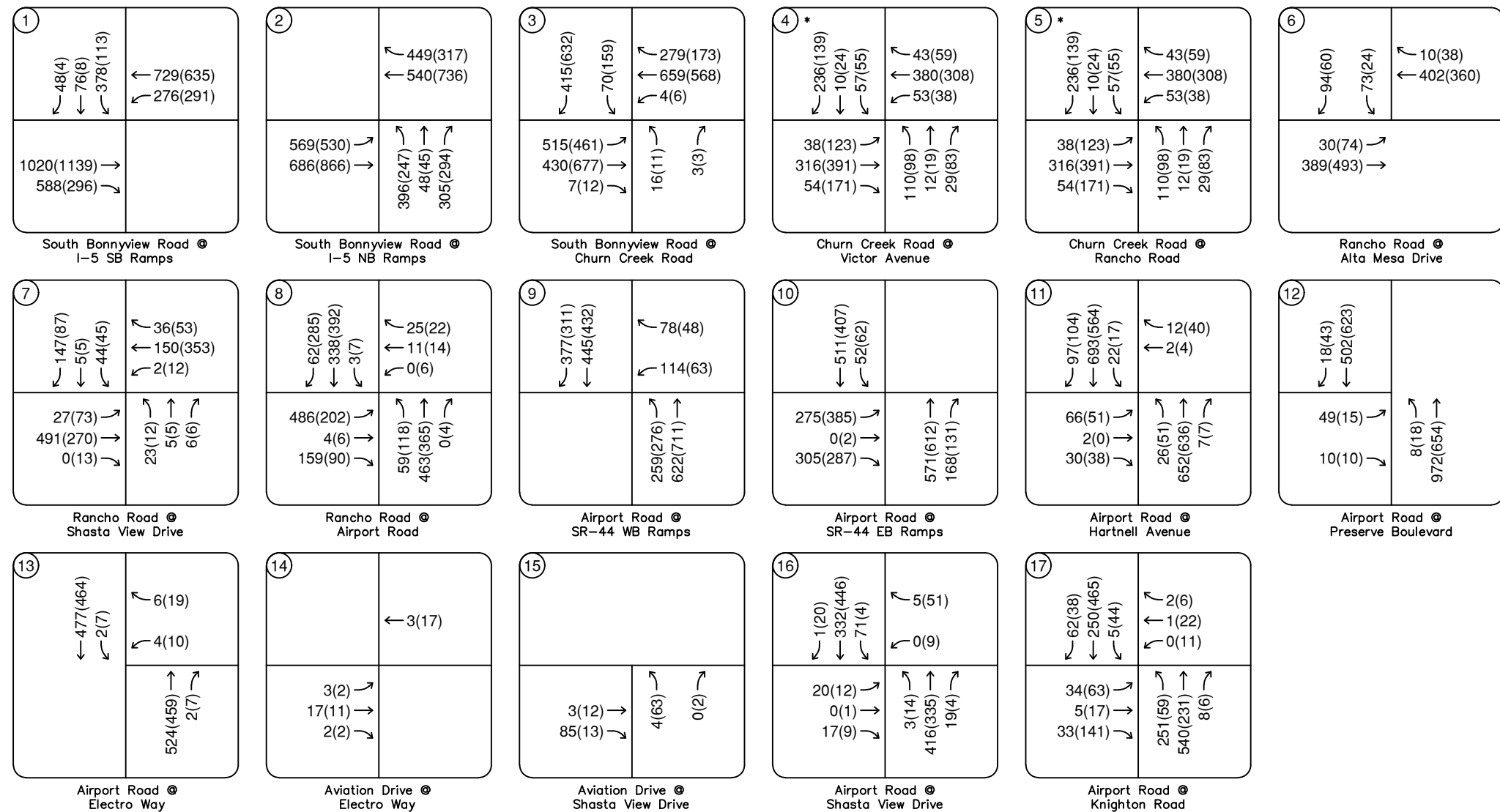
The volumes for the Cumulative (2040) Plus Project conditions were evaluated by manually adding the Proposed Project's trips to the Cumulative (2040) conditions. This scenario assumes the roadway geometry and traffic control shown in **Figure 13**, which is the same as the lane configuration and control for the Cumulative Year (2040) conditions (shown in **Figure 11**) with the addition of the project access drives. This scenario also assumes that the adjacent projects to the south of the project site have developed and that the Proposed Project access is both north and south along Aviation Drive. Cumulative (2040) Plus Project peak-hour traffic volumes are presented in **Figure 14** for the AM and PM peak-hours.



*The Churn Creek Road/Victor Avenue (#4) and Churn Creek Road/Rancho Road (#5) intersections are planned to be combined into one (1) single-lane roundabout. The lane configuration shown for both Intersection #4 and Intersection #5 reflects the lane configuration for the planned roundabout.



REDDING DISTRIBUTION FACILITY CUMULATIVE YEAR (2040) LANE CONFIGURATION AND CONTROL



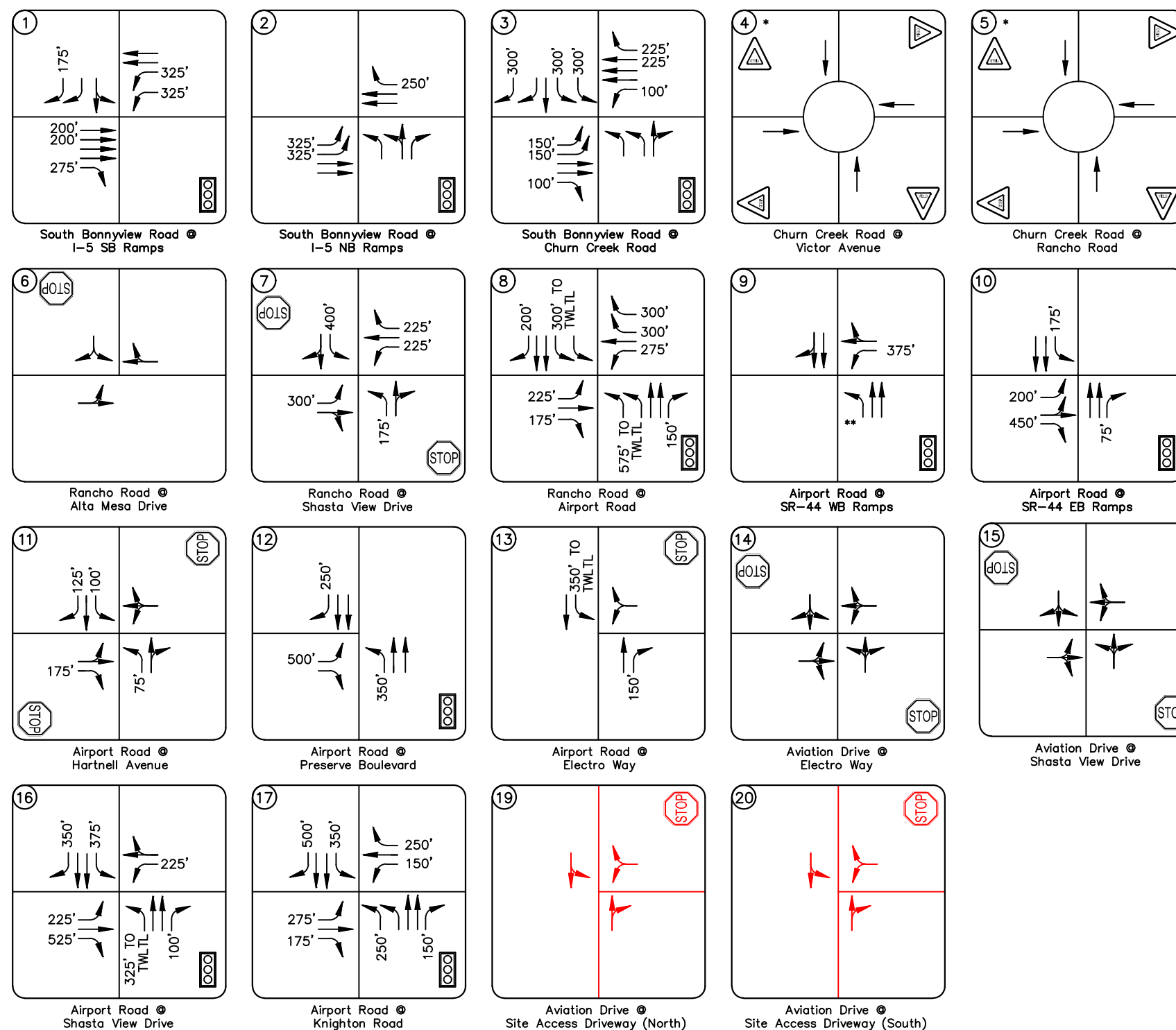
*The Churn Creek Road/Victor Avenue (#4) and Churn Creek Road/Rancho Road (#5) intersections are planned to be combined into one (1) single-lane roundabout. The traffic volumes shown for both Intersection #4 and Intersection #5 reflect the traffic volumes for the planned roundabout.

LEGEND:

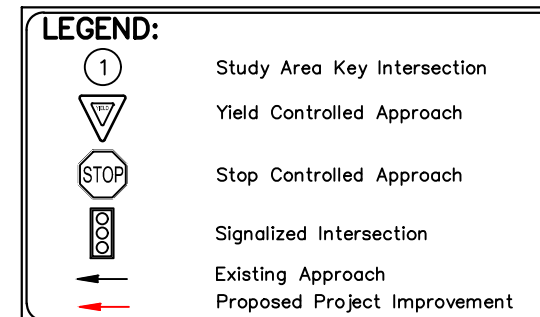
① Study Area Key Intersection

←XX(X) AM(PM) Peak Hour Traffic Volumes

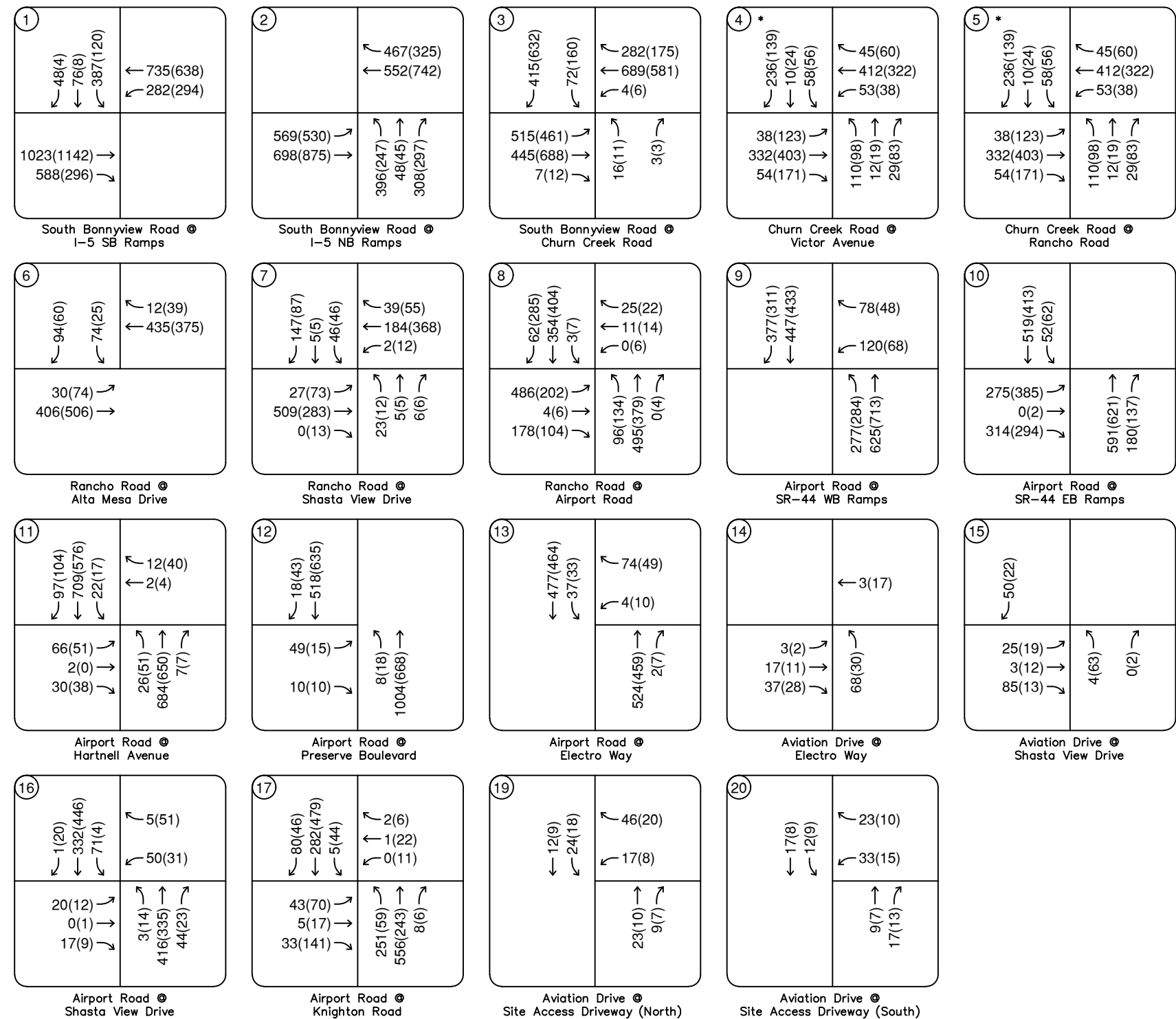
REDDING DISTRIBUTION FACILITY CUMULATIVE YEAR (2040) PEAK-HOUR TRAFFIC VOLUMES



*The Churn Creek Road/Victor Avenue (#4) and Churn Creek Road/Rancho Road (#5) intersections are planned to be combined into one (1) single-lane roundabout. The lane configuration shown for both Intersection #4 and Intersection #5 reflects the lane configuration for the planned roundabout.



REDDING DISTRIBUTION FACILITY CUMULATIVE YEAR (2040) WITH PROJECT LANE CONFIGURATION AND CONTROL



*The Churn Creek Road/Victor Avenue (#4) and Churn Creek Road/Rancho Road (#5) intersections are planned to be combined into one (1) single-lane roundabout. The traffic volumes shown for both Intersection #4 and Intersection #5 reflect the traffic volumes for the planned roundabout.

LEGEND:

① Study Area Key Intersection

←XX(X) AM(PM) Peak Hour Traffic Volumes

REDDING DISTRIBUTION FACILITY CUMULATIVE YEAR (2040) PLUS PROJECT PEAK-HOUR TRAFFIC VOLUMES

LOS ANALYSIS

Table 5 presents the intersection control of the study intersections in each scenario and **Table 6** summarizes the peak-hour LOS results for each analysis scenario at the study intersections. **Table 7** presents the roadway segment operating conditions for each analysis scenario. Analysis worksheets are included in **Appendices E - J**.

Table 5 – Intersection Control

ID	Intersection	Intersection Control				
		Existing Year (2021)	Opening Year (2022)	Opening Year (2022) Plus Project	Cumulative Year (2040)	Cumulative Year (2040) Plus Project
1	South Bonnyview Road @ I-5 SB Ramps	Signalized	Signalized	Signalized	Signalized	Signalized
2	South Bonnyview Road @ I-5 NB Ramps	Signalized	Signalized	Signalized	Signalized	Signalized
3	South Bonnyview Road @ Churn Creek Road	Signalized	Signalized	Signalized	Signalized	Signalized
4	Churn Creek Road @ Victor Avenue	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control	Roundabout	Roundabout
5	Churn Creek Road @ Rancho Road	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control	Roundabout	Roundabout
6	Rancho Road @ Alta Mesa Drive	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control
7	Rancho Road @ Shasta View Drive	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control
8	Rancho Road @ Airport Road	Signalized	Signalized	Signalized	Signalized	Signalized
9	Airport Road @ SR-44 WB Ramps	One-Way Stop-Control	Signalized	Signalized	Signalized	Signalized
10	Airport Road @ SR-44 EB Ramps	Signalized	Signalized	Signalized	Signalized	Signalized
11	Airport Road @ Hartnell Avenue	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control
12	Airport Road @ Preserve Boulevard	Signalized	Signalized	Signalized	Signalized	Signalized
13	Airport Road @ Electro Way	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control	One-Way Stop-Control
14	Aviation Drive @ Electro Way	Yield Control/Uncontrolled	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control
15	Aviation Drive and Shasta View Drive	Yield Control/Uncontrolled	One-Way Stop-Control	One-Way Stop-Control	Two-Way Stop-Control	Two-Way Stop-Control

ID	Intersection	Intersection Control				
		Existing Year (2021)	Opening Year (2022)	Opening Year (2022) Plus Project	Cumulative Year (2040)	Cumulative Year (2040) Plus Project
16	Airport Road @ Shasta View Drive	Signalized	Signalized	Signalized	Signalized	Signalized
17	Airport Road @ Knighton Road	Signalized	Signalized	Signalized	Signalized	Signalized
19	Aviation Drive @ Site Access Driveway (North)	-	-	One-Way Stop-Control	-	One-Way Stop-Control
20	Aviation Drive @ Site Access Driveway (South)	-	-	One-Way Stop-Control	-	One-Way Stop-Control

Table 6 – Intersection Level of Service Analysis

ID	Intersection	Peak Hour	Delay (LOS)				
			Existing Year (2021)	Opening Year (2022)	Opening Year (2022) Plus Project	Cumulative Year (2040)	Cumulative Year (2040) Plus Project
1	South Bonnyview Road @ I-5 SB Ramps	AM	34.8 (C)	27.9 (C)	29.7 (C)	32.4 (C)	30.8 (C)
		PM	14.4 (B)	15.3 (B)	15.5 (B)	18.4 (B)	18.1 (B)
2	South Bonnyview Road @ I-5 NB Ramps	AM	20.7 (C)	18.4 (B)	18.7 (B)	16.8 (B)	17.3 (B)
		PM	17.9 (B)	18.2 (B)	18.2 (B)	19.1 (B)	19.1 (B)
3	South Bonnyview Road @ Churn Creek Road	AM	22.9 (C)	21.1 (C)	23.0 (C)	20.3 (C)	22.0 (C)
		PM	24.6 (C)	23.4 (C)	24.6 (C)	23.3 (B)	24.4 (C)
4*	Churn Creek Road @ Victor Avenue	AM	3.5 [15.8 SBL (C)]	5.3 [30.9 SBL (D)]	5.6 [33.7 SBL (D)]	8.2 (A)**	8.6 (A)**
		PM	5.0 [24.6 SBL (C)]	6.4 [40.7 SBL (E)]	7.4 [48.2 SBL (E)]	9.6 (A)**	9.8 (A)**
5*	Churn Creek Road @ Rancho Road	AM	4.9 [13.8 SBL (B)]	6.0 [15.5 SBL (C)]	6.4 [16.4 SBL (C)]	8.2 (A)**	8.6 (A)**
		PM	3.6 [14.1 SBL (B)]	4.2 [16.1 SBL (C)]	4.8 [19.7 SBL (C)]	9.6 (A)**	9.8 (A)**
6*	Rancho Road @ Alta Mesa Drive	AM	3.3 [15.0 SB (C)]	3.4 [17.9 SB (C)]	3.5 [19.4 SB (C)]	3.7 [20.8 SB (C)]	3.9 [22.9 (C)]
		PM	1.6 [11.7 SB (B)]	1.5 [13.5 SB (B)]	1.5 [14.0 SB (B)]	1.9 [16.5 SB (C)]	2.0 [17.3 SB (C)]
7*	Rancho Road @ Shasta View Drive	AM	3.6 [19.2 NBL (C)]	6.7 [30.6 NBL (D)]	7.0 [35.6 NBL (E)]	3.6 [23.5 NBL (C)]	3.6 [25.8 NBL (D)]
		PM	3.5 [20.9 NBL (C)]	6.1 [37.1 NBL (E)]	6.3 [40.5 NBL (E)]	3.5 [25.2 NBL (D)]	3.6 [26.6 NBL (D)]
8	Rancho Road @ Airport Road	AM	24.4 (C)	17.7 (B)	18.3 (B)	19.2 (B)	19.8 (B)
		PM	18.5 (B)	17.9 (B)	18.5 (B)	17.6 (B)	18.1 (B)
9*	Airport Road @ SR-44 WB Ramps	AM	8.1 [15.2 SB (C)]	10.3 (B)	10.7 (B)	11.6 (B)	12.1 (B)
		PM	6.9 [13.2 SB (C)]	9.5 (A)	9.7 (A)	9.8 (A)	10.0 (B)
10	Airport Road @ SR-44 EB Ramps	AM	12.0 (B)	9.9 (A)	9.7 (A)	10.6 (B)	11.9 (B)
		PM	12.8 (B)	10.1 (B)	10.4 (B)	11.7 (B)	24.5 (C)
11*	Airport Road @ Hartnell Avenue	AM	2.9 [34.4 EBT (D)]	2.6 [28.7 EBL (D)]	2.5 [25.4 EBL (D)]	2.7 [46.8 WBT (E)]	2.8 [35.2 EBL (E)]
		PM	3.5 [22.6 EBL (C)]	2.6 [18.5 EBL (C)]	2.6 [20.5 EBL (C)]	2.8 [22.8 WBT (C)]	2.9 [24.8 EBL (C)]
12	Airport Road @ Preserve Boulevard	AM	7.0 (A)	5.9 (A)	5.9 (A)	6.3 (A)	6.2 (A)
		PM	7.1 (A)	6.1 (A)	6.1 (A)	6.1 (A)	6.1 (A)
13*	Airport Road @ Electro Way	AM	4.8 [9.0 WBL (A)]	4.8 [10.4 WBL (B)]	5.6 [13.0 WBL (B)]	4.8 [10.6 WBL (B)]	4.9 [13.6 WBL (B)]
		PM	4.1 [8.2 WBL (A)]	4.3 [7.5 SBL (A)]	4.6 [10.5 WBL (B)]	4.3 [7.9 WBL (A)]	4.7 [12.0 WBL (B)]

ID	Intersection	Peak Hour	Delay (LOS)				
			Existing Year (2021)	Opening Year (2022)	Opening Year (2022) Plus Project	Cumulative Year (2040)	Cumulative Year (2040) Plus Project
14*	Aviation Drive @ Electro Way	AM	0.4 [1.6 EBL (A)]	0.4 [1.3 EBL (A)]	2.8 [4.5 NBL (A)]	0.2 [1.3 EBL (A)]	2.6 [4.5 NBL (A)]
		PM	0.2 [1.6 EBL (A)]	0.3 [1.5 EBL (A)]	1.9 [4.3 NBL (A)]	0.2 [1.9 EBL (A)]	1.7 [4.3 NBL (A)]
15*	Aviation Drive @ Shasta View Drive	AM	1.2 [1.8 NBL (A)]	1.2 [3.7 NBL (A)]	1.1 [3.5 NBL (A)]	1.3 [3.9 NBL (A)]	1.8 [3.9 NBL (A)]
		PM	1.4 [1.9 NBL (A)]	3.2 [4.5 NBL (A)]	3.3 [4.4 NBL (A)]	3.2 [4.4 NBL (A)]	3.0 [4.6 NBL (A)]
16	Airport Road @ Shasta View Drive	AM	13.2 (B)	10.7 (B)	11.8 (B)	10.5 (B)	11.0 (B)
		PM	11.7 (B)	9.1 (A)	8.5 (A)	9.8 (A)	10.2 (B)
17	Airport Road @ Knighton Road	AM	9.8 (A)	8.2 (A)	8.3 (A)	8.7 (A)	8.8 (A)
		PM	11.1 (B)	9.6 (A)	9.6 (A)	10.5 (B)	10.5 (B)
19	Aviation Drive @ Site Access Driveway (North)	AM	-	-	5.6 [8.8 WB (A)]	-	5.6 [8.9 WB (A)]
		PM	-	-	5.3 [8.5 WB (A)]	-	5.2 [8.6 WB (A)]
20	Aviation Drive @ Site Access Driveway (South)	AM	-	-	0.0 [0.0 NB (A)]	-	5.3 [8.9 WB (A)]
		PM	-	-	0.0 [0.0 NB (A)]	-	4.6 [8.7 WB (A)]

Notes:

Bold represents unacceptable operations based on the City of Redding's TIA Guidelines.

*TWSC intersection is reported with the worst delay as follows: overall average delay [worst delay]. The reported LOS corresponds with the worst approach.

**Intersection #4 and Intersection #5 will be combined into one (1) single-lane roundabout in the Cumulative Year (2040) scenarios. The reported LOS reflects the LOS of the roundabout.

Table 7 – Roadway Segment Level of Service Analysis

Roadway Segment	Sub-Segment	Peak-Hour	Analysis Direction	LOS (V/C Ratio)				
				Existing Year (2021)	Opening Year (2022)	Opening Year (2022) Plus Project	Cumulative Year (2040)	Cumulative Year (2040) Plus Project
Churn Creek Road, Between South Bonnyview Road and Victor Avenue	1.1. Bonnyview Road to Victor Avenue	AM	NB	E (1.10)	E (1.19)	E (1.23)	E (1.89)	E (1.93)
	1.1. Bonnyview Road to Victor Avenue		SB	E (1.10)	E (1.19)	E (1.23)	E (1.89)	E (1.93)
	1.1. Bonnyview Road to Victor Avenue	PM	NB	E (1.29)	E (1.40)	E (1.42)	E (2.06)	E (2.08)
	1.1. Bonnyview Road to Victor Avenue		SB	E (1.29)	E (1.40)	E (1.42)	E (2.06)	E (2.08)
Rancho Road, Between Churn Creek Road and Airport Road	2.1. Churn Creek Road to Alta Mesa Drive	AM	EB	A (0.59)	A (0.34)	A (0.36)	A (0.36)	A (0.37)
	2.1. Churn Creek Road to Alta Mesa Drive		WB	A (0.59)	A (0.34)	A (0.36)	A (0.36)	A (0.37)
	2.2. Alta Mesa Drive to Shasta View Drive		EB	A (0.56)	A (0.33)	A (0.35)	B (0.70)	B (0.72)
	2.2. Alta Mesa Drive to Shasta View Drive		WB	A (0.56)	A (0.33)	A (0.35)	B (0.70)	B (0.72)
	2.3. Shasta View Drive and Airport Road		EB	A (0.54)	A (0.29)	A (0.31)	B (0.69)	B (0.71)
	2.3. Shasta View Drive and Airport Road		WB	A (0.54)	A (0.29)	A (0.31)	B (0.69)	B (0.71)
	2.1. Churn Creek Road to Alta Mesa Drive	PM	EB	A (0.61)	A (0.36)	A (0.37)	A (0.38)	A (0.39)
	2.1. Churn Creek Road to Alta Mesa Drive		WB	A (0.61)	A (0.36)	A (0.37)	A (0.38)	A (0.39)
	2.2. Alta Mesa Drive to Shasta View Drive		EB	A (0.56)	A (0.34)	A (0.35)	B (0.71)	B (0.72)
	2.2. Alta Mesa Drive to Shasta View Drive		WB	A (0.56)	A (0.34)	A (0.35)	B (0.71)	B (0.72)
	2.3. Shasta View Drive and Airport Road		EB	A (0.52)	A (0.28)	A (0.29)	B (0.69)	B (0.70)
	2.3. Shasta View Drive and Airport Road		WB	A (0.52)	A (0.28)	A (0.29)	B (0.69)	B (0.70)
Airport Road, Between SR-44 and Knighton Road	3.1 SR-44 WB Ramp to SR-44 EB Ramp	AM	NB	D (0.98)	A (0.50)	A (0.51)	C (0.88)	D (0.90)
	3.1 SR-44 WB Ramp to SR-44 EB Ramp		SB	D (0.98)	A (0.50)	A (0.51)	C (0.88)	D (0.90)
	3.2 SR-44 EB Ramp to Hartnell Avenue		NB	E (1.11)	A (0.57)	A (0.59)	E (1.37)	E (1.38)
	3.2 SR-44 EB Ramp to Hartnell Avenue		SB	E (1.11)	A (0.57)	A (0.59)	E (1.37)	E (1.38)
	3.3 Hartnell Avenue to Preserve Boulevard		NB	E (1.06)	A (0.54)	A (0.56)	E (1.12)	E (1.13)
	3.3 Hartnell Avenue to Preserve Boulevard		SB	E (1.06)	A (0.54)	A (0.56)	E (1.12)	E (1.13)
	3.4 Preserve Boulevard to Electro Way		NB	C (0.88)	A (0.45)	A (0.48)	D (0.90)	D (0.92)
	3.4 Preserve Boulevard to Electro Way		SB	C (0.88)	A (0.45)	A (0.48)	D (0.90)	D (0.92)
	3.5 Electro Way to Shasta View Drive		NB	A (0.34)	A (0.18)	A (0.19)	A (0.34)	A (0.34)
	3.5 Electro Way to Shasta View Drive		SB	A (0.34)	A (0.18)	A (0.19)	A (0.34)	A (0.34)

Roadway Segment	Sub-Segment	Peak-Hour	Analysis Direction	LOS (V/C Ratio)				
				Existing Year (2021)	Opening Year (2022)	Opening Year (2022) Plus Project	Cumulative Year (2040)	Cumulative Year (2040) Plus Project
	3.6 Shasta View Drive to Knighton Road		NB	A (0.01)	A (0.00)	A (0.04)	A (0.00)	A (0.03)
	3.6 Shasta View Drive to Knighton Road		SB	A (0.01)	A (0.00)	A (0.04)	A (0.00)	A (0.03)
	3.1 SR-44 WB Ramp to SR-44 EB Ramp	PM	NB	D (0.98)	A (0.50)	A (0.51)	E (1.09)	E (1.09)
	3.1 SR-44 WB Ramp to SR-44 EB Ramp		SB	D (0.98)	A (0.50)	A (0.51)	E (1.09)	E (1.09)
	3.2 SR-44 EB Ramp to Hartnell Avenue		NB	E (1.11)	A (0.52)	A (0.53)	E (1.35)	E (1.35)
	3.2 SR-44 EB Ramp to Hartnell Avenue		SB	E (1.11)	A (0.52)	A (0.53)	E (1.35)	E (1.35)
	3.3 Hartnell Avenue to Preserve Boulevard		NB	D (0.97)	A (0.47)	A (0.48)	E (1.08)	E (1.09)
	3.3 Hartnell Avenue to Preserve Boulevard		SB	D (0.97)	A (0.47)	A (0.48)	E (1.08)	E (1.09)
	3.4 Preserve Boulevard to Electro Way		NB	C (0.79)	A (0.41)	A (0.43)	C (0.87)	C (0.88)
	3.4 Preserve Boulevard to Electro Way		SB	C (0.79)	A (0.41)	A (0.43)	C (0.87)	C (0.88)
	3.5 Electro Way to Shasta View Drive		NB	A (0.34)	A (0.18)	A (0.18)	A (0.33)	A (0.33)
	3.5 Electro Way to Shasta View Drive		SB	A (0.34)	A (0.18)	A (0.18)	A (0.33)	A (0.33)
	3.6 Shasta View Drive to Knighton Road		NB	A (0.01)	A (0.00)	A (0.02)	A (0.00)	A (0.02)
	3.6 Shasta View Drive to Knighton Road		SB	A (0.01)	A (0.00)	A (0.02)	A (0.00)	A (0.02)

Notes:

Bold represents unacceptable operations based on the City of Redding's TIA Guidelines.

BICYCLE, PEDESTRIAN, AND TRANSIT EVALUATION

Rancho Road is the nearest roadway to the proposed project site with existing bicycle facilities. Per the City of Redding's General Plan Transportation Element⁵, Airport Road is proposed to include a Class II bicycle facility. Bicycle facility improvements connecting to Airport Road proximate to the site are supported by the City's 2010 Bikeway Action Plan⁶. The proposed project fronts Aviation Drive and is therefore not anticipated to disrupt the City's Bikeway Action Plan improvements for Airport Road. The project does not propose additional bicycle facility construction along Aviation Drive.

Airport Road does not currently provide sidewalks. The section of Aviation Drive presently constructed provides pedestrian sidewalks along both sides of the street. The project proposes to add sidewalk along the east side of Aviation Drive. The project is not anticipated to add a significant number of pedestrian trips to the network due to the lack of nearby development and proximate transit facilities.

Transit service provided by the Redding Area Bus Authority (RABA) is not currently available near the project area or along roadways anticipated to carry the majority of additional project trips⁷. As such, the project is not anticipated to affect RABA operations. Trips generated by the project are not anticipated to generate sufficient demand to warrant transit network expansion.

SITE PLAN, ACCESS, AND CIRCULATION EVALUATION

The proposed project site is anticipated to accommodate trailer lengths up to 53-feet. All project entrances and exits from Aviation Drive have been designed and evaluated to ensure adequate access for the largest design vehicle (WB-67). The proposed site plan appears to provide adequate room for loading and unloading operations. As the proposed site plan meets the requirements for the largest anticipated vehicle, it is assumed that the access points and internal layout are sufficient to accommodate smaller vehicles.

It is assumed that the section of Aviation Drive fronting the project site will be staged and constructed to enable site access for both emergency services and project equipment. This section of Aviation Drive will be the primary access for emergency vehicles. Secondary access off of Old Oregon Trail is planned to be utilized by emergency vehicles only in the ultimate build-out condition. Aviation Drive is still anticipated to serve as the primary access.

Access to the site is provided at two (2) driveways, both proposed to open onto an extended segment of Aviation Drive along the project frontage. The northern driveway is approximately 500 feet south of the existing intersection between Aviation Drive and Electro Way and is anticipated to primarily serve traffic from site employees, visitors, and delivery vans. The southern driveway is anticipated to primarily serve trailer truck traffic access onto the site. Both driveways are proposed to be full access for their respective purposes providing ingress and egress. Due to low existing volumes, minimal turn movement/access conflicts are anticipated for the Opening Year (2022) scenarios.

The proposed site provides adequate private vehicle on-site parking for its employees per the City of Redding Municipal Code⁸. Client-provided trip generation estimates indicate that the number of parking spaces included in this site plan is greater than the number of private vehicles arriving over the course of a day. Per network analysis completed for the Opening Year (2022) scenario, significant vehicle queueing is not anticipated on site, with a maximum queue storage of 25 feet required at both the northern driveway and the southern driveway.

⁵ *General Plan Transportation Element*, City of Redding, 2000.

⁶ *Bikeway Action Plan*, City of Redding, 2010.

⁷ *Redding Area Bus Authority (RABA) Ride Guide*, City of Redding, 2020.

⁸ *Code of Ordinances*, City of Redding, 2021.

DEFICIENCIES AND IMPROVEMENTS

Standards of Deficiency

The City of Redding's *TIA Guidelines* were referenced to identify deficiencies at the study area facilities. The following criteria were used:

"The minimum LOS standard to be used in the analysis shall be consistent with City of Redding General Plan Policy T1A:

- *LOS "C" – for most arterial streets and their intersections.*
- *LOS "D" – for the Downtown area.*
- *LOS "D" – for streets within the State Highway system and interchanges.*
- *LOS "D" – for river-crossing street corridors whose capacity is affected by adjacent intersections.*

For two-way stop-controlled intersections, the minimum LOS standard is LOS "C" for the worst-case movement.

For state-owned facilities, Caltrans' Guide for the Preparation of Traffic Impact Studies states: "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE (measure of effectiveness) should be maintained."

Significant impact is defined by the City's guidelines as follows:

"Signalized Intersections

- *The project causes an acceptable LOS to decline to an unacceptable LOS, or*
- *The project increases the average delay by more than 5 seconds per vehicle at an intersection having an unacceptable LOS without project traffic*

All-Way Stop Intersections

- *The project causes an acceptable LOS to decline to an unacceptable LOS, or*
- *The project increases the overall average delay by more than 5 seconds per vehicle at an intersection that has an unacceptable LOS without the project and the intersection also meets the peak hour volume signal warrant*

Two-Way Stop Intersections

- *The project causes the following to occur for the worst-case movement:*
 - *The LOS declines to an unacceptable LOS, and*
 - *The volume to capacity ratio exceeds 0.75, and*
 - *The 95th percentile queue exceeds 75 feet (3 vehicles), or*
- *The project causes the worst-case movement's acceptable LOS to decline to an unacceptable LOS and the peak hour volume signal warrant is met, or*
- *The project increases the average delay for the worst-case movement by more than 5 seconds per vehicle at an intersection that has an unacceptable LOS without the project and the intersection also meets the peak hour volume signal warrant*

Roadways

- The project causes an acceptable LOS to decline to an unacceptable LOS, or
- The project causes the V/C ratio to increase by more than 0.05 on a roadway having an unacceptable LOS without project traffic
- The project causes the amount of traffic on a local street to exceed 2,000 daily vehicles or 180 peak hour vehicles; or adds any amount of traffic to a local street which exceeds these limits without the project
- The project causes the amount of traffic on a residential collector, having individual access to single family lots, to exceed 4,000 daily vehicles or 360 peak hour vehicles; or adds any amount of traffic to a residential collector which exceeds these limits without the project"

Additionally, The City's guidelines specify the following regarding mitigation:

"The report shall make feasible recommendations that reduce the project's significant impacts to a less-than-significant level. The report shall clearly identify responsibility for implementing each recommendation, as provided below. The timing for implementation of specific recommendations shall be identified in the report, either by estimated year or by development threshold.

Impacts in Existing plus Project Conditions-

It is the project's responsibility to install the project's recommended improvements at the time of development in order to mitigate impacts to a less-than-significant level. The project is 100% responsible for these improvements.

Impacts in Cumulative Conditions-

(A) if the project's fair share of a cumulative impact is 25 percent or more, then the recommended improvements shall be installed at the time of development, subject to a reimbursement agreement. If the recommended improvement is included in the current list of Traffic Impact Fee (TIF) projects, reimbursement will be in the form of either TIF credit or payment from the TIF.

(B) If the project's fair share of a cumulative impact is less than 25 percent, then the project will be required to pay its fair share of the cost of the improvements to be constructed later by others, prior to the realization of the impact. If the recommended improvement is included in the current list of TIF projects, then payment of the project's TIF fee will be considered mitigation for the impact."

Impacts and Mitigation

As reflected in **Table 6** and **Table 7**, the addition of the proposed project results in the following impacts as defined by the City. The follow is a discussion of the impacts and their associated mitigations.

Impacts:

Intersections

Intersection 4. The intersection operates at unacceptable LOS under Opening Year (2022) AM and PM peak-hour conditions both with and without the proposed project. The proposed project traffic increases the delay of the worst movement by less than 5 seconds in the AM peak-hour. While the project increases the delay of the worst movement by more than 5 seconds in the PM peak-hour, significant delay is to be expected for the minor, stop-controlled approach, and the overall intersection operates at LOS A. Furthermore, Intersection #4 and Intersection #5 are identified in the City of Redding CIP to be combined into one (1) single-lane roundabout. Under Cumulative Year (2040) scenarios both with and without the proposed project, the roundabout is expected to operate at LOS A. ***Therefore, this impact is considered to be less than significant.***

Intersection 7. The intersection operates at unacceptable LOS under Opening Year (2022) AM and PM peak hour conditions both with and without the proposed project, Cumulative Year (2040) PM peak-hour conditions, and Cumulative Year (2040) Plus Project AM and PM peak-hour conditions both with and without the proposed project. The proposed project traffic does not increase delay of the worst movement by more than 5 seconds in the Opening Year (2022) Plus Project AM and PM peak-hour scenarios and the Cumulative Year (2040) Plus Project PM peak-hour scenario. While the project causes the worst movement to operate below acceptable LOS in the Cumulative Year (2040) Plus Project AM peak-hour, significant delay is to be expected for the minor, stop-controlled approaches, and the overall intersection operates at LOS A. It is important to also note that HCM 6 methodology does not account for gaps in the traffic stream and platooning from nearby signalized intersections or adjacent access drives. Based upon volume thresholds in the Manual on Uniform Traffic Control Devices (MUTCD), the intersection is not anticipated to meet peak hour signal warrants. ***Therefore, this impact is considered to be less than significant.***

Intersection 11. The intersection operates at unacceptable LOS under all evaluated scenarios in the AM peak-hour. The proposed project does not increase the delay for the worst movement by more than 5 seconds in the Opening Year (2022) Plus Project or Cumulative Year (2040) Plus Project AM peak-hour scenarios and the overall intersection operates at LOS A under all evaluated scenarios. ***This impact is less than significant.***

Roadway Segments

Roadway Segment 1.1. The roadway segment operates at unacceptable LOS under all evaluated scenarios. The proposed project traffic increases the v/c ratio by less than 0.5 in both Opening Year (2022) Plus Project scenarios and Cumulative Year (2040) Plus Project scenarios. ***This impact is less than significant.***

Roadway Segment 3.1. The roadway segment operates at unacceptable LOS under Cumulative Year (2040) PM peak-hour conditions both with and without the proposed project. The proposed project traffic increases the v/c ratio by less than 0.5 in both Opening Year (2022) Plus Project scenarios and Cumulative Year (2040) Plus Project scenarios. ***This impact is less than significant.***

Roadway Segment 3.2. The roadway segment operates at unacceptable LOS under Existing (2021) AM and PM peak-hour conditions. Planned roadway improvement identified in the City of Redding CIP increase the number of lanes along this segment from two-lanes to four-lanes, improving the LOS to be acceptable in the Opening Year (2022) scenarios both with and without the proposed project. The roadway segment operates at an unacceptable LOS under Cumulative Year (2040) AM and PM peak-hour conditions both with and without the proposed project. The proposed project traffic increases the v/c ratio by less than 0.5 in both Opening Year (2022) scenarios and Cumulative Year (2040) scenarios. ***This impact is less than significant.***

Roadway Segment 3.3. The roadway segment operates at unacceptable LOS under Existing (2021) AM peak-hour condition. Planned roadway improvements identified in the City of Redding CIP increase the number of lanes along this segment from two-lanes to four-lanes, improving the LOS to an acceptable condition in the Opening Year (2022) scenarios both with and without the proposed project. The roadway segment operates at an unacceptable LOS under Cumulative Year (2040) AM and PM peak-hour conditions both with and without the proposed project. The proposed project traffic increases the v/c ratio by less than 0.5 in the Cumulative Year (2040) Plus Project scenarios. ***This impact is less than significant.***

Mitigations:

No mitigation measures are recommended as the addition of the proposed project trips to the roadway network does not result in any significant impacts to the evaluated study facilities.

CONCLUSIONS

Significant findings of this study include:

- The addition of the proposed 250,956 SF distribution facility is estimated to generate 1,086 daily trips, with 176 trips occurring during the AM peak-hour, and 95 trips occurring during the PM peak-hour.
- The addition of the proposed project trips does not result in a significant impact at the evaluated study facilities. Therefore, no mitigation measures are recommended.

Appendix A

Trip Generation Data

		<u>AUTOS</u>		<u>VANS</u>		<u>53' TRAILERS</u>		<u>TOTAL COUNTS</u>	
<u>TIME SEGMENT</u>		<u>Arrive</u>	<u>Depart</u>	<u>Arrive</u>	<u>Depart</u>	<u>Arrive</u>	<u>Depart</u>	<u>Arrive</u>	<u>Depart</u>
0:00	0:59	0	0	0	0	0	0	0	0
1:00	1:59	0	0	0	0	1	0	1	0
2:00	2:59	103	0	0	0	1	2	104	2
3:00	3:59	0	0	0	0	1	3	1	3
4:00	4:59	0	0	0	0	0	2	0	2
5:00	5:59	0	0	0	0	2	4	2	4
6:00	6:59	3	0	0	0	3	7	6	7
7:00	7:59	116	0	0	3	1	1	117	4
8:00	8:59	57	0	0	116	2	1	59	117
9:00	9:59	3	103	0	57	5	1	8	161
10:00	10:59	0	1	1	3	1	0	2	4
11:00	11:59	0	2	2	0	3	0	5	2
12:00	12:59	0	7	7	0	1	0	8	7
13:00	13:59	0	8	8	0	1	1	9	9
14:00	14:59	33	16	16	0	1	4	49	20
15:00	15:59	0	23	23	2	3	4	27	29
16:00	16:59	0	37	37	0	1	1	38	38
17:00	17:59	0	44	44	0	1	7	44	51
18:00	18:59	0	25	25	0	4	3	30	28
19:00	19:59	0	11	11	0	2	2	13	13
20:00	20:59	0	38	6	0	6	2	12	39
21:00	21:59	0	2	2	0	1	0	3	2
22:00	22:59	0	0	0	0	4	1	4	1
23:00	23:59	0	0	0	0	2	1	2	1
<u>Total</u>		<u>317</u>	<u>317</u>	<u>183</u>	<u>183</u>	<u>43</u>	<u>43</u>	<u>543</u>	<u>543</u>

Appendix B

Turning Movement Count Data Sheets

Intersection 1. South Bonnyview Road @ I-5 SB Ramps

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Bonnyview			E Bonnyview			S I5 SB On ramp			N I5 SB Off Ramp			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	7	10,569	3,177	2,985	7,658	4	-	1	-	2,369	317	194	27,281
10: 9am (9am-10am)	-	524	151	139	429	1	-	-	-	63	12	4	1,323
16: 3pm (3pm-4pm)	1	746	267	263	591	1	-	-	-	187	17	22	2,095
17: 4pm (4pm-5pm)	2	1,001	361	256	687	1	-	-	-	201	25	13	2,547
18: 5pm (5pm-6pm)	1	1,020	373	276	657	1	-	-	-	293	35	19	2,675
20: 7pm (7pm-8pm)	1	402	108	137	293	-	-	-	-	180	13	8	1,142
01: 12am (12am-1am)	-	61	11	9	41	-	-	-	-	11	4	4	141
02: 1am (1am-2am)	-	49	7	15	18	-	-	-	-	7	3	-	99
03: 2am (2am-3am)	-	32	9	10	10	-	-	-	-	7	-	-	68
04: 3am (3am-4am)	-	85	14	16	7	-	-	-	-	1	1	1	125
05: 4am (4am-5am)	-	99	34	19	27	-	-	-	-	37	5	1	222
06: 5am (5am-6am)	-	78	49	41	104	-	-	-	-	17	4	1	294
07: 6am (6am-7am)	-	362	120	89	280	-	-	-	-	39	5	8	903
08: 7am (7am-8am)	2	1,090	238	215	624	-	-	-	-	112	6	3	2,290
09: 8am (8am-9am)	-	569	156	117	536	-	-	-	-	99	11	5	1,493
11: 10am (10am-11am)	-	593	189	112	344	-	-	-	-	101	19	12	1,370
12: 11am (11am-12noon)	1	552	181	153	440	-	-	1	-	116	11	9	1,464
13: 12pm (12noon-1pm)	-	678	144	241	494	-	-	-	-	144	17	15	1,733
14: 1pm (1pm-2pm)	-	635	168	193	452	-	-	-	-	123	21	11	1,603
15: 2pm (2pm-3pm)	-	685	263	230	503	-	-	-	-	149	37	12	1,879
19: 6pm (6pm-7pm)	-	645	164	180	397	-	-	-	-	153	17	15	1,571
21: 8pm (8pm-9pm)	-	261	52	119	348	-	-	-	-	148	31	14	973
22: 9pm (9pm-10pm)	-	197	67	66	202	-	-	-	-	91	11	9	643
23: 10pm (10pm-11pm)	-	128	29	51	118	-	-	-	-	67	8	6	407
24: 11pm (11pm-12am)	-	77	23	36	58	-	-	-	-	23	4	-	221

TURNING MOVEMENT PERCENTAGE

Day Part	W Bonnyview			E Bonnyview			S I5 SB On ramp			N I5 SB Off Ramp		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	0%	77%	23%	28%	72%	0%	0%	100%	0%	82%	11%	7%
10: 9am (9am-10am)	0%	78%	22%	24%	75%	0%	-	-	-	80%	15%	5%
16: 3pm (3pm-4pm)	0%	74%	26%	31%	69%	0%	-	-	-	83%	8%	10%
17: 4pm (4pm-5pm)	0%	73%	26%	27%	73%	0%	-	-	-	84%	10%	5%
18: 5pm (5pm-6pm)	0%	73%	27%	30%	70%	0%	-	-	-	84%	10%	5%
20: 7pm (7pm-8pm)	0%	79%	21%	32%	68%	0%	-	-	-	90%	6%	4%
01: 12am (12am-1am)	0%	85%	15%	18%	82%	0%	-	-	-	58%	21%	21%
02: 1am (1am-2am)	0%	88%	13%	45%	55%	0%	-	-	-	70%	30%	0%
03: 2am (2am-3am)	0%	78%	22%	50%	50%	0%	-	-	-	100%	0%	0%
04: 3am (3am-4am)	0%	86%	14%	70%	30%	0%	-	-	-	33%	33%	33%
05: 4am (4am-5am)	0%	74%	26%	41%	59%	0%	-	-	-	86%	12%	2%
06: 5am (5am-6am)	0%	61%	39%	28%	72%	0%	-	-	-	77%	18%	5%
07: 6am (6am-7am)	0%	75%	25%	24%	76%	0%	-	-	-	75%	10%	15%
08: 7am (7am-8am)	0%	82%	18%	26%	74%	0%	-	-	-	93%	5%	2%
09: 8am (8am-9am)	0%	78%	22%	18%	82%	0%	-	-	-	86%	10%	4%
11: 10am (10am-11am)	0%	76%	24%	25%	75%	0%	-	-	-	77%	14%	9%
12: 11am (11am-12noon)	0%	75%	25%	26%	74%	0%	0%	100%	0%	85%	8%	7%
13: 12pm (12noon-1pm)	0%	82%	18%	33%	67%	0%	-	-	-	82%	10%	9%
14: 1pm (1pm-2pm)	0%	79%	21%	30%	70%	0%	-	-	-	79%	14%	7%
15: 2pm (2pm-3pm)	0%	72%	28%	31%	69%	0%	-	-	-	75%	19%	6%
19: 6pm (6pm-7pm)	0%	80%	20%	31%	69%	0%	-	-	-	83%	9%	8%
21: 8pm (8pm-9pm)	0%	83%	17%	25%	75%	0%	-	-	-	77%	16%	7%
22: 9pm (9pm-10pm)	0%	75%	25%	25%	75%	0%	-	-	-	82%	10%	8%
23: 10pm (10pm-11pm)	0%	82%	18%	30%	70%	0%	-	-	-	83%	10%	7%
24: 11pm (11pm-12am)	0%	77%	23%	38%	62%	0%	-	-	-	85%	15%	0%

Intersection 2. South Bonnyview Road @ I-5 NB Ramps

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Bonnyview			E Bonnyview			S I5 NB Off Ramp			N I5 NB On ramp			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	5,642	7,308	1	8	7,518	2,938	3,249	422	2,649	2	7	1	29,745
01: 12am (12am-1am)	43	32	-	-	37	15	17	3	23	-	-	-	170
02: 1am (1am-2am)	22	32	-	-	30	9	8	1	14	-	-	-	116
03: 2am (2am-3am)	15	24	-	-	21	4	2	-	7	-	-	-	73
04: 3am (3am-4am)	70	20	-	-	17	9	6	3	5	-	-	-	130
05: 4am (4am-5am)	96	53	-	-	35	25	15	2	25	-	-	-	251
06: 5am (5am-6am)	56	44	-	1	71	59	80	16	32	-	-	-	359
07: 6am (6am-7am)	272	128	-	-	224	108	152	19	108	-	-	-	1,011
08: 7am (7am-8am)	569	638	-	-	514	386	382	41	239	-	-	-	2,769
09: 8am (8am-9am)	352	323	-	-	403	181	281	32	108	-	-	-	1,680
10: 9am (9am-10am)	305	283	-	-	379	154	204	26	96	-	-	-	1,447
11: 10am (10am-11am)	339	353	-	1	328	188	167	24	128	-	1	-	1,529
12: 11am (11am-12noon)	290	373	-	2	453	172	150	22	134	-	1	-	1,597
13: 12pm (12noon-1pm)	330	484	-	-	543	189	189	23	146	2	1	-	1,907
14: 1pm (1pm-2pm)	341	417	-	-	455	172	175	26	190	-	-	-	1,776
15: 2pm (2pm-3pm)	335	494	-	2	567	136	196	22	200	-	-	-	1,952
16: 3pm (3pm-4pm)	370	555	-	-	629	207	203	24	236	-	1	-	2,225
17: 4pm (4pm-5pm)	481	710	-	1	681	216	279	35	208	-	1	-	2,612
18: 5pm (5pm-6pm)	512	798	-	1	682	273	242	40	256	-	1	-	2,805
19: 6pm (6pm-7pm)	337	460	-	-	415	160	158	11	169	-	-	-	1,710
20: 7pm (7pm-8pm)	200	396	-	-	289	104	111	15	103	-	1	-	1,219
21: 8pm (8pm-9pm)	110	302	-	-	342	48	112	11	80	-	-	-	1,005
22: 9pm (9pm-10pm)	104	189	1	-	221	58	57	15	79	-	-	-	724
23: 10pm (10pm-11pm)	56	136	1	-	127	38	37	8	43	-	-	1	447
24: 11pm (11pm-12am)	37	64	-	-	57	24	25	2	19	-	-	-	228

TURNING MOVEMENT PERCENTAGE

Day Part	W Bonnyview			E Bonnyview			S I5 NB Off Ramp			N I5 NB On ramp		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	44%	56%	0%	0%	72%	28%	51%	7%	42%	20%	70%	10%
01: 12am (12am-1am)	57%	43%	0%	0%	71%	29%	40%	7%	53%	-	-	-
02: 1am (1am-2am)	41%	59%	0%	0%	77%	23%	35%	4%	61%	-	-	-
03: 2am (2am-3am)	38%	62%	0%	0%	84%	16%	22%	0%	78%	-	-	-
04: 3am (3am-4am)	78%	22%	0%	0%	65%	35%	43%	21%	36%	-	-	-
05: 4am (4am-5am)	64%	36%	0%	0%	58%	42%	36%	5%	60%	-	-	-
06: 5am (5am-6am)	56%	44%	0%	1%	54%	45%	63%	13%	25%	-	-	-
07: 6am (6am-7am)	68%	32%	0%	0%	67%	33%	54%	7%	39%	-	-	-
08: 7am (7am-8am)	47%	53%	0%	0%	57%	43%	58%	6%	36%	-	-	-
09: 8am (8am-9am)	52%	48%	0%	0%	69%	31%	67%	8%	26%	-	-	-
10: 9am (9am-10am)	52%	48%	0%	0%	71%	29%	63%	8%	29%	-	-	-
11: 10am (10am-11am)	49%	51%	0%	0%	63%	36%	52%	8%	40%	0%	100%	0%
12: 11am (11am-12noon)	44%	56%	0%	0%	72%	27%	49%	7%	44%	0%	100%	0%
13: 12pm (12noon-1pm)	41%	59%	0%	0%	74%	26%	53%	6%	41%	67%	33%	0%
14: 1pm (1pm-2pm)	45%	55%	0%	0%	73%	27%	45%	7%	49%	-	-	-
15: 2pm (2pm-3pm)	40%	60%	0%	0%	80%	19%	47%	5%	48%	-	-	-
16: 3pm (3pm-4pm)	40%	60%	0%	0%	75%	25%	44%	5%	51%	0%	100%	0%
17: 4pm (4pm-5pm)	40%	60%	0%	0%	76%	24%	53%	7%	40%	0%	100%	0%
18: 5pm (5pm-6pm)	39%	61%	0%	0%	71%	29%	45%	7%	48%	0%	100%	0%
19: 6pm (6pm-7pm)	42%	58%	0%	0%	72%	28%	47%	3%	50%	-	-	-
20: 7pm (7pm-8pm)	34%	66%	0%	0%	74%	26%	48%	7%	45%	0%	100%	0%
21: 8pm (8pm-9pm)	27%	73%	0%	0%	88%	12%	55%	5%	39%	-	-	-
22: 9pm (9pm-10pm)	35%	64%	0%	0%	79%	21%	38%	10%	52%	-	-	-
23: 10pm (10pm-11pm)	29%	70%	1%	0%	77%	23%	42%	9%	49%	0%	0%	100%
24: 11pm (11pm-12am)	37%	63%	0%	0%	70%	30%	54%	4%	41%	-	-	-

Intersection 3. South Bonnyview Road @ Churn Creek Road

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	E Bonnyview			E Churn Creek			O			N Churn Creek			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	4,426	5,163	-	-	5,575	1,321	-	-	-	1,295	-	5,955	23,735
01: 12am (12am-1am)	30	18	-	-	26	4	-	-	-	9	-	30	117
02: 1am (1am-2am)	19	23	-	-	17	1	-	-	-	4	-	22	86
03: 2am (2am-3am)	11	20	-	-	8	1	-	-	-	-	-	18	58
04: 3am (3am-4am)	13	14	-	-	9	1	-	-	-	-	-	20	57
05: 4am (4am-5am)	30	42	-	-	40	1	-	-	-	5	-	28	146
06: 5am (5am-6am)	42	29	-	-	104	5	-	-	-	2	-	27	209
07: 6am (6am-7am)	96	121	-	-	233	30	-	-	-	32	-	109	621
08: 7am (7am-8am)	481	377	-	-	575	260	-	-	-	64	-	391	2,148
09: 8am (8am-9am)	202	218	-	-	348	64	-	-	-	47	-	265	1,144
10: 9am (9am-10am)	174	189	-	-	326	41	-	-	-	43	-	231	1,004
11: 10am (10am-11am)	219	251	-	-	290	51	-	-	-	49	-	259	1,119
12: 11am (11am-12noon)	235	248	-	-	288	53	-	-	-	69	-	399	1,292
13: 12pm (12noon-1pm)	286	315	-	-	394	88	-	-	-	94	-	428	1,605
14: 1pm (1pm-2pm)	296	288	-	-	293	93	-	-	-	91	-	428	1,489
15: 2pm (2pm-3pm)	311	368	-	-	315	87	-	-	-	128	-	467	1,676
16: 3pm (3pm-4pm)	349	399	-	-	452	75	-	-	-	114	-	489	1,878
17: 4pm (4pm-5pm)	398	491	-	-	482	113	-	-	-	106	-	524	2,114
18: 5pm (5pm-6pm)	429	609	-	-	510	154	-	-	-	140	-	586	2,428
19: 6pm (6pm-7pm)	244	359	-	-	284	90	-	-	-	86	-	337	1,400
20: 7pm (7pm-8pm)	208	269	-	-	187	49	-	-	-	72	-	279	1,064
21: 8pm (8pm-9pm)	149	203	-	-	164	30	-	-	-	65	-	277	888
22: 9pm (9pm-10pm)	101	156	-	-	116	16	-	-	-	42	-	191	622
23: 10pm (10pm-11pm)	62	116	-	-	76	9	-	-	-	21	-	100	384
24: 11pm (11pm-12am)	41	40	-	-	38	7	-	-	-	10	-	52	188

TURNING MOVEMENT PERCENTAGE

Day Part	E Bonnyview			E Churn Creek			O			N Churn Creek		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	46%	54%	0%	0%	81%	19%	-	-	-	18%	0%	82%
01: 12am (12am-1am)	63%	38%	0%	0%	87%	13%	-	-	-	23%	0%	77%
02: 1am (1am-2am)	45%	55%	0%	0%	94%	6%	-	-	-	15%	0%	85%
03: 2am (2am-3am)	35%	65%	0%	0%	89%	11%	-	-	-	0%	0%	100%
04: 3am (3am-4am)	48%	52%	0%	0%	90%	10%	-	-	-	0%	0%	100%
05: 4am (4am-5am)	42%	58%	0%	0%	98%	2%	-	-	-	15%	0%	85%
06: 5am (5am-6am)	59%	41%	0%	0%	95%	5%	-	-	-	7%	0%	93%
07: 6am (6am-7am)	44%	56%	0%	0%	89%	11%	-	-	-	23%	0%	77%
08: 7am (7am-8am)	56%	44%	0%	0%	69%	31%	-	-	-	14%	0%	86%
09: 8am (8am-9am)	48%	52%	0%	0%	84%	16%	-	-	-	15%	0%	85%
10: 9am (9am-10am)	48%	52%	0%	0%	89%	11%	-	-	-	16%	0%	84%
11: 10am (10am-11am)	47%	53%	0%	0%	85%	15%	-	-	-	16%	0%	84%
12: 11am (11am-12noon)	49%	51%	0%	0%	84%	16%	-	-	-	15%	0%	85%
13: 12pm (12noon-1pm)	48%	52%	0%	0%	82%	18%	-	-	-	18%	0%	82%
14: 1pm (1pm-2pm)	51%	49%	0%	0%	76%	24%	-	-	-	18%	0%	82%
15: 2pm (2pm-3pm)	46%	54%	0%	0%	78%	22%	-	-	-	22%	0%	78%
16: 3pm (3pm-4pm)	47%	53%	0%	0%	86%	14%	-	-	-	19%	0%	81%
17: 4pm (4pm-5pm)	45%	55%	0%	0%	81%	19%	-	-	-	17%	0%	83%
18: 5pm (5pm-6pm)	41%	59%	0%	0%	77%	23%	-	-	-	19%	0%	81%
19: 6pm (6pm-7pm)	40%	60%	0%	0%	76%	24%	-	-	-	20%	0%	80%
20: 7pm (7pm-8pm)	44%	56%	0%	0%	79%	21%	-	-	-	21%	0%	79%
21: 8pm (8pm-9pm)	42%	58%	0%	0%	85%	15%	-	-	-	19%	0%	81%
22: 9pm (9pm-10pm)	39%	61%	0%	0%	88%	12%	-	-	-	18%	0%	82%
23: 10pm (10pm-11pm)	35%	65%	0%	0%	89%	11%	-	-	-	17%	0%	83%
24: 11pm (11pm-12am)	51%	49%	0%	0%	84%	16%	-	-	-	16%	0%	84%

Intersection 4. Churn Creek Road @ Victor Avenue & Intersection 5. Churn Creek Road @ Rancho Road

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Churn Creek Rd			E Rancho			S Churn Creek Rd			N Victor Ave			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	1,110	3,231	1,200	259	3,160	92	757	532	352	137	697	1,438	12,965
01: 12am (12am-1am)	4	17	3	2	13	-	-	1	2	-	2	9	53
02: 1am (1am-2am)	9	16	2	-	4	-	-	-	5	-	-	2	38
03: 2am (2am-3am)	9	3	6	-	6	-	2	-	1	-	-	1	28
04: 3am (3am-4am)	-	10	1	-	2	2	-	1	1	-	1	2	20
05: 4am (4am-5am)	-	5	-	1	17	3	10	5	8	-	1	16	66
07: 6am (6am-7am)	1	68	62	14	123	-	27	2	13	3	46	74	433
08: 7am (7am-8am)	36	287	28	39	338	-	71	50	19	13	40	226	1,147
09: 8am (8am-9am)	38	154	34	12	184	1	43	25	34	4	71	71	671
10: 9am (9am-10am)	51	123	30	12	166	3	55	19	12	2	51	68	592
11: 10am (10am-11am)	49	153	44	10	155	4	45	19	9	9	23	66	586
12: 11am (11am-12noon)	46	154	59	18	197	9	57	29	13	5	30	43	660
13: 12pm (12noon-1pm)	78	195	63	17	214	5	44	32	27	10	30	80	795
14: 1pm (1pm-2pm)	63	212	56	13	163	11	40	36	21	7	43	89	754
15: 2pm (2pm-3pm)	98	221	118	18	190	10	45	29	26	18	49	103	925
16: 3pm (3pm-4pm)	91	279	99	20	253	9	61	77	25	11	61	95	1,081
17: 4pm (4pm-5pm)	111	280	128	14	337	4	58	79	15	11	65	101	1,203
18: 5pm (5pm-6pm)	112	352	137	17	287	6	72	51	47	13	46	125	1,265
19: 6pm (6pm-7pm)	113	222	81	12	147	5	51	37	7	5	52	70	802
20: 7pm (7pm-8pm)	86	130	95	10	115	6	23	14	17	12	24	33	565
21: 8pm (8pm-9pm)	47	106	87	6	113	4	17	11	9	9	28	42	479
22: 9pm (9pm-10pm)	29	95	35	14	64	2	13	5	14	2	11	35	319
23: 10pm (10pm-11pm)	29	67	24	6	30	6	10	5	17	1	4	16	215
24: 11pm (11pm-12am)	3	51	6	1	13	1	4	-	1	2	1	7	90
06: 5am (5am-6am)	8	32	2	2	30	-	9	5	10	-	18	63	179

TURNING MOVEMENT PERCENTAGE

Day Part	W Churn Creek Rd			E Rancho			S Churn Creek Rd			N Victor Ave		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	20%	58%	22%	7%	90%	3%	46%	32%	21%	6%	31%	63%
01: 12am (12am-1am)	17%	71%	13%	13%	87%	0%	0%	33%	67%	0%	18%	82%
02: 1am (1am-2am)	33%	59%	7%	0%	100%	0%	0%	0%	100%	0%	0%	100%
03: 2am (2am-3am)	50%	17%	33%	0%	100%	0%	67%	0%	33%	0%	0%	100%
04: 3am (3am-4am)	0%	91%	9%	0%	50%	50%	0%	50%	50%	0%	33%	67%
05: 4am (4am-5am)	0%	100%	0%	5%	81%	14%	43%	22%	35%	0%	6%	94%
07: 6am (6am-7am)	1%	52%	47%	10%	90%	0%	64%	5%	31%	2%	37%	60%
08: 7am (7am-8am)	10%	82%	8%	10%	90%	0%	51%	36%	14%	5%	14%	81%
09: 8am (8am-9am)	17%	68%	15%	6%	93%	1%	42%	25%	33%	3%	49%	49%
10: 9am (9am-10am)	25%	60%	15%	7%	92%	2%	64%	22%	14%	2%	42%	56%
11: 10am (10am-11am)	20%	62%	18%	6%	92%	2%	62%	26%	12%	9%	23%	67%
12: 11am (11am-12noon)	18%	59%	23%	8%	88%	4%	58%	29%	13%	6%	38%	55%
13: 12pm (12noon-1pm)	23%	58%	19%	7%	91%	2%	43%	31%	26%	8%	25%	67%
14: 1pm (1pm-2pm)	19%	64%	17%	7%	87%	6%	41%	37%	22%	5%	31%	64%
15: 2pm (2pm-3pm)	22%	51%	27%	8%	87%	5%	45%	29%	26%	11%	29%	61%
16: 3pm (3pm-4pm)	19%	59%	21%	7%	90%	3%	37%	47%	15%	7%	37%	57%
17: 4pm (4pm-5pm)	21%	54%	25%	4%	95%	1%	38%	52%	10%	6%	37%	57%
18: 5pm (5pm-6pm)	19%	59%	23%	5%	93%	2%	42%	30%	28%	7%	25%	68%
19: 6pm (6pm-7pm)	27%	53%	19%	7%	90%	3%	54%	39%	7%	4%	41%	55%
20: 7pm (7pm-8pm)	28%	42%	31%	8%	88%	5%	43%	26%	31%	17%	35%	48%
21: 8pm (8pm-9pm)	20%	44%	36%	5%	92%	3%	46%	30%	24%	11%	35%	53%
22: 9pm (9pm-10pm)	18%	60%	22%	18%	80%	3%	41%	16%	44%	4%	23%	73%
23: 10pm (10pm-11pm)	24%	56%	20%	14%	71%	14%	31%	16%	53%	5%	19%	76%
24: 11pm (11pm-12am)	5%	85%	10%	7%	87%	7%	80%	0%	20%	20%	10%	70%
06: 5am (5am-6am)	19%	76%	5%	6%	94%	0%	38%	21%	42%	0%	22%	78%

Intersection 6. Rancho Road @ Alta Mesa Drive

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Rancho			E Rancho			O			N Alta Mesa			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	531	3,291	-	-	2,991	223	-	-	-	224	-	544	7,804
02: 1am (1am-2am)	7	15	-	-	3	1	-	-	-	-	-	1	27
04: 3am (3am-4am)	2	9	-	-	4	-	-	-	-	-	-	-	15
06: 5am (5am-6am)	9	34	-	-	32	-	-	-	-	19	-	2	96
07: 6am (6am-7am)	2	90	-	-	131	3	-	-	-	14	-	12	252
08: 7am (7am-8am)	30	288	-	-	297	4	-	-	-	62	-	94	775
09: 8am (8am-9am)	38	166	-	-	185	17	-	-	-	9	-	20	435
10: 9am (9am-10am)	20	112	-	-	146	9	-	-	-	7	-	26	320
11: 10am (10am-11am)	15	162	-	-	139	8	-	-	-	2	-	19	345
12: 11am (11am-12noon)	16	169	-	-	195	4	-	-	-	9	-	32	425
13: 12pm (12noon-1pm)	42	196	-	-	206	15	-	-	-	10	-	35	504
14: 1pm (1pm-2pm)	39	199	-	-	155	7	-	-	-	15	-	29	444
15: 2pm (2pm-3pm)	36	241	-	-	184	22	-	-	-	7	-	38	528
16: 3pm (3pm-4pm)	33	301	-	-	239	52	-	-	-	13	-	47	685
17: 4pm (4pm-5pm)	44	275	-	-	305	26	-	-	-	15	-	54	719
18: 5pm (5pm-6pm)	61	358	-	-	266	17	-	-	-	9	-	49	760
19: 6pm (6pm-7pm)	36	197	-	-	129	14	-	-	-	3	-	28	407
20: 7pm (7pm-8pm)	18	146	-	-	124	12	-	-	-	8	-	14	322
21: 8pm (8pm-9pm)	17	109	-	-	101	2	-	-	-	10	-	19	258
22: 9pm (9pm-10pm)	16	95	-	-	70	3	-	-	-	6	-	7	197
23: 10pm (10pm-11pm)	36	54	-	-	39	2	-	-	-	3	-	7	141
24: 11pm (11pm-12am)	9	41	-	-	11	3	-	-	-	2	-	3	69
01: 12am (12am-1am)	4	16	-	-	13	-	-	-	-	-	-	2	35
03: 2am (2am-3am)	1	2	-	-	6	-	-	-	-	-	-	1	10
05: 4am (4am-5am)	-	13	-	-	10	-	-	-	-	1	-	4	28

TURNING MOVEMENT PERCENTAGE

Day Part	W Rancho			E Rancho			O			N Alta Mesa		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	14%	86%	0%	0%	93%	7%	-	-	-	29%	0%	71%
02: 1am (1am-2am)	32%	68%	0%	0%	75%	25%	-	-	-	0%	0%	100%
04: 3am (3am-4am)	18%	82%	0%	0%	100%	0%	-	-	-	-	-	-
06: 5am (5am-6am)	21%	79%	0%	0%	100%	0%	-	-	-	90%	0%	10%
07: 6am (6am-7am)	2%	98%	0%	0%	98%	2%	-	-	-	54%	0%	46%
08: 7am (7am-8am)	9%	91%	0%	0%	99%	1%	-	-	-	40%	0%	60%
09: 8am (8am-9am)	19%	81%	0%	0%	92%	8%	-	-	-	31%	0%	69%
10: 9am (9am-10am)	15%	85%	0%	0%	94%	6%	-	-	-	21%	0%	79%
11: 10am (10am-11am)	8%	92%	0%	0%	95%	5%	-	-	-	10%	0%	90%
12: 11am (11am-12noon)	9%	91%	0%	0%	98%	2%	-	-	-	22%	0%	78%
13: 12pm (12noon-1pm)	18%	82%	0%	0%	93%	7%	-	-	-	22%	0%	78%
14: 1pm (1pm-2pm)	16%	84%	0%	0%	96%	4%	-	-	-	34%	0%	66%
15: 2pm (2pm-3pm)	13%	87%	0%	0%	89%	11%	-	-	-	16%	0%	84%
16: 3pm (3pm-4pm)	10%	90%	0%	0%	82%	18%	-	-	-	22%	0%	78%
17: 4pm (4pm-5pm)	14%	86%	0%	0%	92%	8%	-	-	-	22%	0%	78%
18: 5pm (5pm-6pm)	15%	85%	0%	0%	94%	6%	-	-	-	16%	0%	84%
19: 6pm (6pm-7pm)	15%	85%	0%	0%	90%	10%	-	-	-	10%	0%	90%
20: 7pm (7pm-8pm)	11%	89%	0%	0%	91%	9%	-	-	-	36%	0%	64%
21: 8pm (8pm-9pm)	13%	87%	0%	0%	98%	2%	-	-	-	34%	0%	66%
22: 9pm (9pm-10pm)	14%	86%	0%	0%	96%	4%	-	-	-	46%	0%	54%
23: 10pm (10pm-11pm)	40%	60%	0%	0%	95%	5%	-	-	-	30%	0%	70%
24: 11pm (11pm-12am)	18%	82%	0%	0%	79%	21%	-	-	-	40%	0%	60%
01: 12am (12am-1am)	20%	80%	0%	0%	100%	0%	-	-	-	0%	0%	100%
03: 2am (2am-3am)	33%	67%	0%	0%	100%	0%	-	-	-	0%	0%	100%
05: 4am (4am-5am)	0%	100%	0%	0%	100%	0%	-	-	-	20%	0%	80%

Intersection 7. Rancho Road @ Shasta View Drive

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Rancho			E Rancho			O			N Shasta View			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	859	2,436	-	-	2,370	489	-	-	-	533	-	867	7,554
01: 12am (12am-1am)	7	4	-	-	10	2	-	-	-	1	-	4	28
04: 3am (3am-4am)	5	4	-	-	2	2	-	-	-	2	-	4	19
05: 4am (4am-5am)	4	14	-	-	3	-	-	-	-	13	-	1	35
07: 6am (6am-7am)	12	141	-	-	69	11	-	-	-	23	-	48	304
08: 7am (7am-8am)	27	400	-	-	114	34	-	-	-	42	-	138	755
09: 8am (8am-9am)	25	170	-	-	148	24	-	-	-	48	-	45	460
10: 9am (9am-10am)	34	68	-	-	97	12	-	-	-	29	-	48	288
11: 10am (10am-11am)	30	120	-	-	102	22	-	-	-	35	-	47	356
12: 11am (11am-12noon)	49	105	-	-	155	36	-	-	-	32	-	45	422
13: 12pm (12noon-1pm)	48	139	-	-	193	37	-	-	-	35	-	33	485
14: 1pm (1pm-2pm)	69	128	-	-	121	32	-	-	-	27	-	46	423
15: 2pm (2pm-3pm)	68	150	-	-	173	37	-	-	-	31	-	54	513
16: 3pm (3pm-4pm)	92	185	-	-	192	37	-	-	-	33	-	83	622
17: 4pm (4pm-5pm)	68	225	-	-	293	49	-	-	-	41	-	79	755
18: 5pm (5pm-6pm)	131	209	-	-	251	53	-	-	-	52	-	43	739
19: 6pm (6pm-7pm)	64	114	-	-	93	33	-	-	-	25	-	46	375
20: 7pm (7pm-8pm)	40	73	-	-	133	23	-	-	-	13	-	27	309
21: 8pm (8pm-9pm)	25	57	-	-	101	14	-	-	-	23	-	29	249
22: 9pm (9pm-10pm)	36	31	-	-	55	13	-	-	-	5	-	24	164
23: 10pm (10pm-11pm)	12	27	-	-	31	12	-	-	-	4	-	12	98
24: 11pm (11pm-12am)	7	32	-	-	10	5	-	-	-	1	-	6	61
02: 1am (1am-2am)	7	1	-	-	3	-	-	-	-	1	-	1	13
03: 2am (2am-3am)	-	1	-	-	3	-	-	-	-	-	-	2	6
06: 5am (5am-6am)	-	38	-	-	20	-	-	-	-	17	-	4	79

TURNING MOVEMENT PERCENTAGE

Day Part	W Rancho			E Rancho			O			N Shasta View		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	26%	74%	0%	0%	83%	17%	-	-	-	38%	0%	62%
01: 12am (12am-1am)	64%	36%	0%	0%	83%	17%	-	-	-	20%	0%	80%
04: 3am (3am-4am)	56%	44%	0%	0%	50%	50%	-	-	-	33%	0%	67%
05: 4am (4am-5am)	22%	78%	0%	0%	100%	0%	-	-	-	93%	0%	7%
07: 6am (6am-7am)	8%	92%	0%	0%	86%	14%	-	-	-	32%	0%	68%
08: 7am (7am-8am)	6%	94%	0%	0%	77%	23%	-	-	-	23%	0%	77%
09: 8am (8am-9am)	13%	87%	0%	0%	86%	14%	-	-	-	52%	0%	48%
10: 9am (9am-10am)	33%	67%	0%	0%	89%	11%	-	-	-	38%	0%	62%
11: 10am (10am-11am)	20%	80%	0%	0%	82%	18%	-	-	-	43%	0%	57%
12: 11am (11am-12noon)	32%	68%	0%	0%	81%	19%	-	-	-	42%	0%	58%
13: 12pm (12noon-1pm)	26%	74%	0%	0%	84%	16%	-	-	-	51%	0%	49%
14: 1pm (1pm-2pm)	35%	65%	0%	0%	79%	21%	-	-	-	37%	0%	63%
15: 2pm (2pm-3pm)	31%	69%	0%	0%	82%	18%	-	-	-	36%	0%	64%
16: 3pm (3pm-4pm)	33%	67%	0%	0%	84%	16%	-	-	-	28%	0%	72%
17: 4pm (4pm-5pm)	23%	77%	0%	0%	86%	14%	-	-	-	34%	0%	66%
18: 5pm (5pm-6pm)	39%	61%	0%	0%	83%	17%	-	-	-	55%	0%	45%
19: 6pm (6pm-7pm)	36%	64%	0%	0%	74%	26%	-	-	-	35%	0%	65%
20: 7pm (7pm-8pm)	35%	65%	0%	0%	85%	15%	-	-	-	33%	0%	68%
21: 8pm (8pm-9pm)	30%	70%	0%	0%	88%	12%	-	-	-	44%	0%	56%
22: 9pm (9pm-10pm)	54%	46%	0%	0%	81%	19%	-	-	-	17%	0%	83%
23: 10pm (10pm-11pm)	31%	69%	0%	0%	72%	28%	-	-	-	25%	0%	75%
24: 11pm (11pm-12am)	18%	82%	0%	0%	67%	33%	-	-	-	14%	0%	86%
02: 1am (1am-2am)	88%	13%	0%	0%	100%	0%	-	-	-	50%	0%	50%
03: 2am (2am-3am)	0%	100%	0%	0%	100%	0%	-	-	-	0%	0%	100%
06: 5am (5am-6am)	0%	100%	0%	0%	100%	0%	-	-	-	81%	0%	19%

Intersection 8. Rancho Road @ Airport Road

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Rancho			E Rancho			S Airport			N Airport			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	2,056	101	1,026	53	94	133	950	3,758	61	138	4,040	2,011	14,421
01: 12am (12am-1am)	6	1	2	-	1	1	3	12	1	-	16	7	50
02: 1am (1am-2am)	8	-	1	-	1	4	2	32	-	-	5	1	54
03: 2am (2am-3am)	3	-	-	-	-	1	-	5	-	2	4	3	18
04: 3am (3am-4am)	2	2	5	-	-	1	2	8	-	-	3	1	24
05: 4am (4am-5am)	9	1	16	1	-	1	2	47	-	-	42	2	121
06: 5am (5am-6am)	33	1	18	-	-	-	4	75	-	-	89	17	237
07: 6am (6am-7am)	125	16	43	-	2	2	27	206	6	2	218	54	701
08: 7am (7am-8am)	447	4	125	-	11	25	48	377	-	3	270	60	1,370
09: 8am (8am-9am)	146	6	93	5	-	1	60	231	6	28	245	120	941
10: 9am (9am-10am)	59	4	44	3	2	4	36	252	6	14	166	83	673
11: 10am (10am-11am)	105	6	59	2	5	11	59	169	3	14	186	86	705
12: 11am (11am-12noon)	82	5	62	6	14	12	80	199	11	9	212	99	791
13: 12pm (12noon-1pm)	108	5	78	7	7	5	61	220	6	10	288	164	959
14: 1pm (1pm-2pm)	75	7	73	-	5	8	55	260	3	7	267	94	854
15: 2pm (2pm-3pm)	114	4	58	4	6	9	83	239	6	9	296	146	974
16: 3pm (3pm-4pm)	158	21	59	9	10	8	57	306	2	25	393	228	1,276
17: 4pm (4pm-5pm)	161	6	90	5	12	18	118	304	4	2	345	231	1,296
18: 5pm (5pm-6pm)	159	1	80	7	8	13	117	277	-	5	368	174	1,209
19: 6pm (6pm-7pm)	104	-	40	3	-	1	39	170	1	-	226	101	685
20: 7pm (7pm-8pm)	62	1	24	-	4	-	45	114	1	2	164	113	530
21: 8pm (8pm-9pm)	49	3	17	1	2	3	18	89	2	3	108	109	404
22: 9pm (9pm-10pm)	25	1	10	1	2	1	22	96	-	1	78	67	304
23: 10pm (10pm-11pm)	10	6	9	-	2	1	2	51	-	1	40	40	162
24: 11pm (11pm-12am)	8	-	21	-	-	1	9	17	1	2	10	12	81

TURNING MOVEMENT PERCENTAGE

Day Part	W Rancho			E Rancho			S Airport			N Airport		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	65%	3%	32%	19%	34%	48%	20%	79%	1%	2%	65%	32%
01: 12am (12am-1am)	67%	11%	22%	0%	50%	50%	19%	75%	6%	0%	70%	30%
02: 1am (1am-2am)	89%	0%	11%	0%	20%	80%	6%	94%	0%	0%	83%	17%
03: 2am (2am-3am)	100%	0%	0%	0%	0%	100%	0%	100%	0%	22%	44%	33%
04: 3am (3am-4am)	22%	22%	56%	0%	0%	100%	20%	80%	0%	0%	75%	25%
05: 4am (4am-5am)	35%	4%	62%	50%	0%	50%	4%	96%	0%	0%	95%	5%
06: 5am (5am-6am)	63%	2%	35%	-	-	-	5%	95%	0%	0%	84%	16%
07: 6am (6am-7am)	68%	9%	23%	0%	50%	50%	11%	86%	3%	1%	80%	20%
08: 7am (7am-8am)	78%	1%	22%	0%	31%	69%	11%	89%	0%	1%	81%	18%
09: 8am (8am-9am)	60%	2%	38%	83%	0%	17%	20%	78%	2%	7%	62%	31%
10: 9am (9am-10am)	55%	4%	41%	33%	22%	44%	12%	86%	2%	5%	63%	32%
11: 10am (10am-11am)	62%	4%	35%	11%	28%	61%	26%	73%	1%	5%	65%	30%
12: 11am (11am-12noon)	55%	3%	42%	19%	44%	38%	28%	69%	4%	3%	66%	31%
13: 12pm (12noon-1pm)	57%	3%	41%	37%	37%	26%	21%	77%	2%	2%	62%	35%
14: 1pm (1pm-2pm)	48%	5%	47%	0%	38%	62%	17%	82%	1%	2%	73%	26%
15: 2pm (2pm-3pm)	65%	2%	33%	21%	32%	47%	25%	73%	2%	2%	66%	32%
16: 3pm (3pm-4pm)	66%	9%	25%	33%	37%	30%	16%	84%	1%	4%	61%	35%
17: 4pm (4pm-5pm)	63%	2%	35%	14%	34%	51%	28%	71%	1%	0%	60%	40%
18: 5pm (5pm-6pm)	66%	0%	33%	25%	29%	46%	30%	70%	0%	1%	67%	32%
19: 6pm (6pm-7pm)	72%	0%	28%	75%	0%	25%	19%	81%	0%	0%	69%	31%
20: 7pm (7pm-8pm)	71%	1%	28%	0%	100%	0%	28%	71%	1%	1%	59%	41%
21: 8pm (8pm-9pm)	71%	4%	25%	17%	33%	50%	17%	82%	2%	1%	49%	50%
22: 9pm (9pm-10pm)	69%	3%	28%	25%	50%	25%	19%	81%	0%	1%	53%	46%
23: 10pm (10pm-11pm)	40%	24%	36%	0%	67%	33%	4%	96%	0%	1%	49%	49%
24: 11pm (11pm-12am)	28%	0%	72%	0%	0%	100%	33%	63%	4%	8%	42%	50%

Intersection 9. Airport Road @ SR-44 WB Ramps

All Traffic Data Services

1 AIRPORT RD & S.R. 44 WB RAMPS AM

Tuesday, April 27, 2021

Peak Hour

07:15 AM - 08:15 AM

Peak 15-Minutes

07:45 AM - 08:00 AM

Traffic Counts - All Vehicles

Time	S.R. 44 WB RAMPS					S.R. 44 WB RAMPS					AIRPORT RD					AIRPORT RD					Total	Rolling Hour
	Eastbound					Westbound					Northbound					Southbound						
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR		
7:00 AM	0	0	0	0	0	0	15	0	10	0	0	36	87	0	0	0	0	63	43	0	254	1,418
7:15 AM	0	0	0	0	0	0	23	0	16	0	0	45	113	0	0	0	0	74	49	0	320	1,535
7:30 AM	0	0	0	0	0	0	13	0	13	0	0	56	133	0	0	0	0	96	66	0	377	1,497
7:45 AM	0	0	0	0	0	0	27	0	19	0	0	67	159	0	0	0	0	109	86	0	467	1,384
8:00 AM	0	0	0	0	0	0	41	0	18	0	0	54	99	0	0	0	0	87	72	0	371	1,186
8:15 AM	0	0	0	0	0	0	35	0	10	0	0	33	83	0	0	0	0	65	56	0	282	0
8:30 AM	0	0	0	0	0	0	18	0	10	0	0	40	84	0	0	0	0	71	41	0	264	0
8:45 AM	0	0	0	0	0	0	20	0	12	0	0	47	75	0	0	0	0	69	46	0	269	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	2	3	0	14
Lights	0	0	0	0	0	0	103	0	66	0	0	216	481	0	0	0	0	337	262	0	1,465
Mediums	0	0	0	0	0	0	1	0	0	0	0	5	15	0	0	0	0	27	8	0	56
Total	0	0	0	0	0	0	104	0	66	0	0	222	504	0	0	0	0	366	273	0	1,535
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Bicycles on Crosswalk			1					0					0					0			1
Heavy Vehicle Percentage			0.0%					0.6%					4.0%					6.3%			4.6%
Heavy Vehicle Percentage	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	2.7%	4.6%	0.0%	0.0%	0.0%	0.0%	7.9%	4.0%	0.0%	4.6%
Peak Hour Factor (PHF)			0.00					0.75					0.80					0.82			0.82
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.87	0.00	0.00	0.83	0.79	0.00	0.00	0.00	0.00	0.84	0.81	0.00	0.82

Traffic Counts by Vehicle Type

Time	Eastbound						Westbound						Northbound						Southbound						Total
	U-Turn	Left	Thru	Right	RTOR		U-Turn	Left	Thru	Right	RTOR		U-Turn	Left	Thru	Right	RTOR		U-Turn	Left	Thru	Right	RTOR		
Articulated Trucks																									
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	1	6	0	0	11
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	4
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0	0	3	0	0	7
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Lights																									
7:00 AM	0	0	0	0	0	0	0	15	0	10	0	0	0	33	84	0	0	0	0	0	60	35	0	0	237

Intersection 9. Airport Road @ SR-44 WB Ramps

[illegible]

Bicycles on Crosswalk

[illegible]

Pedestrians

[illegible]

Intersection 9. Airport Road @ SR-44 WB Ramps

All Traffic Data Services

1 AIRPORT RD & S.R. 44 WB RAMPS PM

Tuesday, April 27, 2021

Peak Hour

04:30 PM - 05:30 PM

Peak 15-Minutes

05:00 PM - 05:15 PM

Traffic Counts - All Vehicles

Time	S.R. 44 WB RAMPS					S.R. 44 WB RAMPS					AIRPORT RD					AIRPORT RD					Total	Rolling Hour
	Eastbound					Westbound					Northbound					Southbound						
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR		
4:00 PM	0	0	0	0	0	0	18	0	8	0	0	69	102	0	0	0	0	84	76	0	357	1,359
4:15 PM	0	0	0	0	0	0	21	0	8	0	0	54	94	0	0	0	0	72	59	0	308	1,411
4:30 PM	0	0	0	0	0	0	13	0	8	0	0	65	117	0	0	0	0	76	67	0	346	1,467
4:45 PM	0	0	0	0	0	0	19	0	8	0	0	72	124	0	0	0	0	74	51	0	348	1,408
5:00 PM	0	0	0	0	0	0	17	0	12	0	0	81	121	0	0	0	0	102	76	0	409	1,338
5:15 PM	0	0	0	0	0	0	10	0	12	0	0	47	170	0	0	0	0	80	45	0	364	0
5:30 PM	0	0	0	0	0	0	16	0	7	0	0	57	122	0	0	0	0	54	31	0	287	0
5:45 PM	0	0	0	0	0	0	21	0	13	0	0	52	131	0	0	0	0	33	28	0	278	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	1	0	5
Lights	0	0	0	0	0	0	57	0	40	0	0	260	527	0	0	0	0	328	237	0	1,449
Mediums	0	0	0	0	0	0	1	0	0	0	0	4	3	0	0	0	0	4	1	0	13
Total	0	0	0	0	0	0	59	0	40	0	0	265	532	0	0	0	0	332	239	0	1,467
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk		0					0					0					0				0
Heavy Vehicle Percentage			0.0%				2.0%					1.3%					1.1%				1.2%
Heavy Vehicle Percentage	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	1.9%	0.9%	0.0%	0.0%	0.0%	0.0%	1.2%	0.8%	0.0%	1.2%
Peak Hour Factor (PHF)			0.00				0.79					0.92					0.81				0.90
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.85	0.00	0.00	0.84	0.80	0.00	0.00	0.00	0.00	0.81	0.83	0.00	0.90

Traffic Counts by Vehicle Type

Time	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks																					
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	4
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Lights																					
4:00 PM	0	0	0	0	0	0	16	0	5	0	0	67	96	0	0	0	0	81	75	0	340

Intersection 9. Airport Road @ SR-44 WB Ramps

[illegible]

Bicycles on Crosswalk

[illegible]

Pedestrians

[illegible]

Intersection 10. Airport Road @ SR-44 EB Ramps

All Traffic Data Services

2 AIRPORT RD & S.R. 44 EB RAMPS AM

Tuesday, April 27, 2021

Peak Hour

07:15 AM - 08:15 AM

Peak 15-Minutes

07:45 AM - 08:00 AM

Traffic Counts - All Vehicles

Time	S.R. 44 EB RAMPS					S.R. 44 EB RAMPS					AIRPORT RD					AIRPORT RD					Total	Rolling Hour
	Eastbound					Westbound					Northbound					Southbound						
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR		
7:00 AM	0	39	0	40	0	0	0	0	0	0	0	0	89	36	0	0	6	73	0	0	283	1,551
7:15 AM	0	47	0	57	0	0	0	0	0	0	0	0	113	34	0	0	9	86	0	0	346	1,646
7:30 AM	0	72	0	63	0	0	0	0	0	0	0	0	118	36	0	0	11	94	0	0	394	1,605
7:45 AM	0	75	0	104	0	0	0	0	0	0	0	0	148	58	0	0	15	128	0	0	528	1,508
8:00 AM	0	46	0	67	0	0	0	0	0	0	0	0	108	33	0	0	7	117	0	0	378	1,269
8:15 AM	0	43	1	63	0	0	0	0	0	0	0	0	74	21	0	0	11	92	0	0	305	0
8:30 AM	0	51	0	70	0	0	0	0	0	0	0	0	75	13	0	0	8	80	0	0	297	0
8:45 AM	0	33	0	63	0	0	0	0	0	0	0	0	86	19	0	0	12	76	0	0	289	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks	0	3	0	1	0	0	0	0	0	0	0	0	6	0	0	0	0	3	0	0	13
Lights	0	231	0	288	0	0	0	0	0	0	0	0	468	158	0	0	36	402	0	0	1,583
Mediums	0	6	0	2	0	0	0	0	0	0	0	0	13	3	0	0	6	20	0	0	50
Total	0	240	0	291	0	0	0	0	0	0	0	0	487	161	0	0	42	425	0	0	1,646
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Bicycles on Crosswalk		0					0					0					0				0
Heavy Vehicle Percentage			2.3%				0.0%					3.4%					6.2%				3.8%
Heavy Vehicle Percentage	0.0%	3.8%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	1.9%	0.0%	0.0%	14.3%	5.4%	0.0%	0.0%	3.8%
Peak Hour Factor (PHF)			0.75				0.00					0.79					0.83				0.78
Peak Hour Factor (PHF)	0.00	0.80	0.25	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.71	0.00	0.00	0.73	0.84	0.00	0.00	0.78

Traffic Counts by Vehicle Type

Time	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks																					
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	4
7:45 AM	0	2	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	4
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights																					
7:00 AM	0	38	0	40	0	0	0	0	0	0	0	0	85	35	0	0	5	71	0	0	274

Intersection 10. Airport Road @ SR-44 EB Ramps

[illegible]

Bicycles on Crosswalk

[illegible]

Pedestrians

[illegible]

Intersection 10. Airport Road @ SR-44 EB Ramps

All Traffic Data Services

2 AIRPORT RD & S.R. 44 EB RAMPS PM

Tuesday, April 27, 2021

Peak Hour

04:30 PM - 05:30 PM

Peak 15-Minutes

05:00 PM - 05:15 PM

Traffic Counts - All Vehicles

Time		S.R. 44 EB RAMPS					S.R. 44 EB RAMPS					AIRPORT RD					AIRPORT RD					Total		Rolling Hour	
		Eastbound					Westbound					Northbound					Southbound								
		U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR				
4:00 PM	0	52	0	58	0	0	0	0	0	0	0	0	119	28	0	0	16	86	0	0	359	1,458			
4:15 PM	0	52	0	65	0	0	0	0	0	0	0	0	96	40	0	0	10	84	0	0	347	1,510			
4:30 PM	0	58	0	75	0	0	0	0	0	0	0	0	126	27	0	0	15	79	0	0	380	1,564			
4:45 PM	0	70	1	50	0	0	0	0	0	0	0	0	128	35	0	0	6	82	0	0	372	1,514			
5:00 PM	0	64	0	73	0	0	0	0	0	0	0	0	139	24	0	0	16	95	0	0	411	1,483			
5:15 PM	0	85	0	67	0	0	0	0	0	0	0	0	124	34	0	0	11	80	0	0	401	0			
5:30 PM	0	58	0	51	0	0	0	0	0	0	0	0	123	32	0	0	7	59	0	0	330	0			
5:45 PM	0	72	0	67	0	0	0	0	0	0	0	0	110	23	0	0	6	63	0	0	341	0			

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks	0	1	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7
Lights	0	274	1	260	0	0	0	0	0	0	0	0	511	120	0	0	47	331	0	0	1,544
Mediums	0	2	0	2	0	0	0	0	0	0	0	0	4	0	0	0	1	4	0	0	13
Total	0	277	1	265	0	0	0	0	0	0	0	0	517	120	0	0	48	336	0	0	1,564
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk		0					0					0					0				0
Heavy Vehicle Percentage			1.5%				0.0%					0.9%					1.6%				1.3%
Heavy Vehicle Percentage	0.0%	1.1%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	2.1%	1.5%	0.0%	0.0%	1.3%
Peak Hour Factor (PHF)			0.89				0.00					0.98					0.87				0.95
Peak Hour Factor (PHF)	0.00	0.82	0.25	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.81	0.00	0.00	0.75	0.89	0.00	0.00	0.95

Traffic Counts by Vehicle Type

Time	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks																					
4:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Lights																					
4:00 PM	0	49	0	55	0	0	0	0	0	0	0	0	115	28	0	0	15	81	0	0	343

Intersection 10. Airport Road @ SR-44 EB Ramps

[illegible]

Bicycles on Crosswalk

[illegible]

Pedestrians

[illegible]

Intersection 11. Airport Road @ Hartnell Avenue

All Traffic Data Services

3 AIRPORT RD & HARTNELL AVE AM
Tuesday, April 27, 2021

Peak Hour
07:15 AM - 08:15 AM
Peak 15-Minutes
07:45 AM - 08:00 AM

Traffic Counts - All Vehicles

Time	HARTNELL AVE					HARTNELL AVE					AIRPORT RD					AIRPORT RD					Total	Rolling Hour
	Eastbound					Westbound					Northbound					Southbound						
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR		
7:00 AM	0	13	0	5	0	0	0	2	4	0	0	5	96	1	0	0	7	90	17	0	240	1,325
7:15 AM	0	20	2	7	0	0	0	0	1	0	0	6	128	0	0	0	3	123	18	0	308	1,416
7:30 AM	0	17	0	5	0	0	0	0	3	0	0	9	158	3	0	0	3	143	18	0	359	1,358
7:45 AM	0	13	0	6	0	0	0	1	3	0	0	4	166	2	0	1	5	195	22	0	418	1,256
8:00 AM	0	5	0	8	0	0	0	1	4	0	0	4	128	1	0	0	8	148	24	0	331	1,081
8:15 AM	0	12	2	4	0	0	0	1	3	0	0	4	72	2	0	0	2	128	20	0	250	0
8:30 AM	0	12	0	3	0	0	0	0	1	0	0	0	75	2	0	0	7	135	22	0	257	0
8:45 AM	0	10	0	5	0	0	0	0	4	0	0	4	96	0	0	0	2	107	15	0	243	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	3	0	0	10
Lights	0	55	2	26	0	0	0	2	10	0	0	22	565	0	0	1	17	588	78	0	1,366
Mediums	0	0	0	0	0	0	0	0	1	0	0	0	15	0	0	0	2	18	4	0	40
Total	0	55	2	26	0	0	0	2	11	0	0	23	580	6	0	1	19	609	82	0	1,416
Bicycles on Road	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
Bicycles on Crosswalk			0					0					0					0			0
Heavy Vehicle Percentage			0.0%					7.7%					3.6%					3.8%			3.5%
Heavy Vehicle Percentage	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%	0.0%	0.0%	4.3%	2.6%	100.0%	0.0%	0.0%	10.5%	3.4%	4.9%	0.0%	3.5%
Peak Hour Factor (PHF)			0.76					0.80					0.89					0.80			0.85
Peak Hour Factor (PHF)	0.00	0.79	0.25	0.81	0.00	0.00	0.00	0.38	0.81	0.00	0.00	0.67	0.87	0.67	0.00	0.25	0.69	0.79	0.92	0.00	0.85

Traffic Counts by Vehicle Type

Time	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks																					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Lights																					
7:00 AM	0	13	0	5	0	0	0	2	2	0	0	5	94	0	0	0	7	88	17	0	233

Intersection 11. Airport Road @ Hartnell Avenue

[illegible]

Bicycles on Crosswalk

[illegible]

Pedestrians

[illegible]

Intersection 11. Airport Road @ Hartnell Avenue

All Traffic Data Services

3 AIRPORT RD & HARTNELL AVE PM

Tuesday, April 27, 2021

Peak Hour

04:15 PM - 05:15 PM

Peak 15-Minutes

05:00 PM - 05:15 PM

Traffic Counts - All Vehicles

Time	HARTNELL AVE					HARTNELL AVE					AIRPORT RD					AIRPORT RD					Total	Rolling Hour
	Eastbound					Westbound					Northbound					Southbound						
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR		
4:00 PM	0	11	0	11	0	0	1	1	8	0	0	6	121	0	0	0	7	127	15	0	308	1,265
4:15 PM	0	11	0	10	0	0	0	0	4	0	0	7	127	1	0	0	6	123	23	0	312	1,314
4:30 PM	0	14	0	8	0	0	0	2	16	0	0	11	137	0	0	0	6	110	26	0	330	1,311
4:45 PM	0	17	0	6	0	0	0	0	5	0	0	14	134	1	0	0	4	107	27	0	315	1,252
5:00 PM	0	9	0	13	0	0	0	0	7	0	0	14	144	0	0	0	1	141	28	0	357	1,208
5:15 PM	0	26	0	8	0	0	0	0	8	0	0	5	122	1	0	0	5	113	21	0	309	0
5:30 PM	0	19	0	2	0	0	0	0	4	0	0	8	123	0	0	0	3	96	16	0	271	0
5:45 PM	0	18	1	4	0	0	0	0	3	0	0	6	113	0	0	0	2	104	20	0	271	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0	0	6
Lights	0	50	0	37	0	0	0	2	32	0	0	46	535	0	0	0	15	470	103	0	1,290
Mediums	0	1	0	0	0	0	0	0	0	0	0	0	7	0	0	0	1	8	1	0	18
Total	0	51	0	37	0	0	0	2	32	0	0	46	542	2	0	0	17	481	104	0	1,314
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk		0					0					0					0				0
Heavy Vehicle Percentage			1.1%				0.0%					1.5%					2.3%				1.8%
Heavy Vehicle Percentage	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	100.0%	0.0%	0.0%	11.8%	2.3%	1.0%	0.0%	1.8%
Peak Hour Factor (PHF)			0.74				0.53					0.93					0.89				0.92
Peak Hour Factor (PHF)	0.00	0.69	0.25	0.71	0.00	0.00	0.25	0.38	0.56	0.00	0.00	0.82	0.94	0.50	0.00	0.00	0.82	0.85	0.93	0.00	0.92

Traffic Counts by Vehicle Type

Time	Eastbound					Westbound					Northbound					Southbound					Total
	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	U-Turn	Left	Thru	Right	RTOR	
Articulated Trucks																					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Lights																					
4:00 PM	0	11	0	10	0	0	1	1	7	0	0	6	119	0	0	0	6	121	15	0	297

Intersection 11. Airport Road @ Hartnell Avenue

[illegible]

Bicycles on Crosswalk

[illegible]

Pedestrians

[illegible]

Intersection 12. Airport Road @ Preserve Boulevard

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Preserve						S Airport			N Airport			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	208	-	116	-	-	-	148	6,038	-	-	6,529	328	13,367
01: 12am (12am-1am)	-	-	-	-	-	-	1	12	-	-	20	-	33
02: 1am (1am-2am)	1	-	1	-	-	-	12	37	-	-	9	-	60
03: 2am (2am-3am)	-	-	-	-	-	-	1	13	-	-	6	-	20
04: 3am (3am-4am)	-	-	-	-	-	-	-	10	-	-	4	-	14
05: 4am (4am-5am)	6	-	-	-	-	-	-	38	-	-	44	-	88
06: 5am (5am-6am)	3	-	1	-	-	-	-	97	-	-	121	1	223
07: 6am (6am-7am)	12	-	15	-	-	-	5	296	-	-	289	4	621
08: 7am (7am-8am)	31	-	6	-	-	-	2	860	-	-	427	14	1,340
09: 8am (8am-9am)	5	-	5	-	-	-	4	348	-	-	518	16	896
10: 9am (9am-10am)	20	-	9	-	-	-	7	302	-	-	307	13	658
11: 10am (10am-11am)	6	-	4	-	-	-	9	275	-	-	290	11	595
12: 11am (11am-12noon)	8	-	10	-	-	-	2	308	-	-	337	22	687
13: 12pm (12noon-1pm)	16	-	7	-	-	-	3	347	-	-	498	38	909
14: 1pm (1pm-2pm)	15	-	8	-	-	-	20	362	-	-	401	33	839
15: 2pm (2pm-3pm)	14	-	8	-	-	-	9	408	-	-	497	31	967
16: 3pm (3pm-4pm)	16	-	3	-	-	-	8	481	-	-	675	39	1,222
17: 4pm (4pm-5pm)	11	-	7	-	-	-	14	537	-	-	528	31	1,128
18: 5pm (5pm-6pm)	7	-	9	-	-	-	12	513	-	-	529	28	1,098
19: 6pm (6pm-7pm)	12	-	16	-	-	-	5	270	-	-	316	20	639
20: 7pm (7pm-8pm)	3	-	1	-	-	-	11	166	-	-	251	14	446
21: 8pm (8pm-9pm)	13	-	3	-	-	-	12	146	-	-	203	6	383
22: 9pm (9pm-10pm)	6	-	1	-	-	-	10	125	-	-	141	6	289
23: 10pm (10pm-11pm)	2	-	-	-	-	-	1	68	-	-	88	1	160
24: 11pm (11pm-12am)	-	-	-	-	-	-	-	18	-	-	32	-	50

TURNING MOVEMENT PERCENTAGE

Day Part	W Preserve						S Airport			N Airport			
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	64%	0%	36%	-	-	-	2%	98%	0%	0%	95%	5%	
01: 12am (12am-1am)	-	-	-	-	-	-	8%	92%	0%	0%	100%	0%	
02: 1am (1am-2am)	50%	0%	50%	-	-	-	24%	76%	0%	0%	100%	0%	
03: 2am (2am-3am)	-	-	-	-	-	-	7%	93%	0%	0%	100%	0%	
04: 3am (3am-4am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%	
05: 4am (4am-5am)	100%	0%	0%	-	-	-	0%	100%	0%	0%	100%	0%	
06: 5am (5am-6am)	75%	0%	25%	-	-	-	0%	100%	0%	0%	99%	1%	
07: 6am (6am-7am)	44%	0%	56%	-	-	-	2%	98%	0%	0%	99%	1%	
08: 7am (7am-8am)	84%	0%	16%	-	-	-	0%	100%	0%	0%	97%	3%	
09: 8am (8am-9am)	50%	0%	50%	-	-	-	1%	99%	0%	0%	97%	3%	
10: 9am (9am-10am)	69%	0%	31%	-	-	-	2%	98%	0%	0%	96%	4%	
11: 10am (10am-11am)	60%	0%	40%	-	-	-	3%	97%	0%	0%	96%	4%	
12: 11am (11am-12noon)	44%	0%	56%	-	-	-	1%	99%	0%	0%	94%	6%	
13: 12pm (12noon-1pm)	70%	0%	30%	-	-	-	1%	99%	0%	0%	93%	7%	
14: 1pm (1pm-2pm)	65%	0%	35%	-	-	-	5%	95%	0%	0%	92%	8%	
15: 2pm (2pm-3pm)	64%	0%	36%	-	-	-	2%	98%	0%	0%	94%	6%	
16: 3pm (3pm-4pm)	84%	0%	16%	-	-	-	2%	98%	0%	0%	95%	5%	
17: 4pm (4pm-5pm)	61%	0%	39%	-	-	-	3%	97%	0%	0%	94%	6%	
18: 5pm (5pm-6pm)	44%	0%	56%	-	-	-	2%	98%	0%	0%	95%	5%	
19: 6pm (6pm-7pm)	43%	0%	57%	-	-	-	2%	98%	0%	0%	94%	6%	
20: 7pm (7pm-8pm)	75%	0%	25%	-	-	-	6%	94%	0%	0%	95%	5%	
21: 8pm (8pm-9pm)	81%	0%	19%	-	-	-	8%	92%	0%	0%	97%	3%	
22: 9pm (9pm-10pm)	86%	0%	14%	-	-	-	7%	93%	0%	0%	96%	4%	
23: 10pm (10pm-11pm)	100%	0%	0%	-	-	-	1%	99%	0%	0%	99%	1%	
24: 11pm (11pm-12am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%	

Intersection 13. Airport Road @ Electro Way

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	O			E Electro			S Airport			N Airport			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	-	-	-	47	-	96	-	4,690	26	101	4,756	-	9,716
06: 5am (5am-6am)	-	-	-	-	-	2	-	84	-	-	107	-	193
07: 6am (6am-7am)	-	-	-	-	-	-	-	235	15	6	249	-	505
08: 7am (7am-8am)	-	-	-	4	-	6	-	428	2	2	379	-	821
09: 8am (8am-9am)	-	-	-	4	-	4	-	294	-	24	293	-	619
10: 9am (9am-10am)	-	-	-	-	-	8	-	288	1	2	198	-	497
11: 10am (10am-11am)	-	-	-	3	-	6	-	224	2	7	217	-	459
12: 11am (11am-12noon)	-	-	-	8	-	12	-	264	2	12	245	-	543
13: 12pm (12noon-1pm)	-	-	-	8	-	8	-	286	1	11	336	-	650
14: 1pm (1pm-2pm)	-	-	-	1	-	7	-	317	-	11	316	-	652
15: 2pm (2pm-3pm)	-	-	-	3	-	5	-	310	2	9	333	-	662
16: 3pm (3pm-4pm)	-	-	-	3	-	17	-	376	-	11	419	-	826
17: 4pm (4pm-5pm)	-	-	-	5	-	14	-	403	2	7	409	-	840
18: 5pm (5pm-6pm)	-	-	-	2	-	6	-	380	-	-	442	-	830
19: 6pm (6pm-7pm)	-	-	-	3	-	-	-	210	-	-	263	-	476
20: 7pm (7pm-8pm)	-	-	-	1	-	-	-	162	-	-	178	-	341
22: 9pm (9pm-10pm)	-	-	-	1	-	-	-	116	-	-	87	-	204
01: 12am (12am-1am)	-	-	-	-	-	-	-	17	-	-	15	-	32
21: 8pm (8pm-9pm)	-	-	-	2	-	-	-	116	-	1	125	-	244
23: 10pm (10pm-11pm)	-	-	-	1	-	-	-	55	-	-	45	-	101
02: 1am (1am-2am)	-	-	-	-	-	-	-	33	-	-	6	-	39
03: 2am (2am-3am)	-	-	-	-	-	-	-	5	-	-	3	-	8
04: 3am (3am-4am)	-	-	-	-	-	-	-	10	-	-	7	-	17
05: 4am (4am-5am)	-	-	-	-	-	-	-	51	-	-	57	-	108
24: 11pm (11pm-12am)	-	-	-	-	-	-	-	26	-	-	26	-	52

TURNING MOVEMENT PERCENTAGE

Day Part	O			E Electro			S Airport			N Airport		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	-	-	-	33%	0%	67%	0%	99%	1%	2%	98%	0%
06: 5am (5am-6am)	-	-	-	0%	0%	100%	0%	100%	0%	0%	100%	0%
07: 6am (6am-7am)	-	-	-	-	-	-	0%	94%	6%	2%	98%	0%
08: 7am (7am-8am)	-	-	-	40%	0%	60%	0%	100%	0%	1%	99%	0%
09: 8am (8am-9am)	-	-	-	50%	0%	50%	0%	100%	0%	8%	92%	0%
10: 9am (9am-10am)	-	-	-	0%	0%	100%	0%	100%	0%	1%	99%	0%
11: 10am (10am-11am)	-	-	-	33%	0%	67%	0%	99%	1%	3%	97%	0%
12: 11am (11am-12noon)	-	-	-	40%	0%	60%	0%	99%	1%	5%	95%	0%
13: 12pm (12noon-1pm)	-	-	-	50%	0%	50%	0%	100%	0%	3%	97%	0%
14: 1pm (1pm-2pm)	-	-	-	13%	0%	88%	0%	100%	0%	3%	97%	0%
15: 2pm (2pm-3pm)	-	-	-	38%	0%	63%	0%	99%	1%	3%	97%	0%
16: 3pm (3pm-4pm)	-	-	-	15%	0%	85%	0%	100%	0%	3%	97%	0%
17: 4pm (4pm-5pm)	-	-	-	26%	0%	74%	0%	100%	0%	2%	98%	0%
18: 5pm (5pm-6pm)	-	-	-	25%	0%	75%	0%	100%	0%	0%	100%	0%
19: 6pm (6pm-7pm)	-	-	-	100%	0%	0%	0%	100%	0%	0%	100%	0%
20: 7pm (7pm-8pm)	-	-	-	100%	0%	0%	0%	100%	0%	0%	100%	0%
22: 9pm (9pm-10pm)	-	-	-	100%	0%	0%	0%	100%	0%	0%	100%	0%
01: 12am (12am-1am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%
21: 8pm (8pm-9pm)	-	-	-	100%	0%	0%	0%	100%	0%	1%	99%	0%
23: 10pm (10pm-11pm)	-	-	-	100%	0%	0%	0%	100%	0%	0%	100%	0%
02: 1am (1am-2am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%
03: 2am (2am-3am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%
04: 3am (3am-4am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%
05: 4am (4am-5am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%
24: 11pm (11pm-12am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%

Intersection 14. Aviation Drive @ Electro Way

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

[illegible]

TURNING MOVEMENT PERCENTAGE

[illegible]

Intersection 15. Aviation Drive @ Shasta View Drive

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

[illegible]

TURNING MOVEMENT PERCENTAGE

[illegible]

Intersection 16. Airport Road @ Shasta View Drive

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Shasta View			E Mill			S Airport			N Airport			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	187	5	60	56	2	243	36	4,380	119	329	4,297	204	9,918
01: 12am (12am-1am)	4	-	1	-	-	-	-	21	2	-	14	-	42
02: 1am (1am-2am)	16	-	-	-	-	1	-	26	1	-	6	-	50
03: 2am (2am-3am)	1	-	-	-	-	1	-	6	-	-	2	-	10
06: 5am (5am-6am)	1	-	10	-	-	-	-	83	-	-	108	-	202
07: 6am (6am-7am)	8	-	1	-	-	1	-	249	9	46	196	2	512
08: 7am (7am-8am)	20	-	7	-	-	5	-	411	19	71	312	1	846
09: 8am (8am-9am)	11	-	3	4	-	9	-	283	23	51	238	4	626
10: 9am (9am-10am)	13	-	1	-	-	7	-	274	4	19	174	7	499
11: 10am (10am-11am)	8	2	4	3	-	15	2	213	2	18	182	16	465
12: 11am (11am-12noon)	4	-	3	3	-	28	3	236	3	17	221	13	531
13: 12pm (12noon-1pm)	10	1	9	-	-	24	2	264	24	35	311	12	692
14: 1pm (1pm-2pm)	8	-	2	-	-	8	1	305	2	29	272	10	637
15: 2pm (2pm-3pm)	12	-	1	5	1	11	5	295	4	19	302	14	669
16: 3pm (3pm-4pm)	13	-	1	8	1	30	3	349	6	8	384	34	837
17: 4pm (4pm-5pm)	17	2	3	13	-	46	7	326	15	9	383	25	846
18: 5pm (5pm-6pm)	12	1	5	9	-	51	3	313	4	4	438	19	859
19: 6pm (6pm-7pm)	11	-	-	1	-	3	-	197	2	2	248	14	478
21: 8pm (8pm-9pm)	2	-	-	1	-	-	4	116	-	-	121	10	254
22: 9pm (9pm-10pm)	2	-	-	9	-	2	1	110	-	1	78	7	210
24: 11pm (11pm-12am)	-	-	-	-	-	-	1	27	1	-	26	-	55
20: 7pm (7pm-8pm)	9	-	1	1	-	-	6	158	-	1	171	14	361
04: 3am (3am-4am)	6	-	6	-	-	-	-	4	-	-	6	-	22
05: 4am (4am-5am)	-	-	-	-	-	-	-	55	-	-	55	-	110
23: 10pm (10pm-11pm)	-	-	1	-	-	-	-	59	-	-	47	2	109

TURNING MOVEMENT PERCENTAGE

Day Part	W Shasta View			E Mill			S Airport			N Airport			
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	74%	2%	24%	19%	1%	81%	1%	97%	3%	7%	89%	4%	
01: 12am (12am-1am)	80%	0%	20%	-	-	-	0%	91%	9%	0%	100%	0%	
02: 1am (1am-2am)	100%	0%	0%	0%	0%	100%	0%	96%	4%	0%	100%	0%	
03: 2am (2am-3am)	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%	
06: 5am (5am-6am)	9%	0%	91%	-	-	-	0%	100%	0%	0%	100%	0%	
07: 6am (6am-7am)	89%	0%	11%	0%	0%	100%	0%	97%	3%	19%	80%	1%	
08: 7am (7am-8am)	74%	0%	26%	0%	0%	100%	0%	96%	4%	18%	81%	0%	
09: 8am (8am-9am)	79%	0%	21%	31%	0%	69%	0%	92%	8%	17%	81%	1%	
10: 9am (9am-10am)	93%	0%	7%	0%	0%	100%	0%	99%	1%	10%	87%	4%	
11: 10am (10am-11am)	57%	14%	29%	17%	0%	83%	1%	98%	1%	8%	84%	7%	
12: 11am (11am-12noon)	57%	0%	43%	10%	0%	90%	1%	98%	1%	7%	88%	5%	
13: 12pm (12noon-1pm)	50%	5%	45%	0%	0%	100%	1%	91%	8%	10%	87%	3%	
14: 1pm (1pm-2pm)	80%	0%	20%	0%	0%	100%	0%	99%	1%	9%	87%	3%	
15: 2pm (2pm-3pm)	92%	0%	8%	29%	6%	65%	2%	97%	1%	6%	90%	4%	
16: 3pm (3pm-4pm)	93%	0%	7%	21%	3%	77%	1%	97%	2%	2%	90%	8%	
17: 4pm (4pm-5pm)	77%	9%	14%	22%	0%	78%	2%	94%	4%	2%	92%	6%	
18: 5pm (5pm-6pm)	67%	6%	28%	15%	0%	85%	1%	98%	1%	1%	95%	4%	
19: 6pm (6pm-7pm)	100%	0%	0%	25%	0%	75%	0%	99%	1%	1%	94%	5%	
21: 8pm (8pm-9pm)	100%	0%	0%	100%	0%	0%	3%	97%	0%	0%	92%	8%	
22: 9pm (9pm-10pm)	100%	0%	0%	82%	0%	18%	1%	99%	0%	1%	91%	8%	
24: 11pm (11pm-12am)	-	-	-	-	-	-	3%	93%	3%	0%	100%	0%	
20: 7pm (7pm-8pm)	90%	0%	10%	100%	0%	0%	4%	96%	0%	1%	92%	8%	
04: 3am (3am-4am)	50%	0%	50%	-	-	-	0%	100%	0%	0%	100%	0%	
05: 4am (4am-5am)	-	-	-	-	-	-	0%	100%	0%	0%	100%	0%	
23: 10pm (10pm-11pm)	0%	0%	100%	-	-	-	0%	100%	0%	0%	96%	4%	

Intersection 17. Airport Road @ Knighton Road

Day Type

1: Mid Week (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W Knighton			E Muni			S Airport			N Airport			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	367	127	759	80	152	55	817	3,373	79	187	3,543	379	9,918
01: 12am (12am-1am)	1	-	6	1	4	-	14	19	-	2	11	4	62
06: 5am (5am-6am)	2	23	9	-	5	1	23	96	2	16	78	21	276
07: 6am (6am-7am)	33	3	11	-	1	1	70	185	-	3	114	23	444
08: 7am (7am-8am)	22	5	20	-	1	2	186	437	6	5	202	28	914
09: 8am (8am-9am)	25	15	39	4	3	4	63	247	3	20	138	30	591
10: 9am (9am-10am)	27	6	28	4	18	2	24	203	5	8	129	20	474
11: 10am (10am-11am)	22	5	27	2	11	5	49	178	4	2	146	14	465
12: 11am (11am-12noon)	23	8	49	7	6	1	44	178	9	10	180	25	540
13: 12pm (12noon-1pm)	28	3	43	5	10	-	41	196	4	7	257	29	623
14: 1pm (1pm-2pm)	22	2	48	3	5	3	40	248	1	6	226	26	630
15: 2pm (2pm-3pm)	35	-	55	5	3	2	36	218	3	9	245	34	645
16: 3pm (3pm-4pm)	36	3	81	3	6	-	41	254	3	7	315	60	809
17: 4pm (4pm-5pm)	31	13	88	7	8	3	50	201	10	15	399	18	843
18: 5pm (5pm-6pm)	25	17	102	10	22	5	44	198	6	42	402	17	890
19: 6pm (6pm-7pm)	5	7	46	4	7	6	25	130	9	9	243	5	496
20: 7pm (7pm-8pm)	4	3	42	7	11	6	20	121	3	1	156	2	376
21: 8pm (8pm-9pm)	7	-	26	5	4	4	15	78	1	-	112	4	256
22: 9pm (9pm-10pm)	5	-	14	2	3	1	9	88	1	6	84	2	215
23: 10pm (10pm-11pm)	4	3	19	6	11	9	6	12	4	3	44	5	126
24: 11pm (11pm-12am)	4	2	3	4	12	1	2	13	1	1	26	1	70
03: 2am (2am-3am)	3	-	2	-	-	-	3	2	-	-	2	-	12
05: 4am (4am-5am)	-	10	2	2	1	-	3	55	5	13	22	5	118
02: 1am (1am-2am)	4	-	-	-	-	-	7	11	-	-	5	2	29
04: 3am (3am-4am)	-	-	1	-	-	-	1	4	-	-	8	2	16

TURNING MOVEMENT PERCENTAGE

Day Part	W Knighton			E Muni			S Airport			N Airport			
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	29%	10%	61%	28%	53%	19%	19%	79%	2%	5%	86%	9%	
01: 12am (12am-1am)	14%	0%	86%	20%	80%	0%	42%	58%	0%	12%	65%	24%	
06: 5am (5am-6am)	6%	68%	26%	0%	83%	17%	19%	79%	2%	14%	68%	18%	
07: 6am (6am-7am)	70%	6%	23%	0%	50%	50%	27%	73%	0%	2%	81%	16%	
08: 7am (7am-8am)	47%	11%	43%	0%	33%	67%	30%	69%	1%	2%	86%	12%	
09: 8am (8am-9am)	32%	19%	49%	36%	27%	36%	20%	79%	1%	11%	73%	16%	
10: 9am (9am-10am)	44%	10%	46%	17%	75%	8%	10%	88%	2%	5%	82%	13%	
11: 10am (10am-11am)	41%	9%	50%	11%	61%	28%	21%	77%	2%	1%	90%	9%	
12: 11am (11am-12noon)	29%	10%	61%	50%	43%	7%	19%	77%	4%	5%	84%	12%	
13: 12pm (12noon-1pm)	38%	4%	58%	33%	67%	0%	17%	81%	2%	2%	88%	10%	
14: 1pm (1pm-2pm)	31%	3%	67%	27%	45%	27%	14%	86%	0%	2%	88%	10%	
15: 2pm (2pm-3pm)	39%	0%	61%	50%	30%	20%	14%	85%	1%	3%	85%	12%	
16: 3pm (3pm-4pm)	30%	3%	68%	33%	67%	0%	14%	85%	1%	2%	82%	16%	
17: 4pm (4pm-5pm)	23%	10%	67%	39%	44%	17%	19%	77%	4%	3%	92%	4%	
18: 5pm (5pm-6pm)	17%	12%	71%	27%	59%	14%	18%	80%	2%	9%	87%	4%	
19: 6pm (6pm-7pm)	9%	12%	79%	24%	41%	35%	15%	79%	5%	4%	95%	2%	
20: 7pm (7pm-8pm)	8%	6%	86%	29%	46%	25%	14%	84%	2%	1%	98%	1%	
21: 8pm (8pm-9pm)	21%	0%	79%	38%	31%	31%	16%	83%	1%	0%	97%	3%	
22: 9pm (9pm-10pm)	26%	0%	74%	33%	50%	17%	9%	90%	1%	7%	91%	2%	
23: 10pm (10pm-11pm)	15%	12%	73%	23%	42%	35%	27%	55%	18%	6%	85%	10%	
24: 11pm (11pm-12am)	44%	22%	33%	24%	71%	6%	13%	81%	6%	4%	93%	4%	
03: 2am (2am-3am)	60%	0%	40%	-	-	-	60%	40%	0%	0%	100%	0%	
05: 4am (4am-5am)	0%	83%	17%	67%	33%	0%	5%	87%	8%	33%	55%	13%	
02: 1am (1am-2am)	100%	0%	0%	-	-	-	39%	61%	0%	0%	71%	29%	
04: 3am (3am-4am)	0%	0%	100%	-	-	-	20%	80%	0%	0%	80%	20%	

Appendix C

Supplemental Traffic Data

Site Code: 6
Station ID:
AIRPORT RD N.O HARTNELL AVE

Start Time	27-Apr-21 Tue	NB	SB							Total
12:00 AM		15	18							33
01:00		11	8							19
02:00		23	10							33
03:00		30	20							50
04:00		137	38							175
05:00		326	108							434
06:00		598	274							872
07:00		622	644							1266
08:00		422	618							1040
09:00		442	394							836
10:00		481	425							906
11:00		488	435							923
12:00 PM		493	515							1008
01:00		569	526							1095
02:00		522	568							1090
03:00		587	589							1176
04:00		605	581							1186
05:00		596	550							1146
06:00		282	341							623
07:00		185	247							432
08:00		121	183							304
09:00		50	110							160
10:00		36	84							120
11:00		17	46							63
Total		7658	7332							14990
Percent		51.1%	48.9%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	622	644	-	-	-	-	-	-	1266
PM Peak	-	16:00	15:00	-	-	-	-	-	-	16:00
Vol.	-	605	589	-	-	-	-	-	-	1186
Grand Total		7658	7332							14990
Percent		51.1%	48.9%							
ADT		ADT 14,990	AADT 14,990							

RTE	RTE_SFX	DIST	CNTY	POSTMILE_PFX	POSTMILE	POSTMILE_SFX	LEG	DESCRIPTION	VEHICLE_AADT_TOTAL	TRUCK_AADT_TOTAL	TRK_PERCENT_TOTAL
005		02	SHA		0		O	TEHAMA/SHASTA COUNTY LINE	48500	7944	16.38
005		02	SHA		0.909		A	FOURTH STREET	48500	7944	16.38
005		02	SHA		1.907		A	NORTH COTTONWOOD	54000	8845	16.38
005		02	SHA	R	3.83		A	JCT. RTE. 273 NORTH	45500	5469	12.02
005		02	SHA	R	4.289		A	ANDERSON, DESCHUTES ROAD	55000	6611	12.02
005		02	SHA	R	5.294		A	ANDERSON, BALLS FERRY ROAD	46500	5589	12.02
005		02	SHA	R	5.64		A	ANDERSON, NORTH STREET	56000	6731	12.02
005		02	SHA	R	6.743		A	RIVERSIDE AVENUE	57000	6851	12.02
005		02	SHA	R	9.772		A	KNIGHTON ROAD	59000	7092	12.02
005		02	SHA	R	12.152		A	CHURN CREEK ROAD	63000	7572	12.02
005		02	SHA	R	15.448		A	REDDING, JCT. RTE. 44	61000	7082	11.61
005		02	SHA	R	17.322		A	REDDING, JCT. RTE. 299	49000	6885	14.05
005		02	SHA	R	18.068		A	REDDING, TWINVIEW BOULEVARD	41000	6441	15.71
005		02	SHA	R	18.481		A	REDDING, JCT. RTE. 273	47500	6975	14.68
005		02	SHA	R	19.402		A	REDDING, OASIS ROAD	40000	6704	16.76
005		02	SHA	R	20.995		A	PINE GROVE	34500	6593	19.11
005		02	SHA	R	22.144		A	JCT. RTE. 151 WEST	24700	6407	25.94
005		02	SHA	R	24.08		A	.8-MI. N/O MOUNTAIN GATE	22600	7527	33.31
005		02	SHA	R	26.035		A	FAWNDALE	21700	6692	30.84
005		02	SHA	R	27.632		A	BRIDGE BAY	21200	6763	31.9
005		02	SHA	R	29.315 R		A	TURNTABLE BAY ROAD	21100	6661	31.57
005		02	SHA	R	32.159 R		A	O' BRIEN	20700	6752	32.62
005		02	SHA	R	36.825		A	GILMAN ROAD	20500	6738	32.87
005		02	SHA	R	41.053		A	ANTLERS	19500	6663	34.17
005		02	SHA	R	42.316		A	LAKEHEAD	19300	6603	34.21
005		02	SHA		52.9		A	GIBSON	19100	6605	34.58
005		02	SHA		57.41		A	SIMS ROAD	19100	6599	34.55
005		02	SHA		59.35		A	FLUME CREEK	19100	6605	34.58
005		02	SHA		60.508		A	CONANT ROAD	19100	6526	34.17
005		02	SHA		61.745		A	SWEETBRIER AVENUE	19200	6559	34.16
005		02	SHA		63.583		A	CASTELLA	19400	6555	33.79
005		02	SHA		65.413		A	SODA CREEK ROAD	19600	6625	33.8
005		02	SHA		66.842		A	CASTLE CRAGS DRIVE	20100	6719	33.43
005		02	SHA		67.019		O	SHASTA/SISKIYOU COUNTY LINE	20100	6719	33.43
044		02	SHA	L	0.54		A	END INDEP ALIGN RT AND LT LNS	43000	864	2.01
044		02	SHA	L	0.852		A	REDDING, BUTTE STREET	58000	858	1.48
044		02	SHA	L	1.808		B	REDDING, JCT. RTE. 5	58000	858	1.48
044		02	SHA	R	0		A	REDDING, JCT. RTE. 5	53000	1018	1.92
044		02	SHA	R	0.134		A	HILLTOP DRIVE	38000	730	1.92
044		02	SHA	R	1.239		A	REDDING, VICTOR AVENUE	35500	806	2.27
044		02	SHA	R	2.131		A	SHASTA VIEW DRIVE	23500	451	1.92
044		02	SHA	R	3.627		A	AIRPORT ROAD	16600	319	1.92
044		02	SHA	R	10.77		B	MILLVILLE PLAINS	8000	172	2.15
044		02	SHA	R	10.77		A	MILLVILLE PLAINS	3450	74	2.15
044		02	SHA	R	19.01		B	DERSCH ROAD	4000	86	2.15
044		02	SHA	R	19.01		A	DERSCH ROAD	4850	313	6.45
044		02	SHA	R	27.83		A	SHINGLETOWN	3950	264	6.68
044		02	SHA		42.818		B	VIOLA	1900	247	13
044		02	SHA		42.818		A	VIOLA	1450	189	13.03
044		02	SHA	R	49.353		A	LASSEN VOLCANIC NATIONAL PARK	1450	189	13.03
044		02	SHA		62.685		B	JCT. RTE. 89 NORTHWEST	1400	182	13
044		02	SHA		62.685		A	JCT. RTE. 89 NORTHWEST	1550	287	18.52
044		02	SHA		71.389		O	SHASTA/LASSEN COUNTY LINE	2000	370	18.5

Site Code: 7
Station ID:
AIRPORT RD S.O HARTNELL AVE

Start Time	27-Apr-21 Tue	NB	SB							Total
12:00 AM		18	18							36
01:00		14	8							22
02:00		9	10							19
03:00		22	20							42
04:00		34	36							70
05:00		116	102							218
06:00		262	259							521
07:00		562	552							1114
08:00		406	527							933
09:00		404	372							776
10:00		382	401							783
11:00		490	411							901
12:00 PM		508	468							976
01:00		463	478							941
02:00		485	516							1001
03:00		550	535							1085
04:00		589	467							1056
05:00		548	425							973
06:00		289	310							599
07:00		198	224							422
08:00		156	167							323
09:00		85	100							185
10:00		50	76							126
11:00		28	41							69
Total		6668	6523							13191
Percent		50.5%	49.5%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	562	552	-	-	-	-	-	-	1114
PM Peak	-	16:00	15:00	-	-	-	-	-	-	15:00
Vol.	-	589	535	-	-	-	-	-	-	1085
Grand Total		6668	6523							13191
Percent		50.5%	49.5%							
ADT		ADT 13,191	AADT 13,191							

Site Code: 8
Station ID:
AIRPORT RD S.O RANCHO RD

Start Time	27-Apr-21 Tue	NB	SB							Total
12:00 AM		20	15							35
01:00		9	7							16
02:00		6	7							13
03:00		13	19							32
04:00		19	36							55
05:00		87	95							182
06:00		222	193							415
07:00		456	414							870
08:00		374	386							760
09:00		304	264							568
10:00		301	322							623
11:00		377	321							698
12:00 PM		421	407							828
01:00		342	396							738
02:00		367	454							821
03:00		400	500							900
04:00		416	494							910
05:00		404	435							839
06:00		246	278							524
07:00		169	193							362
08:00		127	135							262
09:00		80	82							162
10:00		42	56							98
11:00		19	37							56
Total		5221	5546							10767
Percent		48.5%	51.5%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	456	414	-	-	-	-	-	-	870
PM Peak	-	12:00	15:00	-	-	-	-	-	-	16:00
Vol.	-	421	500	-	-	-	-	-	-	910
Grand Total		5221	5546							10767
Percent		48.5%	51.5%							
ADT		ADT 10,744	AADT 10,744							

Site Code: 9
Station ID:
AIRPORT RD S.O KNIGHTON RD

Start Time	27-Apr-21 Tue	NB	SB							Total
12:00 AM		15	14							29
01:00		11	8							19
02:00		5	6							11
03:00		17	12							29
04:00		22	19							41
05:00		99	96							195
06:00		268	158							426
07:00		464	289							753
08:00		319	311							630
09:00		270	234							504
10:00		266	260							526
11:00		333	319							652
12:00 PM		366	362							728
01:00		309	357							666
02:00		331	419							750
03:00		342	434							776
04:00		349	461							810
05:00		305	413							718
06:00		194	283							477
07:00		154	193							347
08:00		112	147							259
09:00		73	87							160
10:00		33	56							89
11:00		20	39							59
Total		4677	4977							9654
Percent		48.4%	51.6%							
AM Peak	-	07:00	11:00	-	-	-	-	-	-	07:00
Vol.	-	464	319	-	-	-	-	-	-	753
PM Peak	-	12:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	366	461	-	-	-	-	-	-	810
Grand Total		4677	4977							9654
Percent		48.4%	51.6%							
ADT		ADT 9,609	AADT 9,609							

Site Code: 11
Station ID:
HARTNEL AVE W.O AIRPORT RD

Start Time	27-Apr-21 Tue	EB	WB							Total
12:00 AM		3	3							6
01:00		5	4							9
02:00		2	0							2
03:00		3	1							4
04:00		2	9							11
05:00		22	17							39
06:00		51	33							84
07:00		90	96							186
08:00		62	103							165
09:00		62	80							142
10:00		71	98							169
11:00		84	100							184
12:00 PM		83	127							210
01:00		101	97							198
02:00		106	113							219
03:00		95	139							234
04:00		91	129							220
05:00		95	109							204
06:00		72	83							155
07:00		64	72							136
08:00		35	38							73
09:00		28	28							56
10:00		11	18							29
11:00		10	8							18
Total		1248	1505							2753
Percent		45.3%	54.7%							
AM Peak	-	07:00	08:00	-	-	-	-	-	-	07:00
Vol.	-	90	103	-	-	-	-	-	-	186
PM Peak	-	14:00	15:00	-	-	-	-	-	-	15:00
Vol.	-	106	139	-	-	-	-	-	-	234
Grand Total		1248	1505							2753
Percent		45.3%	54.7%							
ADT		ADT 2,750	AADT 2,750							

Site Code: 12
Station ID:
RANCHO RD E.O SHASTA VIEW DR

Start Time	27-Apr-21 Tue	EB	WB							Total
12:00 AM		12	14							26
01:00		9	2							11
02:00		1	7							8
03:00		12	4							16
04:00		15	12							27
05:00		71	31							102
06:00		159	104							263
07:00		278	225							503
08:00		162	200							362
09:00		147	172							319
10:00		159	162							321
11:00		181	193							374
12:00 PM		211	210							421
01:00		200	181							381
02:00		222	230							452
03:00		233	249							482
04:00		232	253							485
05:00		240	225							465
06:00		136	161							297
07:00		108	112							220
08:00		69	90							159
09:00		38	60							98
10:00		25	44							69
11:00		15	17							32
Total		2935	2958							5893
Percent		49.8%	50.2%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	278	225	-	-	-	-	-	-	503
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	240	253	-	-	-	-	-	-	485
Grand Total		2935	2958							5893
Percent		49.8%	50.2%							
ADT		ADT 5,833	AADT 5,833							

Site Code: 13
Station ID:
KNIGHTON RD E.O INTERSTATE 5

Start Time	27-Apr-21 Tue	EB	WB							Total
12:00 AM		12	8							20
01:00		7	3							10
02:00		6	7							13
03:00		22	14							36
04:00		24	26							50
05:00		130	60							190
06:00		151	136							287
07:00		280	305							585
08:00		230	284							514
09:00		164	225							389
10:00		199	199							398
11:00		212	221							433
12:00 PM		234	248							482
01:00		312	244							556
02:00		290	334							624
03:00		244	323							567
04:00		257	279							536
05:00		221	213							434
06:00		146	139							285
07:00		115	90							205
08:00		80	53							133
09:00		55	50							105
10:00		32	40							72
11:00		18	18							36
Total		3441	3519							6960
Percent		49.4%	50.6%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	280	305	-	-	-	-	-	-	585
PM Peak	-	13:00	14:00	-	-	-	-	-	-	14:00
Vol.	-	312	334	-	-	-	-	-	-	624
Grand Total		3441	3519							6960
Percent		49.4%	50.6%							
ADT		ADT 6,968	AADT 6,968							

Site Code: 14
Station ID:
KNIGHTON RD E.O CHURN CREEK RD

Start Time	27-Apr-21 Tue	EB	WB							Total
12:00 AM		2	3							5
01:00		6	6							12
02:00		19	8							27
03:00		25	17							42
04:00		114	33							147
05:00		116	68							184
06:00		190	151							341
07:00		125	137							262
08:00		105	136							241
09:00		125	110							235
10:00		134	135							269
11:00		130	150							280
12:00 PM		181	138							319
01:00		179	201							380
02:00		153	215							368
03:00		145	189							334
04:00		115	130							245
05:00		82	69							151
06:00		49	53							102
07:00		41	25							66
08:00		34	24							58
09:00		19	24							43
10:00		9	10							19
11:00		6	8							14
Total		2104	2040							4144
Percent		50.8%	49.2%							
AM Peak	-	06:00	06:00	-	-	-	-	-	-	06:00
Vol.	-	190	151	-	-	-	-	-	-	341
PM Peak	-	12:00	14:00	-	-	-	-	-	-	13:00
Vol.	-	181	215	-	-	-	-	-	-	380
Grand Total		2104	2040							4144
Percent		50.8%	49.2%							
ADT		ADT 4,134	AADT 4,134							

Appendix D

Reference Material

Churn Creek/Rancho/Victor Roundabout**Project # ST-4226-09****Description:** Construct roundabout at convergence of Churn Creek Road with both Victor Avenue and Rancho Road.**Location:** Churn Creek/Ranch/Victor Intersection**Project Cost:** Prior Years/Future Costs: \$0**Project Type:** One-time Street Improvement

CIP Costs(detailed below) \$4,700,000

Total Project Cost: \$4,700,000

Funding:	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Traffic Impact Fees	\$50,000	\$100,000	\$150,000	\$200,000	\$200,000	\$4,000,000	\$4,700,000
Total	\$50,000	\$100,000	\$150,000	\$200,000	\$200,000	\$4,000,000	\$4,700,000
Project Development	\$50,000	\$100,000	\$150,000	\$200,000	\$200,000	\$0	\$700,000
Construction	\$0	\$0	\$0	\$0	\$0	\$4,000,000	\$4,000,000
Total	\$50,000	\$100,000	\$150,000	\$200,000	\$200,000	\$4,000,000	\$4,700,000

Traffic Signal Modification**Project # ST-4226-10****Description:****Location:** Buenaventura Blvd at Sunset Avenue**Project Cost:** Prior Years/Future Costs: \$0**Project Type:** One-time Street Improvement

CIP Costs(detailed below) \$360,280

Total Project Cost: \$360,280

Funding:	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Developer Contribution	\$0	\$30,140	\$0	\$0	\$0	\$0	\$30,140
Traffic Impact Fees	\$0	\$150,000	\$0	\$0	\$0	\$0	\$150,000
Total	\$0	\$180,140	\$0	\$0	\$0	\$0	\$180,140
Project Development	\$0	\$27,020	\$0	\$0	\$0	\$0	\$27,020
Construction	\$0	\$153,120	\$0	\$0	\$0	\$0	\$153,120
Total	\$0	\$180,140	\$0	\$0	\$0	\$0	\$180,140

S Bonnyview/I-5 Interchange**Project # ST-4226-11****Description:** Project to improve South Bonnyview corridor between Bechelli and Churn Creek including intersections, ramps, and interchange. Needed to accommodate growth and will be a TIF credit/reimbursement agreement.**Location:** S Bonnyview I5 NB Ramp**Project Cost:** Prior Years/Future Costs: \$0**Project Type:** One-time Street Improvement

CIP Costs(detailed below) \$8,500,000

Total Project Cost: \$8,500,000

Funding:	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Traffic Impact Fees	\$0	\$1,500,000	\$7,000,000	\$0	\$0	\$0	\$8,500,000
Total	\$0	\$1,500,000	\$7,000,000	\$0	\$0	\$0	\$8,500,000
Project Development	\$0	\$1,500,000	\$0	\$0	\$0	\$0	\$1,500,000
Construction	\$0	\$0	\$7,000,000	\$0	\$0	\$0	\$7,000,000
Total	\$0	\$1,500,000	\$7,000,000	\$0	\$0	\$0	\$8,500,000

Girvan Road Railroad Crossing Improvements**Project # ST-4783-07****Description:** Modify intersections at Eastside and SR 273 to accommodate pedestrians and reduce vertical grade separation at the railroad crossing.**Location:** Girvan Road at SR 273**Project Cost:** Prior Years/Future Costs: \$167,469**Project Type:** One-time Street Improvement

CIP Costs(detailed below) \$7,097,031

Total Project Cost: \$7,264,500

Funding:	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	Total
State CPUC Grant	\$7,097,031	\$0	\$0	\$0	\$0	\$0	\$7,097,031
Total	\$7,097,031	\$0	\$0	\$0	\$0	\$0	\$7,097,031
Project Development	\$1,097,031	\$0	\$0	\$0	\$0	\$0	\$1,097,031
Construction	\$6,000,000	\$0	\$0	\$0	\$0	\$0	\$6,000,000
Total	\$7,097,031	\$0	\$0	\$0	\$0	\$0	\$7,097,031

Shasta Street Railroad Crossing Improvements**Project # ST-4783-08****Description:** Install pedestrian crossing improvements on north side of railroad crossing.**Location:** Shasta Street**Project Cost:** Prior Years/Future Costs: \$48,970**Project Type:** One-time Street Improvement

CIP Costs(detailed below) \$368,585

Total Project Cost: \$417,555

Funding:	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	Total
State CPUC Grant	\$118,585	\$250,000	\$0	\$0	\$0	\$0	\$368,585
Total	\$118,585	\$250,000	\$0	\$0	\$0	\$0	\$368,585
Project Development	\$118,585	\$0	\$0	\$0	\$0	\$0	\$118,585
Construction	\$0	\$250,000	\$0	\$0	\$0	\$0	\$250,000
Total	\$118,585	\$250,000	\$0	\$0	\$0	\$0	\$368,585

Airport Corridor Phase II**Project # ST-4803-01****Description:** Widen Airport Road for additional capacity and operational safety.**Location:** Airport Road Corridor**Project Cost:** Prior Years/Future Costs: \$0**Project Type:** One-time Street Widening/Extension

CIP Costs(detailed below) \$1,100,000

Total Project Cost: \$1,100,000

Funding:	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Local Streets and Roads Fund	\$150,000	\$150,000	\$800,000	\$0	\$0	\$0	\$1,100,000
Total	\$150,000	\$150,000	\$800,000	\$0	\$0	\$0	\$1,100,000
Project Development	\$150,000	\$150,000	\$0	\$0	\$0	\$0	\$300,000
Construction	\$0	\$0	\$800,000	\$0	\$0	\$0	\$800,000
Total	\$150,000	\$150,000	\$800,000	\$0	\$0	\$0	\$1,100,000

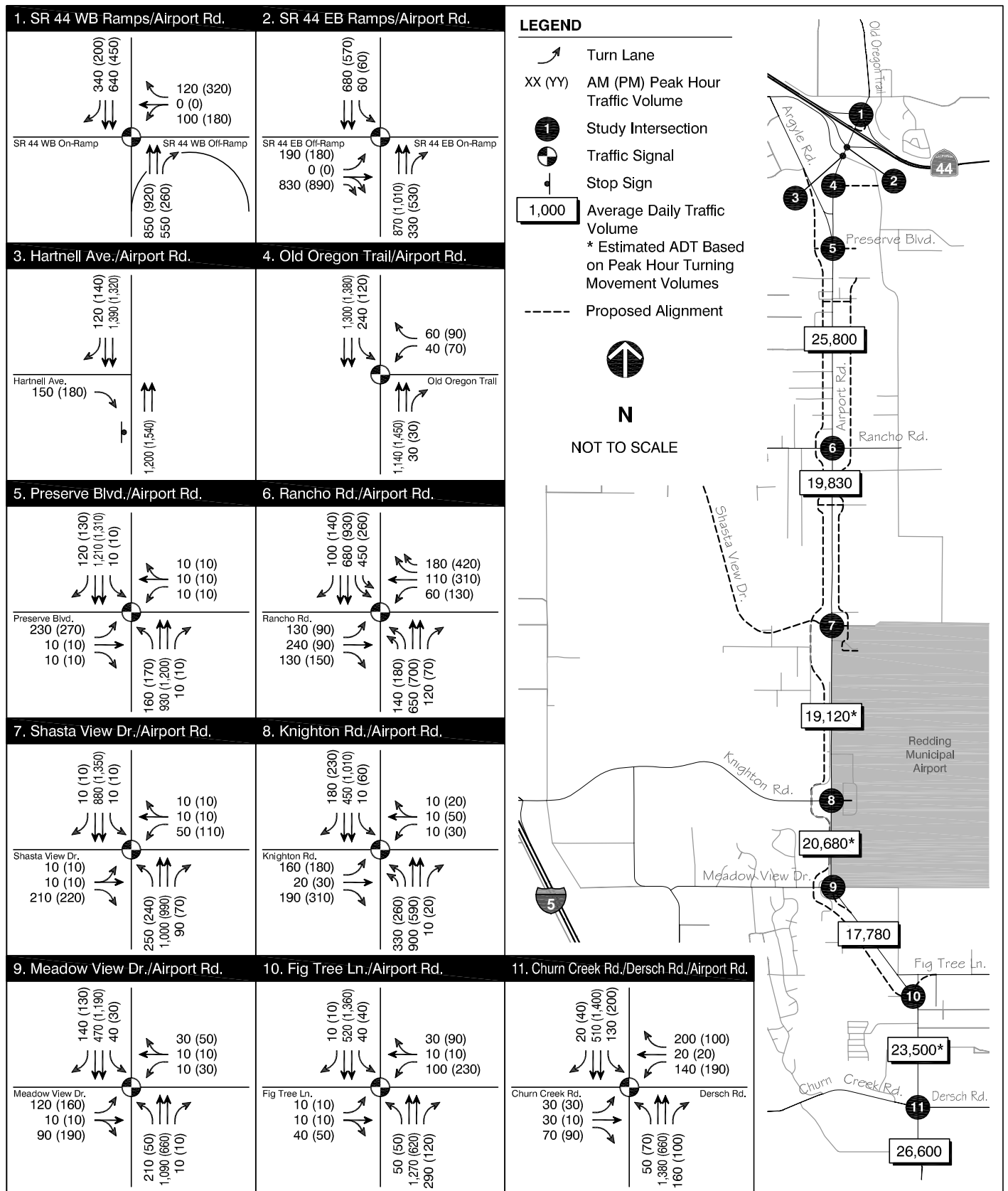




Figure 5 Alternative 1A – All four interchange ramps will be widened and lengthened, plus the overcrossing will be widened by 8 ft, to provide 8-lanes on Bonnyview. Intersections at Bechelli/Bonnyview and Churn Creek/Bonnyview will be widened as well. New sliver right of way will be needed adjacent to each ramp.

Alternative 1A improvements include:

Interchange ramps

- ◆ Lengthen and widen the northbound on-ramp to 2-lanes at the ramp termini.
 - Geometrics for ultimate conversion to ramp metering.
 - The expectation is that these improvements at the northbound on-ramp are going to be in place via the following project:
 - Northbound On-Ramp from South Bonnyview
02-SHA-5-PM-R12.0/R12.7
EA 02-2H960
 - The estimate does not include any work on the main northbound on ramp (construction anticipated summer 2018).
- ◆ Lengthen and widen the southbound off-ramp to 3-lanes at the ramp termini.
 - Provide double right turn.
- ◆ Lengthen and widen the southbound on-ramp to 2-lanes at the ramp termini.
 - Geometrics for ultimate conversion to ramp metering.
- ◆ Lengthen and widen the northbound off-ramp to 3-lanes at the ramp termini.
 - Provide double left turn.
- ◆ Retaining walls and/or incorporating development site plan designs to match ramp profiles will be used adjacent to each ramp as needed to minimize right of way impacts.
- ◆ Minimum landscape width requirements

- o Maintenance requires a minimum of 18 ft between the ramp edge of pavement to the right of way line to maintain landscape plants.
- o Ramps were set up to include enough room for landscaping.
- ♦ Existing overhead signs (G85) at exit ramps.
 - o Longer southbound off-ramp will not impact the sign at the southbound exit.
 - o Longer northbound off-ramp will require the sign at the northbound exit to be relocated.
 - The existing sign can be reset on a new foundation if the new sign location is at the same elevation as the existing (relative to the roadway).
 - Reusing the same sign would yield by far the greatest savings when it comes to relocating the sign.

South Bonnyview Road corridor

South Bonnyview will be widened to at least seven lanes throughout the study area (eight lanes between the interchange ramps), see Figures 6, 7, and 8 for improvements along the South Bonnyview corridor. Lane width will be 11 ft with 6 ft wide shoulders and sidewalks.

Overcrossing bridge (#06-0122)

Overcrossing along South Bonnyview

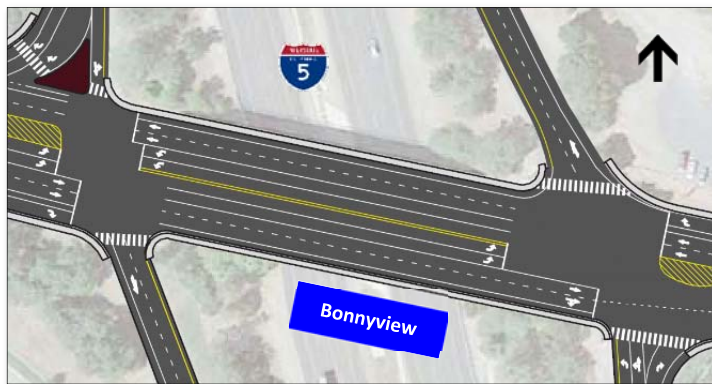


Figure 6

The freeway overcrossing (Bridge # 06-0122) will be widened on the south side by 8 ft to provide 8 lanes at 11 ft each plus 6 ft shoulders and sidewalks.

No change to the minimum clearances under the bridge.

South Bonnyview/Bechelli intersection

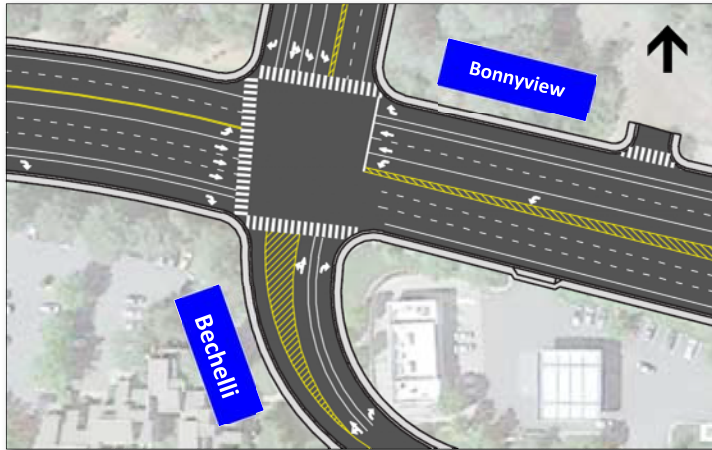


Figure 7

The South Bonnyview/Bechelli intersection will require additional lanes on all approaches and new right of way.

South Bonnyview/Churn Creek intersection

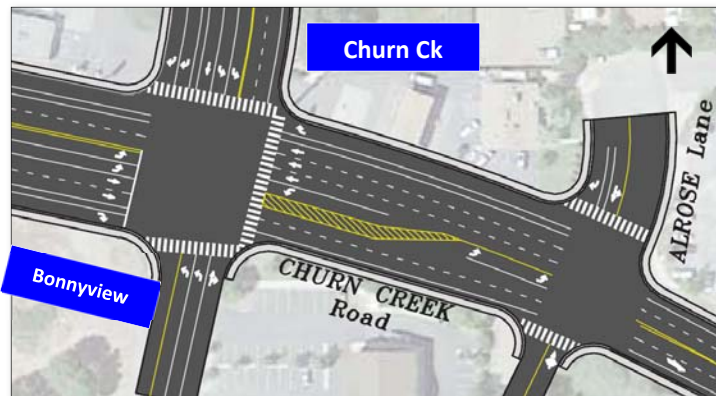


Figure 8

The South Bonnyview/Churn Creek intersection will require additional lanes on all approaches plus new right of way.

Analysis / Comments

Analysis and comments for each alternative are in comparison to the other alternatives and the project Purpose and Need.

Pros

- ◆ Most suitable for phased construction.
- ◆ Conventional layout meets driver expectation.

Cons

- ◆ Requires more lanes or pavement than the other alternatives.
- ◆ By far the highest 2045 PM peak hour travel time through the corridor (intersection 1 through intersection 4).
 - Eastbound travel time – 125 seconds
 - Westbound travel time – 175 seconds
 - See Table 6 for more information

- ◆ Highest travel time will lead to higher greenhouse gas emissions.
- ◆ More right of way impacts to existing businesses than other alternatives.
- ◆ Highest amount of conflict points throughout the corridor.
- ◆ Traffic backs up at South Bonnyview/Bechelli and South Bonnyview/Churn Creek more than other concepts.
- ◆ Nothing special for the gateway entering Redding.

Alternative 2A

Diverging Diamond Interchange

- Traditional signalized intersections at
 - South Bonnyview/Bechelli
 - South Bonnyview/Churn Creek Road

Alternative 2A

Alternative 2A replaces the existing tight diamond interchange with a diverging diamond layout. Traditional signalized intersections remain at South Bonnyview/Bechelli and South Bonnyview/Churn Creek (See Figure 9 below).



Figure 9 Alternative 2A – Traffic switches between the ramp intersections to make left turns onto the on-ramps a free flowing simple move. Pedestrians are routed to the center between the interchange ramps. Bikers either use the center sidewalk or the right shoulder. Two bridge corners (NE and SW) will need to be widened to allow for truck turning and improved sight distance.



Churn Creek/Victor/Rancho Roundabout

30% Design Report

City of Redding

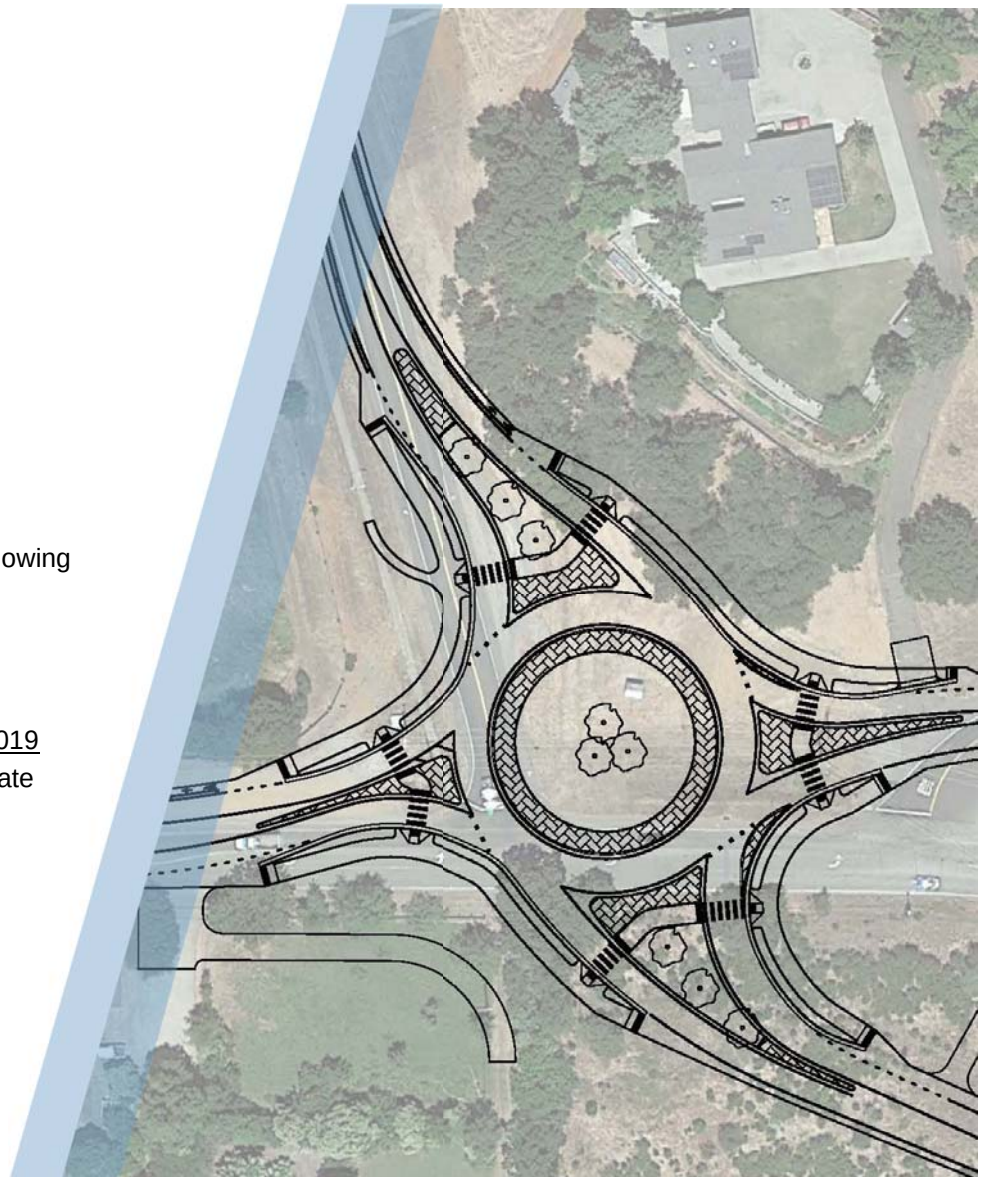
Prepared under the direction of the following
Registered civil engineer:

A handwritten signature in blue ink, appearing to read "Ryan Blais", is written over a horizontal line.

February 4, 2019

Ryan Blais, PE

Date





4.1.1 Churn Creek Road / Huntington Drive Intersection (Intersection No. 12 in the TIAR)

Without Project:

- Existing: LOS "C".
- Year 2020 + River Crossing (RC) development: LOS "D".
- Year 2040 + RC development: LOS "F".

With Proposed Project:

- Year 2020 + River Crossing (RC) development: LOS "D".
- Year 2040 + RC development: LOS "C".

4.1.2 Churn Creek Road / Victor Avenue Intersection (Intersection No. 13 in the TIAR)

Without Project:

- Existing: LOS "D".
- Year 2020 + River Crossing (RC) development: LOS "F".
- Year 2040 + RC development: LOS "F".

With Proposed Project:

- Year 2020 + River Crossing (RC) development: LOS "B".
- Year 2040 + RC development: LOS "B".

4.1.3 Churn Creek Road / Rancho Road Intersection (Intersection No. 14 in the TIAR)

Without Project:

- Existing: LOS "C".
- Year 2020 + River Crossing (RC) development: LOS "D".
- Year 2040 + RC development: LOS "E".

With Proposed Project:

- Year 2020 + River Crossing (RC) development: LOS "B".
- Year 2040 + RC development: LOS "B".

4.2 Active Transportation Facilities

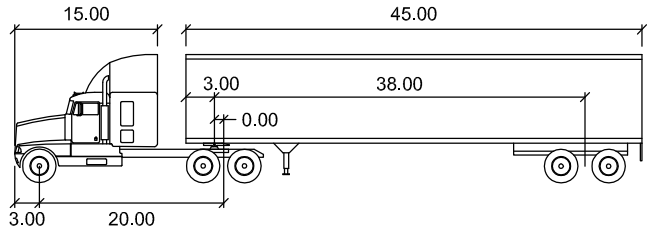
Walking and bicycling "active transportation" are important components of the City's transportation system. Active transportation supports public health, community vitality and quality of life. The existing and recommended bicycle and pedestrian networks are described in the 2018 City of Redding Active Transportation Plan (ATP) and the 2018 GoShasta ATP.

4.2.1 Existing Roadway Shoulders

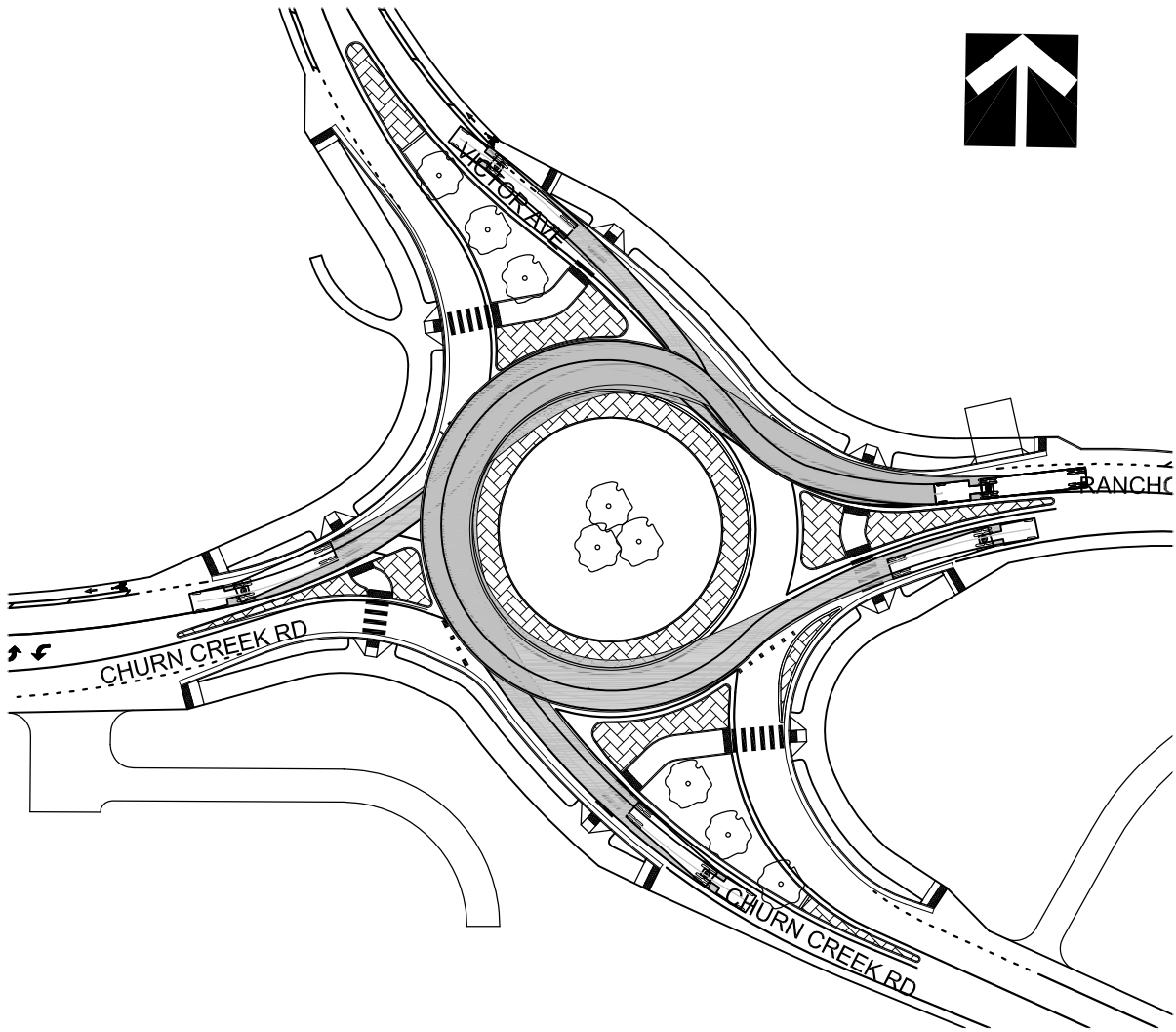
In the project vicinity, paved shoulders exist as follows:

- Churn Creek Road: Varies from 0-feet to 4-feet in width.
- Huntington Drive: Varies from 4-feet to 8-feet in width.
- Victor Avenue: 4-feet in width.
- Rancho Road: Varies from 1-feet to 8-feet in width.

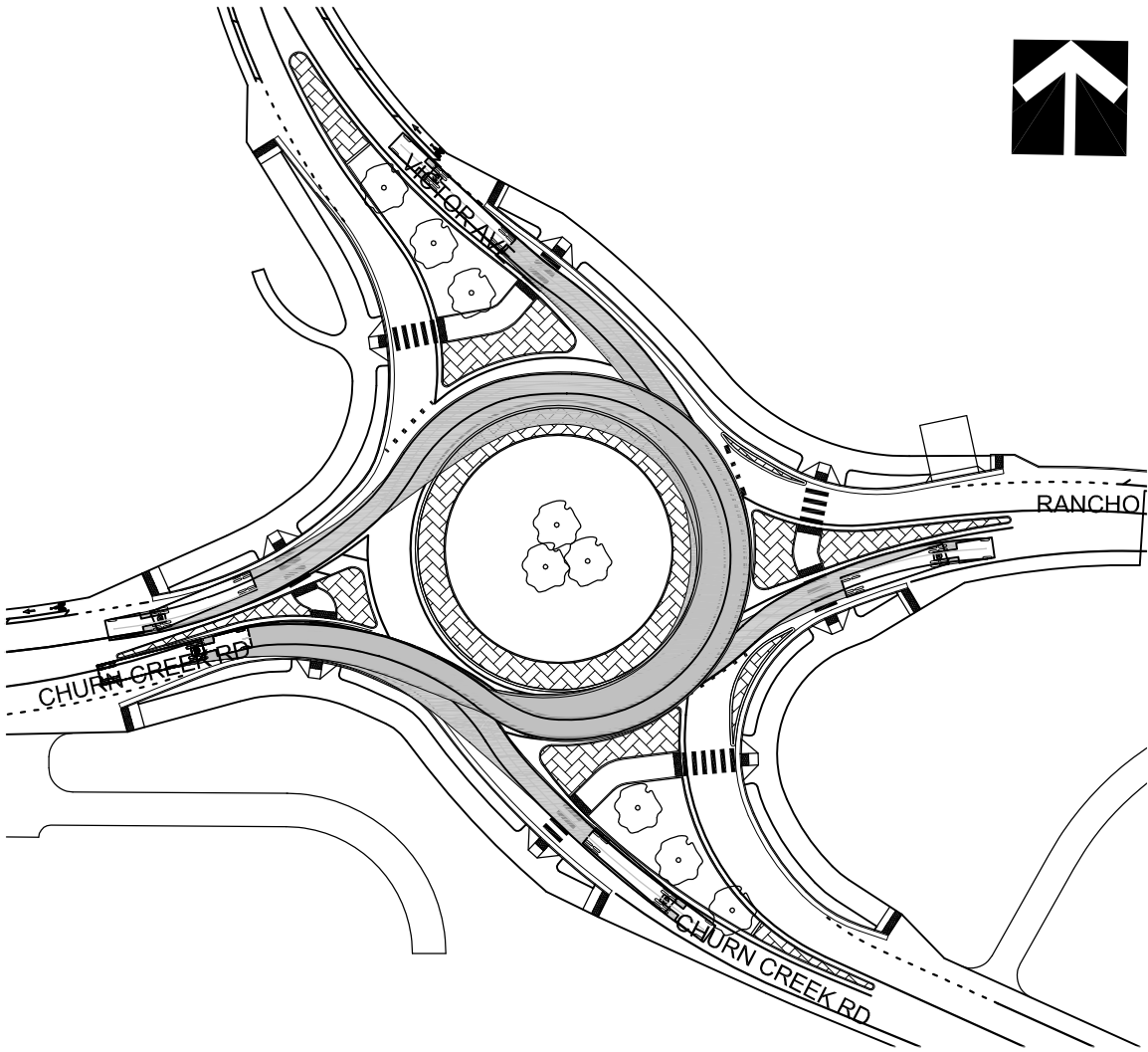
Truck Turns



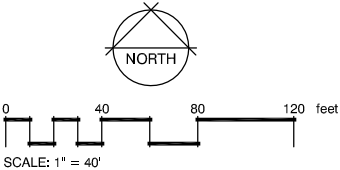
CA LEGAL	FT		
TRACTOR WIDTH	: 8.50	LOCK TO LOCK TIME	: 6.0
TRAILER WIDTH	: 8.50	STEERING ANGLE	: 20.9
TRACTOR TRACK	: 8.50	ARTICULATING ANGLE	: 70.0
TRAILER TRACK	: 8.50		



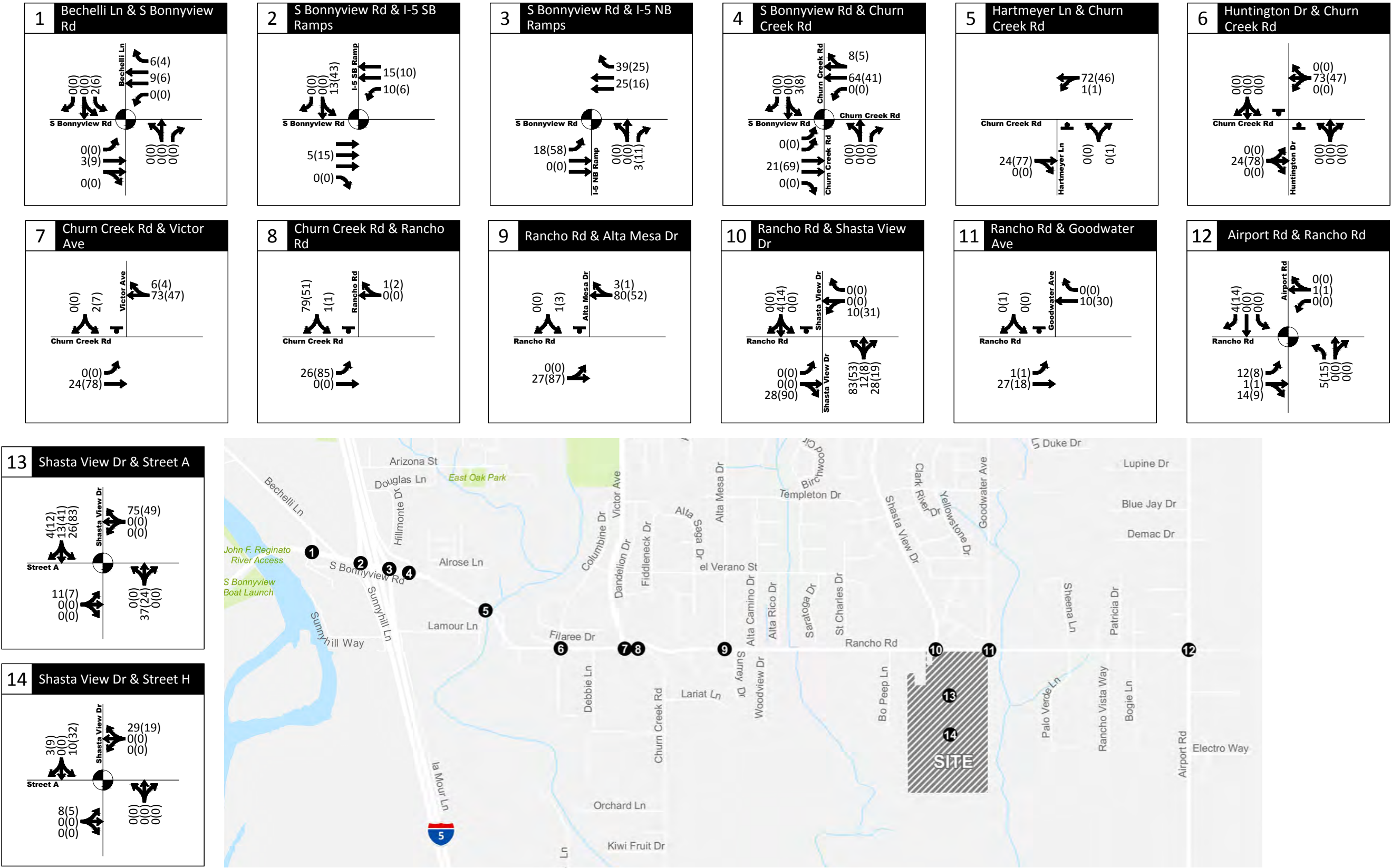
WB APPROACH



EB APPROACH



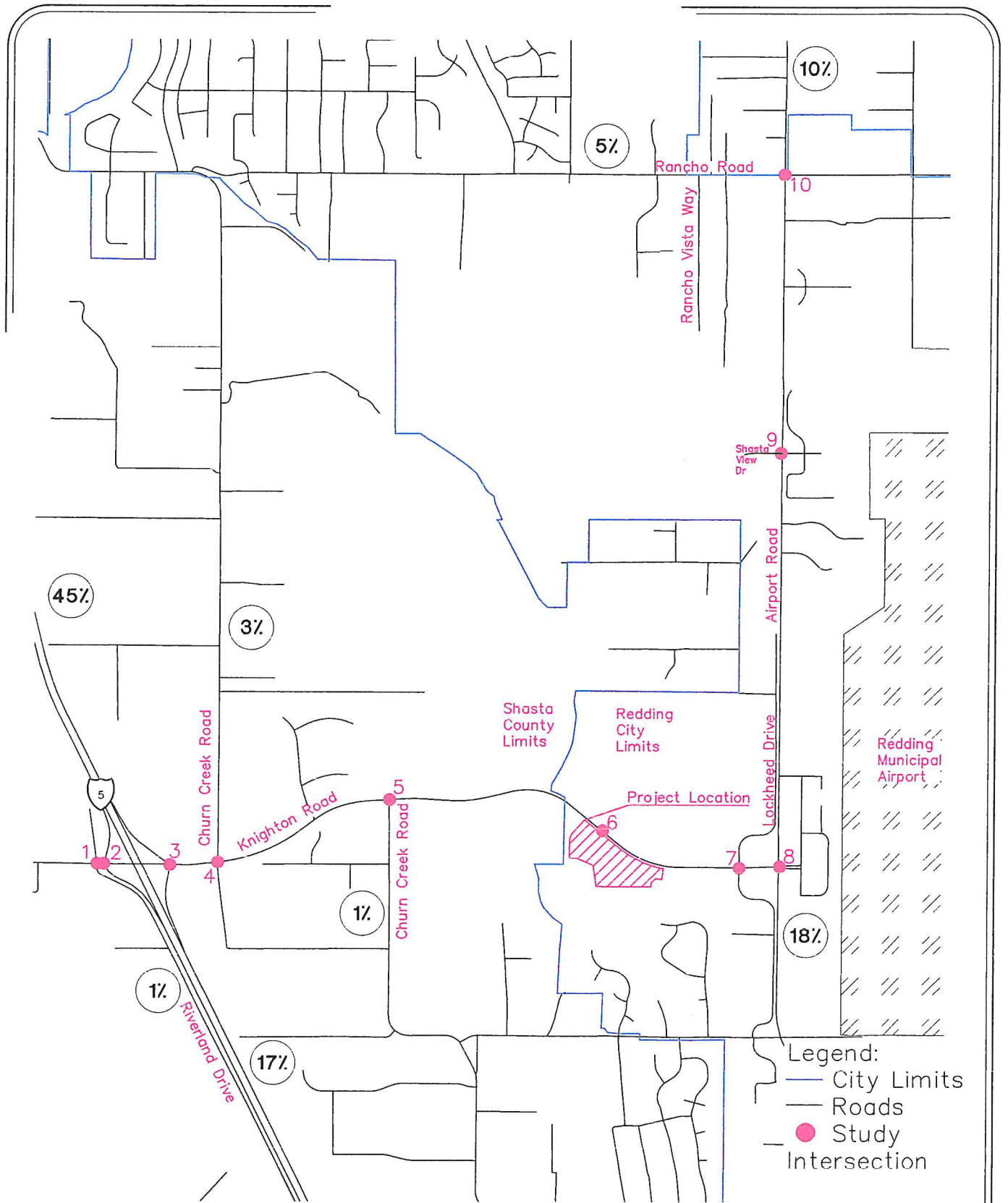
C:\KAI Applications\Autodesk\TEMP\AcPublish\27240\23576_Fig01.dwg Jun 27, 2019 - 4:02pm - amartin Layout Tab: Project



AM(PM) - Traffic Volume **##** - Study Intersections
- Stop Sign
- Traffic Signal

Intersection Traffic Volumes and Geometry - Project Only
Redding, California

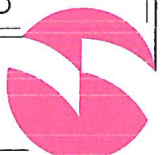
Figure
8



Northern California Veteran's Health Clinic

Figure 5

Trip Distribution



Appendix E

*Intersection Analysis Worksheets for
Existing Year (2021) Conditions*

SimTraffic Simulation Summary
AM Peak Hour

08/05/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	6509	6477	6499	6422	6494	6504	6565
Vehs Exited	6501	6462	6496	6421	6449	6497	6540
Starting Vehs	345	379	361	374	348	377	372
Ending Vehs	353	394	364	375	393	384	397
Travel Distance (mi)	8099	8054	8165	7963	8175	8323	8217
Travel Time (hr)	400.9	399.6	428.9	384.7	394.8	414.6	406.2
Total Delay (hr)	116.2	115.9	141.8	104.6	107.1	122.0	116.7
Total Stops	10137	10014	10241	9812	10323	10524	10359
Fuel Used (gal)	278.9	278.4	286.9	272.2	281.4	287.4	283.4

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	6578	6325	6443	6479
Vehs Exited	6507	6290	6445	6460
Starting Vehs	335	355	356	356
Ending Vehs	406	390	354	372
Travel Distance (mi)	8175	7856	7892	8092
Travel Time (hr)	404.0	375.1	431.8	404.1
Total Delay (hr)	116.3	98.5	153.4	119.2
Total Stops	10369	9948	10502	10223
Fuel Used (gal)	281.0	268.3	282.2	280.0

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
AM Peak Hour

08/05/2021

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1597	1594	1633	1581	1669	1614	1665
Vehs Exited	1590	1595	1616	1591	1629	1576	1638
Starting Vehs	345	379	361	374	348	377	372
Ending Vehs	352	378	378	364	388	415	399
Travel Distance (mi)	2042	1993	2012	1969	2122	1986	2063
Travel Time (hr)	96.9	95.6	104.9	92.5	101.7	97.7	103.2
Total Delay (hr)	25.1	25.5	34.2	23.6	26.8	27.5	30.5
Total Stops	2450	2557	2619	2374	2693	2497	2511
Fuel Used (gal)	69.1	67.7	70.7	66.9	72.4	68.7	70.9

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1609	1559	1596	1610
Vehs Exited	1537	1545	1578	1589
Starting Vehs	335	355	356	356
Ending Vehs	407	369	374	376
Travel Distance (mi)	1994	1910	1910	2000
Travel Time (hr)	97.3	90.0	92.3	97.2
Total Delay (hr)	27.1	22.5	25.0	26.8
Total Stops	2580	2327	2402	2500
Fuel Used (gal)	67.9	64.7	65.2	68.4

SimTraffic Simulation Summary
AM Peak Hour

08/05/2021

Interval #2 Information

Start Time 7:15
End Time 7:30
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1701	1604	1653	1633	1558	1662	1639
Vehs Exited	1654	1614	1591	1588	1577	1668	1644
Starting Vehs	352	378	378	364	388	415	399
Ending Vehs	399	368	440	409	369	409	394
Travel Distance (mi)	2067	1997	2038	1977	1969	2184	2077
Travel Time (hr)	105.2	94.5	106.4	94.7	92.9	113.8	98.1
Total Delay (hr)	32.3	24.1	34.8	24.9	23.8	36.9	25.2
Total Stops	2544	2362	2652	2362	2409	2778	2500
Fuel Used (gal)	72.2	67.6	71.2	67.2	67.4	76.7	70.0

Interval #2 Information

Start Time 7:15
End Time 7:30
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1640	1586	1612	1630
Vehs Exited	1681	1567	1621	1621
Starting Vehs	407	369	374	376
Ending Vehs	366	388	365	386
Travel Distance (mi)	2040	1951	1984	2029
Travel Time (hr)	96.9	93.0	99.1	99.5
Total Delay (hr)	24.9	24.3	29.0	28.0
Total Stops	2467	2527	2703	2523
Fuel Used (gal)	69.3	66.5	68.4	69.7

SimTraffic Simulation Summary
AM Peak Hour

08/05/2021

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	1	10	2	3	4	5	6
Vehs Entered	1581	1630	1621	1595	1620	1637	1635
Vehs Exited	1585	1616	1659	1628	1619	1654	1660
Starting Vehs	399	368	440	409	369	409	394
Ending Vehs	395	382	402	376	370	392	369
Travel Distance (mi)	1966	2061	2127	1991	2050	2060	2070
Travel Time (hr)	96.4	100.9	109.7	99.1	98.8	102.6	102.6
Total Delay (hr)	27.4	28.4	34.8	29.0	26.5	30.4	29.3
Total Stops	2539	2418	2671	2585	2488	2701	2704
Fuel Used (gal)	67.4	71.0	73.6	68.6	70.5	70.8	72.2

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	7	8	9	Avg
Vehs Entered	1700	1583	1606	1618
Vehs Exited	1664	1587	1592	1626
Starting Vehs	366	388	365	386
Ending Vehs	402	384	379	377
Travel Distance (mi)	2100	2008	1987	2042
Travel Time (hr)	104.5	95.5	114.2	102.4
Total Delay (hr)	30.9	25.2	44.0	30.6
Total Stops	2677	2531	2632	2590
Fuel Used (gal)	72.8	68.9	72.6	70.9

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1630	1649	1592	1613	1647	1591	1626
Vehs Exited	1672	1637	1630	1614	1624	1599	1598
Starting Vehs	395	382	402	376	370	392	369
Ending Vehs	353	394	364	375	393	384	397
Travel Distance (mi)	2024	2004	1989	2026	2035	2092	2006
Travel Time (hr)	102.3	108.7	107.9	98.4	101.4	100.5	102.3
Total Delay (hr)	31.4	37.8	37.9	27.1	30.0	27.1	31.6
Total Stops	2604	2677	2299	2491	2733	2548	2644
Fuel Used (gal)	70.3	72.0	71.3	69.4	71.0	71.2	70.3

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1629	1597	1629	1622
Vehs Exited	1625	1591	1654	1623
Starting Vehs	402	384	379	377
Ending Vehs	406	390	354	372
Travel Distance (mi)	2041	1987	2010	2021
Travel Time (hr)	105.3	96.6	126.2	105.0
Total Delay (hr)	33.4	26.6	55.4	33.8
Total Stops	2645	2563	2765	2597
Fuel Used (gal)	71.0	68.3	76.1	71.1

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	5.4	2.0	0.0	0.0	0.0	0.0	0.0	7.5
Denied Del/Veh (s)	19.1	18.9	0.0	0.0	0.4	0.4	0.4	10.0
Total Delay (hr)	16.0	1.4	2.3	1.6	4.2	0.5	0.1	26.2
Total Del/Veh (s)	56.4	13.1	30.9	8.7	49.1	49.1	13.8	34.8
Stop Delay (hr)	13.0	1.2	2.0	1.0	3.7	0.5	0.1	21.4
Stop Del/Veh (s)	45.8	11.4	26.3	5.6	43.0	41.5	10.0	28.5

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.0	1.0	3.3	0.4
Total Delay (hr)	6.9	1.7	2.9	0.9	3.5	0.5	0.9	17.2
Total Del/Veh (s)	42.7	8.3	17.6	8.0	32.3	37.6	12.9	20.7
Stop Delay (hr)	6.0	1.1	2.3	0.7	2.8	0.4	0.7	14.1
Stop Del/Veh (s)	37.4	5.4	14.1	6.5	26.5	30.4	10.2	17.0

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	1.1	0.6	0.0	0.0	0.0	0.0	1.8
Denied Del/Veh (s)	0.0	0.0	0.0	2.8	7.0	8.3	0.1	0.1	0.2	0.3	2.9
Total Delay (hr)	5.0	0.7	0.0	0.1	4.2	1.9	0.2	0.0	0.6	1.5	14.1
Total Del/Veh (s)	36.8	6.0	1.8	51.2	26.1	25.4	44.5	4.7	32.5	13.8	22.9
Stop Delay (hr)	4.5	0.5	0.0	0.1	3.5	1.6	0.2	0.0	0.6	1.3	12.2
Stop Del/Veh (s)	33.2	4.5	1.3	48.7	21.6	21.7	43.2	5.3	30.1	11.7	19.8

4: Churn Creek Road & Victor Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Delay (hr)	0.1	0.3	0.1	0.0	0.2	0.5	1.2
Total Del/Veh (s)	6.8	2.5	0.7	0.4	15.8	7.6	3.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.4	0.7
Stop Del/Veh (s)	2.5	0.0	0.3	0.3	13.0	6.2	2.0

5: Churn Creek Road & Rancho Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	0.0	0.0	0.1	0.0	0.8	1.3
Total Del/Veh (s)	2.8	0.5	0.9	0.2	13.8	0.7	8.7	4.9
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	0.7	0.8
Stop Del/Veh (s)	0.8	0.1	0.0	0.0	10.4	0.0	6.9	3.3

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.3	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.1	3.4	0.0	0.0	0.0	0.0	0.8
Total Delay (hr)	1.3	0.6	1.8	0.3	0.3	1.3	5.5
Total Del/Veh (s)	19.1	7.2	13.2	6.0	32.3	10.6	12.0
Stop Delay (hr)	1.0	0.4	1.2	0.2	0.3	0.7	3.8
Stop Del/Veh (s)	15.5	4.9	9.0	3.6	28.1	6.1	8.4

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	4.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.4	0.0	0.1	0.0	0.0	0.0	0.5	0.0	0.0	0.2	0.0	1.4
Total Del/Veh (s)	28.8	34.4	6.9	20.2	9.2	6.8	2.2	1.9	6.0	1.3	0.8	2.9
Stop Delay (hr)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Stop Del/Veh (s)	26.7	30.8	6.1	17.0	9.0	3.7	0.1	0.0	3.7	0.3	0.3	1.3

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.7	0.0	0.0	0.4	1.2
Total Del/Veh (s)	9.0	4.6	5.8	3.9	7.1	3.7	4.8
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	7.9	4.9	0.1	0.0	3.0	0.2	0.2

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.6	0.4	0.0	0.0	0.4
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.0	0.0	0.0	0.0

15: Aviation Drive & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.3	1.2	1.8	1.2
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.4	0.4	0.1	0.4

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBR	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.1	0.0	0.0	2.0	0.0	0.4	0.8	0.0	3.3
Total Del/Veh (s)	19.6	4.0	5.1	15.0	6.5	20.3	9.3	11.0	13.2
Stop Delay (hr)	0.1	0.0	0.0	0.7	0.0	0.3	0.3	0.0	1.4
Stop Del/Veh (s)	18.0	4.2	5.3	5.6	1.8	13.7	3.4	1.2	5.6

Total Zone Performance

Denied Delay (hr)	10.1
Denied Del/Veh (s)	8.5
Total Delay (hr)	71.3
Total Del/Veh (s)	305.9
Stop Delay (hr)	55.1
Stop Del/Veh (s)	236.6

HCM 6th TWSC
6: Rancho Road & Alta Mesa Drive

2021 Existing
AM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	294	303	5	63	94
Future Vol, veh/h	30	294	303	5	63	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	320	329	5	68	102
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	334	0	-	0	718	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1225	-	-	-	396	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1225	-	-	-	383	710
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	687	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		15		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1225	-	-	-	529	
HCM Lane V/C Ratio	0.027	-	-	-	0.323	
HCM Control Delay (s)	8	0	-	-	15	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2021 Existing
AM Peak Hour

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	405	0	2	116	35	22	5	6	43	5	139
Future Vol, veh/h	27	405	0	2	116	35	22	5	6	43	5	139
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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	440	0	2	126	38	24	5	7	47	5	151

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	440	0	0	725	666	440	634	628	126
Stage 1	-	-	-	-	-	-	498	498	-	130	130	-
Stage 2	-	-	-	-	-	-	227	168	-	504	498	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1414	-	-	1120	-	-	340	380	617	392	400	924
Stage 1	-	-	-	-	-	-	554	544	-	874	789	-
Stage 2	-	-	-	-	-	-	776	759	-	550	544	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1414	-	-	1120	-	-	277	371	617	377	391	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	277	371	-	377	391	-
Stage 1	-	-	-	-	-	-	542	533	-	856	787	-
Stage 2	-	-	-	-	-	-	643	757	-	528	533	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			17.1			11.4		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	277	474	1414	-	-	1120	-	-	377	882
HCM Lane V/C Ratio	0.086	0.025	0.021	-	-	0.002	-	-	0.124	0.177
HCM Control Delay (s)	19.2	12.8	7.6	-	-	8.2	-	-	15.9	10
HCM Lane LOS	C	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0.1	0.1	-	-	0	-	-	0.4	0.6

HCM 6th Signalized Intersection Summary 8: Airport Road & Rancho Road

2021 Existing
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	4	127	0	11	25	49	382	0	3	273	61
Future Volume (veh/h)	449	4	127	0	11	25	49	382	0	3	273	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	488	4	138	0	12	27	53	415	0	3	297	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	548	19	660	3	29	66	67	537	455	4	472	400
Arrive On Green	0.31	0.43	0.43	0.00	0.06	0.06	0.04	0.29	0.00	0.00	0.25	0.25
Sat Flow, veh/h	1781	45	1547	1781	512	1151	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	488	0	142	0	0	39	53	415	0	3	297	66
Grp Sat Flow(s),veh/h/ln	1781	0	1592	1781	0	1663	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	14.7	0.0	3.1	0.0	0.0	1.3	1.7	11.4	0.0	0.1	7.9	1.8
Cycle Q Clear(g_c), s	14.7	0.0	3.1	0.0	0.0	1.3	1.7	11.4	0.0	0.1	7.9	1.8
Prop In Lane	1.00		0.97	1.00		0.69	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	548	0	680	3	0	95	67	537	455	4	472	400
V/C Ratio(X)	0.89	0.00	0.21	0.00	0.00	0.41	0.79	0.77	0.00	0.69	0.63	0.17
Avail Cap(c_a), veh/h	635	0	710	492	0	741	635	1334	1131	635	1334	1131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	10.1	0.0	0.0	25.5	26.8	18.3	0.0	27.9	18.6	16.4
Incr Delay (d2), s/veh	13.4	0.0	0.2	0.0	0.0	2.8	18.8	2.4	0.0	110.7	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	1.0	0.0	0.0	0.5	1.0	4.7	0.0	0.2	3.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	0.0	10.3	0.0	0.0	28.4	45.5	20.7	0.0	138.7	20.0	16.6
LnGrp LOS	C	A	B	A	A	C	D	C	A	F	C	B
Approach Vol, veh/h	630					39		468		366		
Approach Delay, s/veh	27.1					28.4		23.5		20.4		
Approach LOS	C					C		C		C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	22.5	0.0	29.9	5.6	20.5	20.7	9.2				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	20.0	40.0	15.5	25.0	20.0	40.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	2.1	13.4	0.0	5.1	3.7	9.9	16.7	3.3				
Green Ext Time (p_c), s	0.0	2.7	0.0	0.8	0.1	2.1	0.6	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			24.4									
HCM 6th LOS			C									
Notes												

HCM 6th TWSC
9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

2021 Existing
AM Peak Hour

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	0	0	0	104	0	66	222	504	0	0	366	273
Future Vol, veh/h	0	0	0	104	0	66	222	504	0	0	366	273
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	113	0	72	241	548	0	0	398	297
Major/Minor				Major2		Major1		Minor2				
Conflicting Flow All				548	0	0	72	0	-	-	1292	36
Stage 1				-	-	-	-	-	-	-	262	-
Stage 2				-	-	-	-	-	-	-	1030	-
Critical Hdwy				4.12	-	-	4.12	-	-	-	6.52	6.22
Critical Hdwy Stg 1				-	-	-	-	-	-	-	5.52	-
Critical Hdwy Stg 2				-	-	-	-	-	-	-	5.52	-
Follow-up Hdwy				2.218	-	-	2.218	-	-	-	4.018	3.318
Pot Cap-1 Maneuver				1021	-	-	1528	-	0	0 ~ 163	1037	
Stage 1				-	-	-	-	-	0	0	691	-
Stage 2				-	-	-	-	-	0	0 ~ 311	-	
Platoon blocked, %					-	-		-				
Mov Cap-1 Maneuver				1021	-	-	1528	-	-	-	0	1037
Mov Cap-2 Maneuver				-	-	-	-	-	-	-	0	-
Stage 1				-	-	-	-	-	-	-	0	-
Stage 2				-	-	-	-	-	-	-	0	-
Approach				WB		NB		SB				
HCM Control Delay, s				5.5		2.4		15.2				
HCM LOS								C				
Minor Lane/Major Mvmt		NBL	NBT	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)		1528	-	1021	-	-	1037					
HCM Lane V/C Ratio		0.158	-	0.111	-	-	0.67					
HCM Control Delay (s)		7.8	-	9	-	-	15.2					
HCM Lane LOS		A	-	A	-	-	C					
HCM 95th %tile Q(veh)		0.6	-	0.4	-	-	5.4					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

HCM 6th Signalized Intersection Summary

12: Airport Road & Preserve Boulevard

2021 Existing
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↱	↱	↱
Traffic Volume (veh/h)	32	7	3	866	430	15
Future Volume (veh/h)	32	7	3	866	430	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	8	3	941	467	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	68	60	6	1198	954	808
Arrive On Green	0.04	0.04	0.00	0.64	0.51	0.51
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	35	8	3	941	467	16
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	0.8	0.2	0.1	14.3	6.4	0.2
Cycle Q Clear(g_c), s	0.8	0.2	0.1	14.3	6.4	0.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	68	60	6	1198	954	808
V/C Ratio(X)	0.52	0.13	0.51	0.79	0.49	0.02
Avail Cap(c_a), veh/h	454	404	454	2145	1430	1212
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	18.2	19.5	5.1	6.3	4.8
Incr Delay (d2), s/veh	5.9	1.0	56.0	1.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.1	2.3	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.4	19.2	75.5	6.3	6.7	4.8
LnGrp LOS	C	B	E	A	A	A
Approach Vol, veh/h	43			944	483	
Approach Delay, s/veh	23.5			6.5	6.6	
Approach LOS	C			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	32.5			6.7	5.1	27.4
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	45.0			* 10	10.0	30.0
Max Q Clear Time (g_c+l1), s	16.3			2.8	2.1	8.4
Green Ext Time (p_c), s	8.9			0.0	0.0	3.0
Intersection Summary						
HCM 6th Ctrl Delay			7.0			
HCM 6th LOS			A			
Notes						

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2021 Existing
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	5	21	0	1	2	188	443	7	5	205	29
Future Volume (veh/h)	23	5	21	0	1	2	188	443	7	5	205	29
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	25	5	23	0	1	2	204	482	8	5	223	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	95	80	265	95	80	280	753	638	10	469	398
Arrive On Green	0.05	0.05	0.05	0.00	0.05	0.05	0.16	0.40	0.40	0.01	0.25	0.25
Sat Flow, veh/h	1414	1870	1585	1382	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	25	5	23	0	1	2	204	482	8	5	223	32
Grp Sat Flow(s),veh/h/ln	1414	1870	1585	1382	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.5	0.1	0.4	0.0	0.0	0.0	3.0	5.6	0.1	0.1	2.8	0.4
Cycle Q Clear(g_c), s	0.5	0.1	0.4	0.0	0.0	0.0	3.0	5.6	0.1	0.1	2.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	95	80	265	95	80	280	753	638	10	469	398
V/C Ratio(X)	0.07	0.05	0.29	0.00	0.01	0.02	0.73	0.64	0.01	0.51	0.48	0.08
Avail Cap(c_a), veh/h	1565	1721	1458	1467	1721	1458	1311	2409	2042	1311	2409	2042
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	12.3	12.4	0.0	12.2	12.3	10.9	6.5	4.9	13.5	8.7	7.8
Incr Delay (d2), s/veh	0.1	0.2	1.9	0.0	0.0	0.1	3.6	0.9	0.0	36.4	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	0.0	1.1	1.2	0.0	0.1	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	12.5	14.3	0.0	12.3	12.4	14.5	7.4	4.9	49.9	9.4	7.9
LnGrp LOS	B	B	B	A	B	B	B	A	A	D	A	A
Approach Vol, veh/h	53			3			694			260		
Approach Delay, s/veh	13.3			12.4			9.5			10.0		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	16.9		6.6	7.8	12.8		6.6				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	20.0	35.0		25.0	20.0	35.0		* 25				
Max Q Clear Time (g_c+I2),s	7.6			2.5	5.0	4.8		2.0				
Green Ext Time (p_c), s	0.0	3.3		0.1	0.5	1.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay 9.8

HCM 6th LOS A

Notes

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

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

SimTraffic Simulation Summary
PM Peak Hour

08/05/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	5898	5902	6013	5999	5948	5796	5963
Vehs Exited	5869	5852	5930	5930	5927	5790	5990
Starting Vehs	331	313	318	324	323	363	396
Ending Vehs	360	363	401	393	344	369	369
Travel Distance (mi)	7740	7573	7834	7626	7731	7616	7726
Travel Time (hr)	355.3	346.6	359.8	353.3	360.3	351.1	355.7
Total Delay (hr)	84.1	81.9	86.1	86.2	88.6	83.4	84.6
Total Stops	8633	8421	8965	8968	8736	8502	8892
Fuel Used (gal)	259.7	254.0	263.8	257.7	260.2	256.3	259.9

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	5955	5926	5822	5924
Vehs Exited	5866	5896	5801	5883
Starting Vehs	311	313	311	315
Ending Vehs	400	343	332	360
Travel Distance (mi)	7832	7527	7534	7674
Travel Time (hr)	359.6	349.3	353.1	354.4
Total Delay (hr)	85.2	84.7	88.8	85.4
Total Stops	8596	8695	8464	8689
Fuel Used (gal)	261.5	253.3	254.7	258.1

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
PM Peak Hour

08/05/2021

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1540	1492	1459	1485	1442	1422	1474
Vehs Exited	1539	1469	1442	1452	1421	1448	1534
Starting Vehs	331	313	318	324	323	363	396
Ending Vehs	332	336	335	357	344	337	336
Travel Distance (mi)	1986	1942	1886	1870	1829	1910	1946
Travel Time (hr)	90.8	87.6	86.2	86.5	82.2	90.8	92.2
Total Delay (hr)	21.2	19.8	20.0	21.0	18.0	23.5	24.1
Total Stops	2213	2075	2126	2248	2005	2218	2320
Fuel Used (gal)	66.2	64.5	64.1	63.4	60.6	64.6	66.1

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1532	1520	1478	0
Vehs Exited	1491	1458	1428	0
Starting Vehs	311	313	311	0
Ending Vehs	352	375	361	0
Travel Distance (mi)	1883	1836	1811	0
Travel Time (hr)	86.2	86.3	83.6	0.0
Total Delay (hr)	20.2	21.3	20.1	0.0
Total Stops	2108	2204	2121	0
Fuel Used (gal)	63.7	61.6	60.9	0.0

SimTraffic Simulation Summary
PM Peak Hour

08/05/2021

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1505	1430	1509	1447	1510	1470	1456
Vehs Exited	1476	1428	1479	1461	1469	1469	1465
Starting Vehs	332	336	335	357	344	337	336
Ending Vehs	361	338	365	343	385	338	327
Travel Distance (mi)	1922	1848	1948	1815	1990	1896	1872
Travel Time (hr)	86.6	83.8	88.9	84.4	93.1	88.2	84.8
Total Delay (hr)	19.3	19.0	20.9	20.5	23.3	21.7	18.9
Total Stops	2107	1962	2226	2189	2273	2185	2082
Fuel Used (gal)	64.4	61.8	65.9	61.3	67.1	64.1	62.5

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1481	1490	1473	0
Vehs Exited	1500	1499	1474	0
Starting Vehs	352	375	361	0
Ending Vehs	333	366	360	0
Travel Distance (mi)	1953	1886	1886	0
Travel Time (hr)	90.4	86.8	90.3	0.0
Total Delay (hr)	22.0	20.6	24.4	0.0
Total Stops	2206	2211	2071	0
Fuel Used (gal)	65.1	63.4	64.8	0.0

SimTraffic Simulation Summary
PM Peak Hour

08/05/2021

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1412	1490	1488	1544	1455	1446	1483
Vehs Exited	1462	1481	1517	1507	1501	1464	1473
Starting Vehs	361	338	365	343	385	338	327
Ending Vehs	311	347	336	380	339	320	337
Travel Distance (mi)	1880	1910	2035	1991	1891	1946	1898
Travel Time (hr)	89.0	87.2	93.0	91.4	90.2	87.9	86.3
Total Delay (hr)	23.1	20.5	22.5	21.6	23.5	19.6	19.8
Total Stops	2167	2151	2218	2258	2232	2055	2133
Fuel Used (gal)	64.2	64.5	67.8	66.8	64.5	65.2	63.2

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1468	1438	1417	0
Vehs Exited	1449	1437	1422	0
Starting Vehs	333	366	360	0
Ending Vehs	352	367	355	0
Travel Distance (mi)	1972	1860	1864	0
Travel Time (hr)	91.2	85.6	90.3	0.0
Total Delay (hr)	22.1	20.5	24.6	0.0
Total Stops	2148	2118	2128	0
Fuel Used (gal)	65.3	62.8	63.4	0.0

SimTraffic Simulation Summary
PM Peak Hour

08/05/2021

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1441	1490	1557	1523	1541	1458	1550
Vehs Exited	1392	1474	1492	1510	1536	1409	1518
Starting Vehs	311	347	336	380	339	320	337
Ending Vehs	360	363	401	393	344	369	369
Travel Distance (mi)	1952	1874	1965	1950	2020	1864	2009
Travel Time (hr)	88.9	88.0	91.7	91.0	94.8	84.2	92.4
Total Delay (hr)	20.4	22.6	22.7	23.1	23.9	18.6	21.9
Total Stops	2146	2233	2395	2273	2226	2044	2357
Fuel Used (gal)	64.8	63.2	66.0	66.2	68.0	62.4	68.1

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1474	1478	1454	0
Vehs Exited	1426	1502	1477	0
Starting Vehs	352	367	355	0
Ending Vehs	400	343	332	0
Travel Distance (mi)	2025	1944	1973	0
Travel Time (hr)	91.7	90.6	88.8	0.0
Total Delay (hr)	20.9	22.3	19.7	0.0
Total Stops	2134	2162	2144	0
Fuel Used (gal)	67.4	65.4	65.6	0.0

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.3
Denied Del/Veh (s)	0.6	2.4	0.0	0.0	0.2	0.3	0.1	0.5
Total Delay (hr)	5.1	0.3	1.9	1.0	1.1	0.1	0.0	9.5
Total Del/Veh (s)	16.8	4.9	30.7	5.1	35.9	42.0	6.6	14.4
Stop Delay (hr)	3.4	0.3	1.6	0.5	1.0	0.1	0.0	6.9
Stop Del/Veh (s)	11.3	4.5	26.3	2.4	32.6	37.6	4.9	10.4

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.9	1.0	3.4	0.4
Total Delay (hr)	5.4	1.5	4.0	0.5	2.0	0.4	1.1	14.8
Total Del/Veh (s)	38.8	6.5	16.9	6.3	30.4	34.1	14.3	17.9
Stop Delay (hr)	4.8	0.9	3.2	0.4	1.8	0.3	0.9	12.2
Stop Del/Veh (s)	34.3	3.8	13.6	5.4	26.3	28.6	12.5	14.8

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2
Denied Del/Veh (s)	0.0	0.0	0.0	1.5	0.6	0.9	0.1	0.1	0.3	0.4	0.3
Total Delay (hr)	4.8	1.6	0.0	0.1	3.0	0.7	0.1	0.0	1.4	5.5	17.1
Total Del/Veh (s)	40.0	8.9	2.1	58.2	21.2	15.9	53.1	8.4	34.2	32.2	24.6
Stop Delay (hr)	4.4	1.2	0.0	0.1	2.5	0.6	0.1	0.0	1.3	4.9	15.0
Stop Del/Veh (s)	36.4	6.8	1.2	54.9	17.5	13.8	51.7	8.9	30.9	28.8	21.5

4: Churn Creek Road & Victor Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Total Delay (hr)	0.3	0.7	0.1	0.0	0.4	0.4	1.9
Total Del/Veh (s)	8.5	3.7	0.8	0.4	24.6	11.8	5.0
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.4	0.4	0.9
Stop Del/Veh (s)	3.0	0.0	0.3	0.3	22.1	10.8	2.4

5: Churn Creek Road & Rancho Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.0	0.0	0.1	0.0	0.6	1.1
Total Del/Veh (s)	3.0	0.6	1.1	0.4	14.1	0.9	7.4	3.6
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	0.4	0.6
Stop Del/Veh (s)	1.0	0.1	0.0	0.0	11.2	0.0	5.5	2.1

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.1	0.3	3.4	0.1	0.3	0.0	0.0	0.8
Total Delay (hr)	1.4	0.0	0.4	2.1	0.2	0.4	1.0	5.5
Total Del/Veh (s)	19.3	18.9	6.0	14.2	6.5	32.7	10.2	12.8
Stop Delay (hr)	1.1	0.0	0.3	1.4	0.1	0.4	0.6	3.9
Stop Del/Veh (s)	15.5	14.3	3.8	9.7	4.0	28.7	6.0	9.0

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.2	4.0	0.1	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	0.3	0.1	0.0	0.1	0.1	0.5	0.0	0.0	0.1	0.0	1.3
Total Del/Veh (s)	22.6	5.7	18.1	9.3	6.7	3.4	2.5	5.0	1.1	0.8	3.5
Stop Delay (hr)	0.3	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.6
Stop Del/Veh (s)	20.5	5.0	15.8	8.9	3.1	0.4	0.0	2.9	0.3	0.3	1.6

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.8	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.5	0.0	0.0	0.4	1.0
Total Del/Veh (s)	8.2	3.8	4.5	2.8	5.7	3.8	4.1
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	7.0	4.0	0.1	0.1	0.8	0.2	0.3

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.6	0.1	0.3	0.0	0.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	0.1	0.0	0.0

15: Aviation Drive & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.5	0.2	1.9	0.8	1.4
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.1	0.0	0.1	0.1

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.8	0.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1	0.0	1.1	0.0	0.0	1.6	0.0
Total Del/Veh (s)	21.2	4.2	5.1	18.1	0.2	3.8	21.5	11.4	3.9	31.6	12.9	6.1
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.6	0.0
Stop Del/Veh (s)	19.6	2.8	5.4	16.8	0.0	3.8	14.3	4.7	1.6	20.7	5.3	1.1

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	2.8
Total Del/Veh (s)	11.7
Stop Delay (hr)	1.3
Stop Del/Veh (s)	5.2

Total Zone Performance

Denied Delay (hr)	1.3
Denied Del/Veh (s)	1.1
Total Delay (hr)	55.1
Total Del/Veh (s)	338.2
Stop Delay (hr)	41.4
Stop Del/Veh (s)	254.5

HCM 6th TWSC
6: Rancho Road & Alta Mesa Drive

2021 Existing
PM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	365	271	19	10	50
Future Vol, veh/h	62	365	271	19	10	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	397	295	21	11	54
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	316	0	-	0	837	306
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1244	-	-	-	337	734
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1244	-	-	-	314	734
Mov Cap-2 Maneuver	-	-	-	-	314	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	590	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		11.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1244	-	-	-	600	
HCM Lane V/C Ratio	0.054	-	-	-	0.109	
HCM Control Delay (s)	8.1	0	-	-	11.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2021 Existing
PM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	228	11	12	296	50	12	5	6	42	5	80
Future Vol, veh/h	69	228	11	12	296	50	12	5	6	42	5	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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	248	12	13	322	54	13	5	7	46	5	87
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	376	0	0	260	0	0	825	806	254	758	758	322
Stage 1	-	-	-	-	-	-	404	404	-	348	348	-
Stage 2	-	-	-	-	-	-	421	402	-	410	410	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1182	-	-	1304	-	-	292	316	785	324	336	719
Stage 1	-	-	-	-	-	-	623	599	-	668	634	-
Stage 2	-	-	-	-	-	-	610	600	-	619	595	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1182	-	-	1304	-	-	239	293	785	299	312	719
Mov Cap-2 Maneuver	-	-	-	-	-	-	239	293	-	299	312	-
Stage 1	-	-	-	-	-	-	584	561	-	626	628	-
Stage 2	-	-	-	-	-	-	526	594	-	569	558	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.8			0.3			17.3			13.9		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1SBLn2			
Capacity (veh/h)	239 445		1182	-	-	1304	-	-	299 668			
HCM Lane V/C Ratio	0.055 0.027		0.063	-	-	0.01	-	-	0.153 0.138			
HCM Control Delay (s)	20.9 13.3		8.3	-	-	7.8	-	-	19.2 11.3			
HCM Lane LOS	C B		A	-	-	A	-	-	C B			
HCM 95th %tile Q(veh)	0.2 0.1		0.2	-	-	0	-	-	0.5 0.5			

HCM 6th Signalized Intersection Summary 8: Airport Road & Rancho Road

2021 Existing
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	6	90	6	13	19	118	306	4	3	347	234
Future Volume (veh/h)	164	6	90	6	13	19	118	306	4	3	347	234
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	178	7	98	7	14	21	128	333	4	3	377	254
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	12	168	10	53	80	171	719	609	4	544	461
Arrive On Green	0.13	0.11	0.11	0.01	0.08	0.08	0.10	0.38	0.38	0.00	0.29	0.29
Sat Flow, veh/h	1781	107	1495	1781	675	1013	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	178	0	105	7	0	35	128	333	4	3	377	254
Grp Sat Flow(s),veh/h/ln	1781	0	1601	1781	0	1688	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.7	0.0	3.0	0.2	0.0	0.9	3.4	6.4	0.1	0.1	8.6	6.5
Cycle Q Clear(g_c), s	4.7	0.0	3.0	0.2	0.0	0.9	3.4	6.4	0.1	0.1	8.6	6.5
Prop In Lane	1.00		0.93	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	0	180	10	0	134	171	719	609	4	544	461
V/C Ratio(X)	0.76	0.00	0.58	0.71	0.00	0.26	0.75	0.46	0.01	0.69	0.69	0.55
Avail Cap(c_a), veh/h	738	0	829	572	0	874	738	1550	1313	738	1550	1313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	20.3	24.0	0.0	20.9	21.3	11.1	9.2	24.1	15.2	14.5
Incr Delay (d2), s/veh	4.9	0.0	3.0	63.6	0.0	1.0	6.5	0.5	0.0	109.9	1.6	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	2.0	0.0	1.2	0.2	0.0	0.4	1.6	2.3	0.0	0.2	3.4	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	0.0	23.3	87.5	0.0	21.9	27.7	11.6	9.2	134.0	16.8	15.5
LnGrp LOS	C	A	C	F	A	C	C	B	A	F	B	B
Approach Vol, veh/h	283			42			465			634		
Approach Delay, s/veh	24.4			32.9			16.0			16.8		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	25.0	8.3	11.4	8.1	20.4	9.9	9.8				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	20.0	40.0	15.5	25.0	20.0	40.0	20.0	25.0				
Max Q Clear Time (g_c+l1), s	2.1	8.4	2.2	5.0	5.4	10.6	6.7	2.9				
Green Ext Time (p_c), s	0.0	2.2	0.0	0.5	0.3	3.4	0.4	0.1				

Intersection Summary

HCM 6th Ctrl Delay 18.5

HCM 6th LOS B

Notes

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

HCM 6th TWSC
9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

2021 Existing
PM Peak Hour

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	0	0	0	59	0	40	265	532	0	0	332	239
Future Vol, veh/h	0	0	0	59	0	40	265	532	0	0	332	239
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	64	0	43	288	578	0	0	361	260
Major/Minor				Major2		Major1		Minor2				
Conflicting Flow All				578	0	0	43	0	-	-	1304	22
Stage 1				-	-	-	-	-	-	-	150	-
Stage 2				-	-	-	-	-	-	-	1154	-
Critical Hdwy				4.12	-	-	4.12	-	-	-	6.52	6.22
Critical Hdwy Stg 1				-	-	-	-	-	-	-	5.52	-
Critical Hdwy Stg 2				-	-	-	-	-	-	-	5.52	-
Follow-up Hdwy				2.218	-	-	2.218	-	-	-	4.018	3.318
Pot Cap-1 Maneuver				996	-	-	1566	-	0	0 ~ 160	1055	
Stage 1				-	-	-	-	-	0	0	773	-
Stage 2				-	-	-	-	-	0	0 ~ 272	-	-
Platoon blocked, %					-	-		-				
Mov Cap-1 Maneuver				996	-	-	1566	-	-	-	0	1055
Mov Cap-2 Maneuver				-	-	-	-	-	-	-	0	-
Stage 1				-	-	-	-	-	-	-	0	-
Stage 2				-	-	-	-	-	-	-	0	-
Approach				WB		NB		SB				
HCM Control Delay, s				5.3		2.6		13.2				
HCM LOS								B				
Minor Lane/Major Mvmt	NBL	NBT	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	1566	-	996	-	-	1055						
HCM Lane V/C Ratio	0.184	-	0.064	-	-	0.588						
HCM Control Delay (s)	7.8	-	8.9	-	-	13.2						
HCM Lane LOS	A	-	A	-	-	B						
HCM 95th %tile Q(veh)	0.7	-	0.2	-	-	4						
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 6th Signalized Intersection Summary

12: Airport Road & Preserve Boulevard

2021 Existing
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	8	15	542	533	32
Future Volume (veh/h)	12	8	15	542	533	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	9	16	589	579	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	39	35	29	1120	808	685
Arrive On Green	0.02	0.02	0.02	0.60	0.43	0.43
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	13	9	16	589	579	35
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	0.2	0.2	0.3	6.1	8.5	0.4
Cycle Q Clear(g_c), s	0.2	0.2	0.3	6.1	8.5	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	39	35	29	1120	808	685
V/C Ratio(X)	0.33	0.26	0.54	0.53	0.72	0.05
Avail Cap(c_a), veh/h	536	477	536	2531	1687	1430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	16.0	16.2	3.9	7.8	5.5
Incr Delay (d2), s/veh	4.8	3.8	14.7	0.4	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.8	2.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	19.8	30.9	4.3	9.0	5.5
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h	22			605	614	
Approach Delay, s/veh	20.4			5.0	8.8	
Approach LOS	C			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	27.3			5.9	5.5	21.8
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	45.0			* 10	10.0	30.0
Max Q Clear Time (g_c+l1), s	8.1			2.2	2.3	10.5
Green Ext Time (p_c), s	4.5			0.0	0.0	3.9

Intersection Summary

HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

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

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

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2021 Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	17	102	11	22	6	44	200	6	43	406	18
Future Volume (veh/h)	26	17	102	11	22	6	44	200	6	43	406	18
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	28	18	111	12	24	7	48	217	7	47	441	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	224	190	374	224	190	78	674	571	77	672	570
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.04	0.36	0.36	0.04	0.36	0.36
Sat Flow, veh/h	1378	1870	1585	1261	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	28	18	111	12	24	7	48	217	7	47	441	20
Grp Sat Flow(s),veh/h/ln	1378	1870	1585	1261	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.6	0.3	2.0	0.3	0.4	0.1	0.8	2.6	0.1	0.8	6.1	0.3
Cycle Q Clear(g_c), s	0.9	0.3	2.0	0.5	0.4	0.1	0.8	2.6	0.1	0.8	6.1	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	383	224	190	374	224	190	78	674	571	77	672	570
V/C Ratio(X)	0.07	0.08	0.58	0.03	0.11	0.04	0.62	0.32	0.01	0.61	0.66	0.04
Avail Cap(c_a), veh/h	1336	1517	1286	1246	1517	1286	1156	2124	1800	1156	2124	1800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	12.1	12.8	12.3	12.1	12.0	14.5	7.1	6.3	14.5	8.3	6.4
Incr Delay (d2), s/veh	0.1	0.2	2.8	0.0	0.2	0.1	7.7	0.3	0.0	7.7	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.7	0.1	0.1	0.0	0.4	0.7	0.0	0.4	1.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	12.2	15.7	12.3	12.3	12.1	22.2	7.4	6.3	22.2	9.4	6.4
LnGrp LOS	B	B	B	B	B	B	C	A	A	C	A	A
Approach Vol, veh/h	157			43			272			508		
Approach Delay, s/veh	14.7			12.3			10.0			10.4		
Approach LOS	B			B			A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	17.1		8.9	4.8	17.1		8.9				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	20.0	35.0		25.0	20.0	35.0		* 25				
Max Q Clear Time (g_c+I), s	12.8	4.6		4.0	2.8	8.1		2.5				
Green Ext Time (p_c), s	0.1	1.3		0.5	0.1	3.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay 11.1

HCM 6th LOS B

Notes

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

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

Appendix F

*Intersection Analysis Worksheets for
Opening Year (2022) Conditions*

SimTraffic Simulation Summary
AM Peak Hour

08/05/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	6703	6838	6805	6665	6657	6650	6743
Vehs Exited	6710	6859	6727	6676	6647	6567	6692
Starting Vehs	365	403	342	402	382	321	363
Ending Vehs	358	382	420	391	392	404	414
Travel Distance (mi)	8308	8578	8689	8339	8697	8111	8567
Travel Time (hr)	392.9	406.8	404.2	385.6	399.3	373.9	400.3
Total Delay (hr)	99.7	104.2	98.1	92.3	92.7	87.8	97.9
Total Stops	10343	10740	10464	10102	10428	9714	10562
Fuel Used (gal)	285.6	292.2	295.3	284.1	295.4	274.7	292.8

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	6737	6772	6721	6728
Vehs Exited	6756	6781	6689	6713
Starting Vehs	388	370	375	369
Ending Vehs	369	361	407	379
Travel Distance (mi)	8594	8522	8392	8480
Travel Time (hr)	397.3	400.4	389.9	395.1
Total Delay (hr)	94.3	99.9	93.4	96.0
Total Stops	10363	10664	10121	10349
Fuel Used (gal)	292.7	293.3	287.8	289.4

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
AM Peak Hour

08/05/2021

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1619	1735	1657	1737	1662	1663	1712
Vehs Exited	1592	1720	1631	1716	1638	1597	1641
Starting Vehs	365	403	342	402	382	321	363
Ending Vehs	392	418	368	423	406	387	434
Travel Distance (mi)	1966	2204	2122	2231	2107	2046	2166
Travel Time (hr)	96.3	104.6	96.8	101.9	96.4	95.5	100.9
Total Delay (hr)	26.5	27.3	22.0	23.5	22.2	23.6	24.6
Total Stops	2520	2713	2488	2603	2513	2408	2657
Fuel Used (gal)	68.4	75.4	72.0	75.6	71.3	69.7	73.2

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1711	1707	1694	1685
Vehs Exited	1686	1654	1688	1655
Starting Vehs	388	370	375	369
Ending Vehs	413	423	381	392
Travel Distance (mi)	2210	2092	2113	2126
Travel Time (hr)	101.9	98.1	101.1	99.3
Total Delay (hr)	24.1	24.0	26.4	24.4
Total Stops	2653	2601	2643	2577
Fuel Used (gal)	74.6	71.9	73.1	72.5

SimTraffic Simulation Summary
AM Peak Hour

08/05/2021

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1732	1694	1721	1574	1623	1721	1653
Vehs Exited	1740	1732	1667	1646	1646	1764	1687
Starting Vehs	392	418	368	423	406	387	434
Ending Vehs	384	380	422	351	383	344	400
Travel Distance (mi)	2159	2087	2152	2022	2184	2082	2038
Travel Time (hr)	103.6	102.0	98.8	94.7	101.6	95.6	97.0
Total Delay (hr)	27.3	28.2	22.9	23.0	24.7	22.2	24.9
Total Stops	2649	2642	2600	2428	2628	2511	2598
Fuel Used (gal)	73.8	71.9	72.8	69.2	74.8	70.9	70.1

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1662	1701	1671	1673
Vehs Exited	1713	1702	1677	1696
Starting Vehs	413	423	381	392
Ending Vehs	362	422	375	379
Travel Distance (mi)	2116	2104	2102	2105
Travel Time (hr)	97.0	100.7	97.2	98.8
Total Delay (hr)	22.6	26.7	23.0	24.6
Total Stops	2539	2749	2475	2580
Fuel Used (gal)	72.5	73.2	72.1	72.1

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1683	1717	1686	1670	1685	1592	1703
Vehs Exited	1692	1684	1710	1613	1673	1582	1709
Starting Vehs	384	380	422	351	383	344	400
Ending Vehs	375	413	398	408	395	354	394
Travel Distance (mi)	2059	2115	2237	2013	2170	1973	2227
Travel Time (hr)	96.5	98.8	103.3	91.7	99.9	88.7	100.8
Total Delay (hr)	23.7	24.1	24.6	21.3	23.2	19.3	22.4
Total Stops	2632	2650	2635	2435	2683	2247	2530
Fuel Used (gal)	71.6	71.9	75.5	68.2	73.7	65.9	75.4

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1728	1723	1610	1678
Vehs Exited	1692	1742	1650	1673
Starting Vehs	362	422	375	379
Ending Vehs	398	403	335	374
Travel Distance (mi)	2156	2252	2011	2121
Travel Time (hr)	100.0	105.3	91.1	97.6
Total Delay (hr)	23.8	25.9	19.9	22.8
Total Stops	2704	2795	2361	2564
Fuel Used (gal)	73.6	76.9	68.4	72.1

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1669	1692	1741	1684	1687	1674	1675
Vehs Exited	1686	1723	1719	1701	1690	1624	1655
Starting Vehs	375	413	398	408	395	354	394
Ending Vehs	358	382	420	391	392	404	414
Travel Distance (mi)	2124	2172	2177	2073	2235	2011	2136
Travel Time (hr)	96.5	101.4	105.3	97.2	101.3	94.0	101.6
Total Delay (hr)	22.2	24.6	28.7	24.4	22.6	22.7	26.1
Total Stops	2542	2735	2741	2636	2604	2548	2777
Fuel Used (gal)	71.8	73.0	75.0	71.2	75.5	68.2	74.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1636	1641	1746	1681
Vehs Exited	1665	1683	1674	1682
Starting Vehs	398	403	335	374
Ending Vehs	369	361	407	379
Travel Distance (mi)	2112	2074	2166	2128
Travel Time (hr)	98.4	96.3	100.5	99.2
Total Delay (hr)	23.8	23.4	24.0	24.3
Total Stops	2467	2519	2642	2621
Fuel Used (gal)	72.1	71.2	74.2	72.6

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	1.3	0.6	0.0	0.0	0.0	0.0	0.0	1.9
Denied Del/Veh (s)	4.5	5.7	0.0	0.0	0.4	0.4	3.6	2.6
Total Delay (hr)	12.9	0.8	3.4	1.2	2.8	0.3	0.2	21.5
Total Del/Veh (s)	45.1	7.3	40.4	6.4	32.1	31.4	29.7	27.9
Stop Delay (hr)	10.2	0.7	3.1	0.6	2.3	0.3	0.1	17.3
Stop Del/Veh (s)	35.6	6.1	36.8	3.4	27.2	25.1	26.9	22.4

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.6	3.1	0.3
Total Delay (hr)	5.1	1.0	3.3	1.6	3.6	0.4	0.8	15.7
Total Del/Veh (s)	32.0	4.9	18.6	13.2	31.8	32.2	11.4	18.4
Stop Delay (hr)	4.3	0.5	2.7	1.4	3.1	0.3	0.7	13.1
Stop Del/Veh (s)	27.0	2.2	15.4	12.0	28.1	27.1	9.7	15.3

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.4	0.5
Denied Del/Veh (s)	0.0	0.0	0.0	0.8	0.3	0.3	0.1	0.1	3.6	3.5	0.8
Total Delay (hr)	4.7	0.4	0.0	0.0	4.8	0.7	0.7	0.0	0.8	1.5	13.6
Total Del/Veh (s)	35.2	3.7	1.3	50.6	26.4	8.8	142.3	4.7	37.7	13.4	21.1
Stop Delay (hr)	4.3	0.3	0.0	0.0	4.3	0.6	0.7	0.0	0.7	1.4	12.4
Stop Del/Veh (s)	32.5	2.3	0.8	47.9	23.5	7.8	140.9	5.1	36.0	13.2	19.2

4: Churn Creek Road & Victor Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Delay (hr)	0.1	0.3	0.1	0.0	0.5	0.9	1.9
Total Del/Veh (s)	9.6	2.7	0.8	0.4	30.9	14.2	5.3
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.4	0.8	1.4
Stop Del/Veh (s)	5.2	0.0	0.4	0.4	28.4	13.0	3.7

5: Churn Creek Road & Rancho Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.0	0.0	0.2	0.0	1.3	1.8
Total Del/Veh (s)	2.9	0.5	1.1	0.3	15.5	1.2	10.3	6.0
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	1.0	1.2
Stop Del/Veh (s)	0.9	0.1	0.0	0.0	12.1	0.1	8.2	4.2

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.3	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.9	3.4	0.0	0.0	0.0	0.0	0.9
Total Delay (hr)	1.1	0.6	1.3	0.2	0.3	1.2	4.7
Total Del/Veh (s)	16.2	7.1	9.6	3.3	26.7	9.5	9.9
Stop Delay (hr)	0.9	0.4	0.9	0.1	0.3	0.6	3.3
Stop Del/Veh (s)	13.3	5.0	6.8	2.3	21.9	5.0	6.9

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.3	4.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.5	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.0	1.3
Total Del/Veh (s)	28.7	31.5	4.0	24.4	5.6	6.9	1.6	1.3	5.4	1.4	0.9	2.6
Stop Delay (hr)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Stop Del/Veh (s)	26.6	27.2	2.9	20.8	5.6	4.0	0.0	0.0	3.1	0.2	0.3	1.2

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.7	0.0	0.0	0.4	1.2
Total Del/Veh (s)	10.4	3.1	5.7	7.2	7.2	3.8	4.8
Stop Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.1	0.2
Stop Del/Veh (s)	9.1	3.1	0.5	0.4	2.6	0.8	0.7

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.3	0.4	0.1	0.0	0.4
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	0.0	0.0	0.0

15: Aviation Drive & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.1	1.1	3.7	1.2
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.4	0.4	2.2	0.5

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBR	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.6	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.1	0.0	0.0	1.7	0.0	0.3	0.6	0.0	2.7
Total Del/Veh (s)	19.5	3.4	4.8	12.9	8.0	18.4	6.0	2.7	10.7
Stop Delay (hr)	0.1	0.0	0.0	0.7	0.0	0.3	0.3	0.0	1.3
Stop Del/Veh (s)	17.9	3.7	5.2	5.0	1.4	13.9	2.8	1.4	5.0

Total Zone Performance

Denied Delay (hr)	3.2
Denied Del/Veh (s)	2.7
Total Delay (hr)	64.5
Total Del/Veh (s)	269.5
Stop Delay (hr)	50.7
Stop Del/Veh (s)	211.9

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	326	388	8	65	94
Future Vol, veh/h	30	326	388	8	65	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	354	422	9	71	102
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	431	0	-	0	847	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	420	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1129	-	-	-	332	628
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	663	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1129	-	-	-	320	628
Mov Cap-2 Maneuver	-	-	-	-	320	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	663	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		17.9		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1129	-	-	-	451	
HCM Lane V/C Ratio	0.029	-	-	-	0.383	
HCM Control Delay (s)	8.3	0	-	-	17.9	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.8	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2022 Opening Year
AM Peak Hour

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	410	28	12	118	35	105	17	34	43	9	139
Future Vol, veh/h	27	410	28	12	118	35	105	17	34	43	9	139
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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	446	30	13	128	38	114	18	37	47	10	151
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	166	0	0	476	0	0	773	711	461	701	688	128
Stage 1	-	-	-	-	-	-	519	519	-	154	154	-
Stage 2	-	-	-	-	-	-	254	192	-	547	534	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1412	-	-	1086	-	-	316	358	600	353	369	922
Stage 1	-	-	-	-	-	-	540	533	-	848	770	-
Stage 2	-	-	-	-	-	-	750	742	-	521	524	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1412	-	-	1086	-	-	252	346	600	310	357	922
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	346	-	310	357	-
Stage 1	-	-	-	-	-	-	529	522	-	830	761	-
Stage 2	-	-	-	-	-	-	612	733	-	462	513	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.6			25			12.2		
HCM LOS							D			B		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	252	482	1412	-	-	1086	-	-	310	841		
HCM Lane V/C Ratio	0.453	0.115	0.021	-	-	0.012	-	-	0.151	0.191		
HCM Control Delay (s)	30.6	13.4	7.6	-	-	8.4	-	-	18.7	10.3		
HCM Lane LOS	D	B	A	-	-	A	-	-	C	B		
HCM 95th %tile Q(veh)	2.2	0.4	0.1	-	-	0	-	-	0.5	0.7		

HCM 6th Signalized Intersection Summary

8: Airport Road & Rancho Road

2022 Opening Year
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	5	143	0	12	25	55	386	0	3	275	65
Future Volume (veh/h)	463	5	143	0	12	25	55	386	0	3	275	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	503	5	155	0	13	27	60	420	0	3	299	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	593	868	735	4	109	162	119	722	322	8	608	271
Arrive On Green	0.33	0.46	0.46	0.00	0.06	0.06	0.03	0.20	0.00	0.00	0.17	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	503	5	155	0	13	27	60	420	0	3	299	71
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	12.6	0.1	2.8	0.0	0.3	0.4	0.8	5.1	0.0	0.0	3.7	1.9
Cycle Q Clear(g_c), s	12.6	0.1	2.8	0.0	0.3	0.4	0.8	5.1	0.0	0.0	3.7	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	593	868	735	4	109	162	119	722	322	8	608	271
V/C Ratio(X)	0.85	0.01	0.21	0.00	0.12	0.17	0.50	0.58	0.00	0.35	0.49	0.26
Avail Cap(c_a), veh/h	1019	2100	1780	111	1322	1972	273	1929	860	216	1870	834
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	6.9	7.7	0.0	21.5	21.5	22.8	17.3	0.0	23.9	18.0	17.3
Incr Delay (d2), s/veh	3.5	0.0	0.1	0.0	0.5	0.5	3.3	0.7	0.0	23.3	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.8	0.0	0.1	0.1	0.4	1.9	0.0	0.0	1.4	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	6.9	7.8	0.0	22.0	22.0	26.1	18.1	0.0	47.3	18.7	17.8
LnGrp LOS	B	A	A	A	C	C	C	B	A	D	B	B
Approach Vol, veh/h	663			40			480			373		
Approach Delay, s/veh	15.8			22.0			19.1			18.7		
Approach LOS	B			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	16.2	0.0	28.3	5.2	14.6	19.5	8.8				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	26.1	3.0	54.0	3.8	25.3	27.5	34.0				
Max Q Clear Time (g_c+I1), s	2.0	7.1	0.0	4.8	2.8	5.7	14.6	2.4				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.6	0.0	2.0	1.4	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	17.7											
HCM 6th LOS	B											
Notes												

HCM 6th Signalized Intersection Summary 9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

2022 Opening Year
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↰		↰	↰			↰	↰
Traffic Volume (veh/h)	0	0	0	106	0	68	232	516	0	0	374	284
Future Volume (veh/h)	0	0	0	106	0	68	232	516	0	0	374	284
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				115	0	74	252	561	0	0	407	309
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				202	0	179	335	2315	0	0	667	502
Arrive On Green				0.11	0.00	0.11	0.19	0.65	0.00	0.00	0.35	0.35
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	2025	1454
Grp Volume(v), veh/h				115	0	74	252	561	0	0	374	342
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1609
Q Serve(g_s), s				2.3	0.0	1.7	5.1	2.5	0.0	0.0	6.7	6.8
Cycle Q Clear(g_c), s				2.3	0.0	1.7	5.1	2.5	0.0	0.0	6.7	6.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.90
Lane Grp Cap(c), veh/h				202	0	179	335	2315	0	0	614	556
V/C Ratio(X)				0.57	0.00	0.41	0.75	0.24	0.00	0.00	0.61	0.62
Avail Cap(c_a), veh/h				862	0	767	1002	4880	0	0	1231	1115
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.1	0.0	15.8	14.7	2.8	0.0	0.0	10.4	10.4
Incr Delay (d2), s/veh				2.5	0.0	1.5	3.4	0.1	0.0	0.0	1.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.9	0.0	0.6	2.0	0.3	0.0	0.0	2.1	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				18.6	0.0	17.3	18.1	2.8	0.0	0.0	11.4	11.5
LnGrp LOS				B	A	B	B	A	A	A	B	B
Approach Vol, veh/h				189			813				716	
Approach Delay, s/veh				18.1			7.5				11.4	
Approach LOS				B			A				B	
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	29.4			11.7	17.7		8.8					
Change Period (Y+Rc), s	4.5			4.5	4.5		4.5					
Max Green Setting (Gmax), s	52.5			21.5	26.5		18.5					
Max Q Clear Time (g_c+I1), s	4.5			7.1	8.8		4.3					
Green Ext Time (p_c), s	4.4			0.6	4.5		0.6					
Intersection Summary												
HCM 6th Ctrl Delay				10.3								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary

12: Airport Road & Preserve Boulevard

2022 Opening Year
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	7	3	883	437	15
Future Volume (veh/h)	33	7	3	883	437	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	8	3	960	475	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	73	65	6	1903	1294	577
Arrive On Green	0.04	0.04	0.00	0.54	0.36	0.36
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	36	8	3	960	475	16
Grp Sat Flow(s), veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	0.6	0.1	0.1	5.1	2.9	0.2
Cycle Q Clear(g_c), s	0.6	0.1	0.1	5.1	2.9	0.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	73	65	6	1903	1294	577
V/C Ratio(X)	0.49	0.12	0.50	0.50	0.37	0.03
Avail Cap(c_a), veh/h	706	629	479	6641	5088	2269
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.0	13.8	14.8	4.4	6.9	6.1
Incr Delay (d2), s/veh	5.1	0.8	52.8	0.2	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.1	0.1	0.7	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.0	14.6	67.6	4.6	7.1	6.1
LnGrp LOS	B	B	E	A	A	A
Approach Vol, veh/h	44			963	491	
Approach Delay, s/veh	18.2			4.8	7.1	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	23.3			6.4	5.1	18.2
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	55.6			* 12	8.0	42.6
Max Q Clear Time (g_c+l1), s	7.1			2.6	2.1	4.9
Green Ext Time (p_c), s	8.8			0.0	0.0	3.6
Intersection Summary						
HCM 6th Ctrl Delay			5.9			
HCM 6th LOS			A			

Notes

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

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

HCM 6th Signalized Intersection Summary 17: Airport Road & Knighton Road

2022 Opening Year
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	5	21	0	1	2	189	453	7	5	221	29
Future Volume (veh/h)	23	5	21	0	1	2	189	453	7	5	221	29
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	25	5	23	0	1	2	205	492	8	5	240	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	97	82	296	97	82	426	1204	537	10	786	350
Arrive On Green	0.05	0.05	0.05	0.00	0.05	0.05	0.12	0.34	0.34	0.01	0.22	0.22
Sat Flow, veh/h	1414	1870	1585	1382	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	25	5	23	0	1	2	205	492	8	5	240	32
Grp Sat Flow(s),veh/h/ln	1414	1870	1585	1382	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.4	0.1	0.3	0.0	0.0	0.0	1.3	2.6	0.1	0.1	1.4	0.4
Cycle Q Clear(g_c), s	0.4	0.1	0.3	0.0	0.0	0.0	1.3	2.6	0.1	0.1	1.4	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	97	82	296	97	82	426	1204	537	10	786	350
V/C Ratio(X)	0.07	0.05	0.28	0.00	0.01	0.02	0.48	0.41	0.01	0.51	0.31	0.09
Avail Cap(c_a), veh/h	1921	2151	1823	1825	2167	1836	1065	5591	2494	293	5080	2266
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	11.0	11.1	0.0	10.9	11.0	9.9	6.2	5.3	12.1	7.9	7.5
Incr Delay (d2), s/veh	0.1	0.2	1.8	0.0	0.0	0.1	0.8	0.2	0.0	36.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	0.0	0.4	0.5	0.0	0.1	0.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	11.2	12.9	0.0	11.0	11.1	10.8	6.4	5.4	48.3	8.1	7.6
LnGrp LOS	B	B	B	A	B	B	B	A	A	D	A	A
Approach Vol, veh/h	53			3			705			277		
Approach Delay, s/veh	12.0			11.0			7.7			8.8		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	14.2		6.5	6.5	11.4		6.5				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	38.3			28.0	7.5	34.8		* 28				
Max Q Clear Time (g_c+I_2), s	4.6			2.4	3.3	3.4		2.0				
Green Ext Time (p_c), s	0.0	3.7		0.1	0.2	1.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Notes

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

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

SimTraffic Simulation Summary
PM Peak Hour

08/06/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	6286	6245	6390	6253	6304	6318	6348
Vehs Exited	6307	6230	6334	6231	6297	6265	6304
Starting Vehs	380	352	330	358	335	331	331
Ending Vehs	359	367	386	380	342	384	375
Travel Distance (mi)	8360	8095	8342	8320	8385	8121	8076
Travel Time (hr)	376.5	363.7	377.4	374.4	384.6	363.8	363.9
Total Delay (hr)	83.3	78.7	84.5	81.7	89.3	77.8	80.5
Total Stops	9578	9114	9517	9266	9312	9164	9154
Fuel Used (gal)	282.4	271.1	281.5	278.6	283.7	271.9	271.5

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	6446	6330	6282	6324
Vehs Exited	6421	6310	6243	6295
Starting Vehs	321	360	346	333
Ending Vehs	346	380	385	366
Travel Distance (mi)	8290	8265	8159	8241
Travel Time (hr)	375.8	370.0	372.6	372.3
Total Delay (hr)	83.2	78.8	86.3	82.4
Total Stops	9498	9228	9307	9307
Fuel Used (gal)	279.2	276.4	275.8	277.2

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
PM Peak Hour

08/06/2021

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1488	1547	1609	1559	1571	1520	1571
Vehs Exited	1535	1544	1567	1569	1511	1526	1534
Starting Vehs	380	352	330	358	335	331	331
Ending Vehs	333	355	372	348	395	325	368
Travel Distance (mi)	2055	2091	2004	2065	2041	1960	2004
Travel Time (hr)	91.0	94.0	89.9	91.0	92.9	87.5	89.8
Total Delay (hr)	18.7	20.3	19.7	18.5	20.6	18.3	19.6
Total Stops	2304	2280	2277	2302	2241	2166	2267
Fuel Used (gal)	69.0	69.6	67.5	68.7	68.4	66.2	67.4

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1663	1618	1615	0
Vehs Exited	1588	1585	1599	0
Starting Vehs	321	360	346	0
Ending Vehs	396	393	362	0
Travel Distance (mi)	1988	2127	2080	0
Travel Time (hr)	90.2	96.5	93.2	0.0
Total Delay (hr)	20.1	21.5	20.3	0.0
Total Stops	2426	2471	2314	0
Fuel Used (gal)	67.2	71.4	70.5	0.0

SimTraffic Simulation Summary
PM Peak Hour

08/06/2021

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1632	1549	1597	1556	1591	1642	1601
Vehs Exited	1561	1547	1602	1544	1615	1586	1607
Starting Vehs	333	355	372	348	395	325	368
Ending Vehs	404	357	367	360	371	381	362
Travel Distance (mi)	2083	1948	2129	2010	2073	2140	2009
Travel Time (hr)	93.7	88.4	97.1	90.2	93.9	96.3	89.5
Total Delay (hr)	20.9	19.8	22.5	19.3	20.9	20.8	18.8
Total Stops	2352	2269	2461	2324	2212	2460	2249
Fuel Used (gal)	69.8	66.1	72.4	66.8	69.6	71.3	67.3

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1653	1627	1534	0
Vehs Exited	1671	1615	1509	0
Starting Vehs	396	393	362	0
Ending Vehs	378	405	387	0
Travel Distance (mi)	2165	2121	1915	0
Travel Time (hr)	98.6	93.7	88.4	0.0
Total Delay (hr)	22.2	19.2	21.3	0.0
Total Stops	2514	2233	2312	0
Fuel Used (gal)	72.9	70.5	65.0	0.0

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1611	1533	1593	1560	1595	1565	1563
Vehs Exited	1653	1542	1565	1568	1572	1598	1535
Starting Vehs	404	357	367	360	371	381	362
Ending Vehs	362	348	395	352	394	348	390
Travel Distance (mi)	2182	1965	2103	2084	2181	1961	2004
Travel Time (hr)	98.5	87.7	95.1	94.9	101.3	88.2	90.1
Total Delay (hr)	21.8	18.7	21.2	21.4	24.6	19.3	19.8
Total Stops	2509	2232	2329	2236	2469	2252	2260
Fuel Used (gal)	74.2	66.1	70.6	69.9	74.7	66.0	67.2

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1581	1540	1562	0
Vehs Exited	1600	1592	1578	0
Starting Vehs	378	405	387	0
Ending Vehs	359	353	371	0
Travel Distance (mi)	2059	2005	2068	0
Travel Time (hr)	93.2	90.0	94.1	0.0
Total Delay (hr)	20.3	19.1	21.4	0.0
Total Stops	2345	2309	2327	0
Fuel Used (gal)	69.2	67.2	69.3	0.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1555	1616	1591	1578	1547	1591	1613
Vehs Exited	1558	1597	1600	1550	1599	1555	1628
Starting Vehs	362	348	395	352	394	348	390
Ending Vehs	359	367	386	380	342	384	375
Travel Distance (mi)	2039	2090	2107	2162	2089	2061	2059
Travel Time (hr)	93.2	93.6	95.3	98.3	96.5	91.8	94.6
Total Delay (hr)	21.9	19.9	21.1	22.5	23.2	19.4	22.3
Total Stops	2413	2333	2450	2404	2390	2286	2378
Fuel Used (gal)	69.4	69.3	71.1	73.1	70.9	68.5	69.6

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1549	1545	1571	0
Vehs Exited	1562	1518	1557	0
Starting Vehs	359	353	371	0
Ending Vehs	346	380	385	0
Travel Distance (mi)	2078	2012	2095	0
Travel Time (hr)	93.7	89.8	96.9	0.0
Total Delay (hr)	20.6	19.0	23.3	0.0
Total Stops	2213	2215	2354	0
Fuel Used (gal)	69.9	67.3	71.1	0.0

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	0.6	2.3	0.0	0.0	0.2	0.2	3.5	0.5
Total Delay (hr)	5.2	0.3	2.6	0.9	1.6	0.1	0.0	10.5
Total Del/Veh (s)	16.5	3.7	39.4	4.4	36.1	32.0	31.5	15.3
Stop Delay (hr)	3.4	0.2	2.3	0.4	1.4	0.1	0.0	7.9
Stop Del/Veh (s)	10.9	3.3	36.0	1.8	32.4	27.1	29.8	11.4

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.7	3.3	0.3
Total Delay (hr)	4.8	1.3	4.8	1.1	2.2	0.4	1.1	15.7
Total Del/Veh (s)	30.0	5.9	20.1	12.5	33.9	33.0	14.4	18.2
Stop Delay (hr)	4.0	0.6	4.0	1.0	2.0	0.3	1.0	13.0
Stop Del/Veh (s)	25.3	2.5	17.0	11.8	30.7	28.4	12.7	15.0

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.7
Denied Del/Veh (s)	0.1	0.1	0.5	1.0	0.1	0.1	0.1	0.1	3.4	3.4	1.0
Total Delay (hr)	3.4	2.3	0.0	0.1	4.2	0.3	2.8	0.0	1.3	2.7	17.1
Total Del/Veh (s)	27.8	12.1	3.1	55.0	27.5	7.8	907.0	13.5	30.7	15.8	23.4
Stop Delay (hr)	3.1	1.8	0.0	0.1	3.7	0.3	2.8	0.0	1.2	2.5	15.4
Stop Del/Veh (s)	24.9	9.2	1.7	52.1	24.4	7.2	905.7	14.1	28.7	14.9	21.1

4: Churn Creek Road & Victor Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Total Delay (hr)	0.3	0.8	0.1	0.0	0.8	0.7	2.7
Total Del/Veh (s)	9.7	4.0	0.8	0.5	40.7	20.1	6.4
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.7	0.7	1.6
Stop Del/Veh (s)	4.2	0.0	0.3	0.4	38.5	19.3	3.8

5: Churn Creek Road & Rancho Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Total Delay (hr)	0.4	0.0	0.0	0.0	0.1	0.0	0.8	1.4
Total Del/Veh (s)	3.5	0.6	1.2	0.5	16.1	0.8	8.2	4.2
Stop Delay (hr)	0.2	0.0	0.0	0.0	0.1	0.0	0.6	0.8
Stop Del/Veh (s)	1.4	0.1	0.0	0.0	12.8	0.0	6.2	2.5

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	2.0	1.0	3.4	0.0	0.1	0.0	0.0	0.9
Total Delay (hr)	1.3	0.0	0.4	1.5	0.1	0.3	0.9	4.6
Total Del/Veh (s)	15.6	17.4	5.7	10.4	3.6	25.7	8.6	10.1
Stop Delay (hr)	1.0	0.0	0.3	1.1	0.1	0.3	0.5	3.3
Stop Del/Veh (s)	12.7	14.0	3.8	7.5	2.5	21.5	4.7	7.2

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.2	4.0	0.2	0.1	0.4	0.1	0.2	0.0	0.0	0.0	0.2
Total Delay (hr)	0.3	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.2	0.0	1.0
Total Del/Veh (s)	18.5	3.6	17.3	4.8	6.2	2.0	0.9	4.9	1.2	0.9	2.6
Stop Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Stop Del/Veh (s)	16.6	2.9	14.1	4.5	3.1	0.0	0.0	2.7	0.3	0.3	1.1

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.5	0.0	0.0	0.5	1.1
Total Del/Veh (s)	6.8	3.0	4.3	3.5	7.5	4.2	4.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.2
Stop Del/Veh (s)	5.5	2.9	0.4	0.2	2.4	0.8	0.7

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.5	0.3	0.3	0.0	0.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.1	0.1	0.0	0.1

15: Aviation Drive & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	0.6	0.2	4.5	2.7	3.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.1	2.4	2.4	1.7

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	4.0	0.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
Total Delay (hr)	0.1	0.0	0.0	0.1	0.0	0.1	0.0	1.0	0.0	0.0	1.1	0.0
Total Del/Veh (s)	16.5	6.6	3.1	21.5	0.7	3.8	20.4	10.3	4.5	20.7	8.5	3.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.6	0.0
Stop Del/Veh (s)	15.0	5.0	3.4	19.9	0.2	3.9	17.7	4.8	1.1	17.0	4.4	1.0

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	2.3
Total Del/Veh (s)	9.1
Stop Delay (hr)	1.2
Stop Del/Veh (s)	4.8

Total Zone Performance

Denied Delay (hr)	1.9
Denied Del/Veh (s)	1.5
Total Delay (hr)	56.5
Total Del/Veh (s)	340.5
Stop Delay (hr)	43.8
Stop Del/Veh (s)	264.3

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	459	328	21	14	51
Future Vol, veh/h	63	459	328	21	14	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	499	357	23	15	55
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	380	0	-	0	1004	369
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	635	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1178	-	-	-	268	677
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1178	-	-	-	247	677
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	528	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		13.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1178	-	-	-	492	
HCM Lane V/C Ratio	0.058	-	-	-	0.144	
HCM Control Delay (s)	8.2	0	-	-	13.5	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2022 Opening Year
PM Peak Hour

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	230	101	43	299	50	65	13	25	42	19	80
Future Vol, veh/h	69	230	101	43	299	50	65	13	25	42	19	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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	250	110	47	325	54	71	14	27	46	21	87
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	379	0	0	360	0	0	955	928	305	895	929	325
Stage 1	-	-	-	-	-	-	455	455	-	419	419	-
Stage 2	-	-	-	-	-	-	500	473	-	476	510	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1179	-	-	1199	-	-	238	268	735	261	268	716
Stage 1	-	-	-	-	-	-	585	569	-	612	590	-
Stage 2	-	-	-	-	-	-	553	558	-	570	538	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1179	-	-	1199	-	-	181	241	735	222	241	716
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	241	-	222	241	-
Stage 1	-	-	-	-	-	-	548	533	-	573	567	-
Stage 2	-	-	-	-	-	-	450	536	-	500	504	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0.9			28.7			17.2		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1SBLn2			
Capacity (veh/h)	181	432	1179	-	-	1199	-	-	222	519		
HCM Lane V/C Ratio	0.39	0.096	0.064	-	-	0.039	-	-	0.206	0.207		
HCM Control Delay (s)	37.1	14.2	8.3	-	-	8.1	-	-	25.4	13.7		
HCM Lane LOS	E	B	A	-	-	A	-	-	D	B		
HCM 95th %tile Q(veh)	1.7	0.3	0.2	-	-	0.1	-	-	0.8	0.8		

HCM 6th Signalized Intersection Summary 8: Airport Road & Rancho Road

2022 Opening Year
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	7	99	6	14	19	133	308	4	3	349	251
Future Volume (veh/h)	174	7	99	6	14	19	133	308	4	3	349	251
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	189	8	108	7	15	21	145	335	4	3	379	273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	217	184	10	167	249	247	1205	537	8	960	428
Arrive On Green	0.13	0.12	0.12	0.01	0.09	0.09	0.07	0.34	0.34	0.00	0.27	0.27
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	189	8	108	7	15	21	145	335	4	3	379	273
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	4.6	0.2	2.9	0.2	0.3	0.3	1.8	3.1	0.1	0.0	3.9	6.8
Cycle Q Clear(g_c), s	4.6	0.2	2.9	0.2	0.3	0.3	1.8	3.1	0.1	0.0	3.9	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	217	184	10	167	249	247	1205	537	8	960	428
V/C Ratio(X)	0.79	0.04	0.59	0.70	0.09	0.08	0.59	0.28	0.01	0.35	0.39	0.64
Avail Cap(c_a), veh/h	260	1387	1175	120	1429	2131	272	2164	965	233	2124	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	17.5	18.7	22.1	18.6	18.6	20.0	10.7	9.7	22.2	13.3	14.3
Incr Delay (d2), s/veh	14.5	0.1	3.0	62.9	0.2	0.1	2.8	0.1	0.0	23.2	0.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.1	1.1	0.2	0.1	0.1	0.7	1.0	0.0	0.0	1.3	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	17.5	21.6	85.0	18.8	18.8	22.8	10.9	9.8	45.4	13.5	15.9
LnGrp LOS	C	B	C	F	B	B	C	B	A	D	B	B
Approach Vol, veh/h		305			43			484			655	
Approach Delay, s/veh		28.7			29.6			14.4			14.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	21.5	8.2	11.2	6.7	18.4	9.4	10.0				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	27.1	3.0	33.0	3.5	26.6	6.5	34.0				
Max Q Clear Time (g_c+I1), s	2.0	5.1	2.2	4.9	3.8	8.8	6.6	2.3				
Green Ext Time (p_c), s	0.0	2.1	0.0	0.4	0.0	3.3	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary

2022 Opening Year

9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↱		↰	↱			↰	↱
Traffic Volume (veh/h)	0	0	0	66	0	41	269	550	0	0	342	247
Future Volume (veh/h)	0	0	0	66	0	41	269	550	0	0	342	247
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				72	0	45	292	598	0	0	372	268
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				170	0	151	388	2338	0	0	629	446
Arrive On Green				0.10	0.00	0.10	0.22	0.66	0.00	0.00	0.32	0.32
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	2078	1409
Grp Volume(v), veh/h				72	0	45	292	598	0	0	333	307
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1617
Q Serve(g_s), s				1.4	0.0	1.0	5.6	2.5	0.0	0.0	5.7	5.9
Cycle Q Clear(g_c), s				1.4	0.0	1.0	5.6	2.5	0.0	0.0	5.7	5.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.87
Lane Grp Cap(c), veh/h				170	0	151	388	2338	0	0	563	512
V/C Ratio(X)				0.42	0.00	0.30	0.75	0.26	0.00	0.00	0.59	0.60
Avail Cap(c_a), veh/h				904	0	804	1197	5116	0	0	1145	1042
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				15.6	0.0	15.4	13.3	2.6	0.0	0.0	10.5	10.5
Incr Delay (d2), s/veh				1.7	0.0	1.1	3.0	0.1	0.0	0.0	1.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.5	0.0	0.3	2.1	0.2	0.0	0.0	1.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				17.2	0.0	16.5	16.3	2.6	0.0	0.0	11.5	11.6
LnGrp LOS				B	A	B	B	A	A	A	B	B
Approach Vol, veh/h					117			890			640	
Approach Delay, s/veh					16.9			7.1			11.5	
Approach LOS					B			A			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		28.5			12.4	16.1		8.0				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		52.5			24.5	23.5		18.5				
Max Q Clear Time (g_c+l1), s		4.5			7.6	7.9		3.4				
Green Ext Time (p_c), s		4.7			0.8	3.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				9.5								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary

12: Airport Road & Preserve Boulevard

2022 Opening Year
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	8	15	555	551	33
Future Volume (veh/h)	12	8	15	555	551	33
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	9	16	603	599	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	35	30	1949	1285	573
Arrive On Green	0.02	0.02	0.02	0.55	0.36	0.36
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	13	9	16	603	599	36
Grp Sat Flow(s), veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	0.2	0.2	0.3	2.7	3.8	0.4
Cycle Q Clear(g_c), s	0.2	0.2	0.3	2.7	3.8	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	40	35	30	1949	1285	573
V/C Ratio(X)	0.33	0.25	0.54	0.31	0.47	0.06
Avail Cap(c_a), veh/h	473	421	485	7214	5641	2516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	14.1	14.3	3.6	7.2	6.1
Incr Delay (d2), s/veh	4.7	3.7	14.3	0.1	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	0.2	0.2	0.3	0.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.8	17.8	28.6	3.7	7.5	6.2
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	22			619	635	
Approach Delay, s/veh	18.4			4.3	7.4	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	23.5			5.9	5.5	18.0
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	59.6			* 7.8	8.0	46.6
Max Q Clear Time (g_c+l1), s	4.7			2.2	2.3	5.8
Green Ext Time (p_c), s	4.8			0.0	0.0	4.8
Intersection Summary						
HCM 6th Ctrl Delay			6.1			
HCM 6th LOS			A			

Notes

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

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

HCM 6th Signalized Intersection Summary 17: Airport Road & Knighton Road

2022 Opening Year
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	17	102	11	22	6	44	217	6	43	418	18
Future Volume (veh/h)	26	17	102	11	22	6	44	217	6	43	418	18
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	28	18	111	12	24	7	48	236	7	47	454	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	230	195	406	230	195	154	1061	473	78	1058	472
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.04	0.30	0.30	0.04	0.30	0.30
Sat Flow, veh/h	1378	1870	1585	1261	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	28	18	111	12	24	7	48	236	7	47	454	20
Grp Sat Flow(s),veh/h/ln	1378	1870	1585	1261	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.5	0.2	1.8	0.2	0.3	0.1	0.4	1.4	0.1	0.7	2.8	0.2
Cycle Q Clear(g_c), s	0.8	0.2	1.8	0.5	0.3	0.1	0.4	1.4	0.1	0.7	2.8	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	230	195	406	230	195	154	1061	473	78	1058	472
V/C Ratio(X)	0.07	0.08	0.57	0.03	0.10	0.04	0.31	0.22	0.01	0.60	0.43	0.04
Avail Cap(c_a), veh/h	1690	1960	1661	1582	1973	1672	566	4396	1961	486	4783	2134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.1	10.7	11.4	10.9	10.7	10.6	12.7	7.2	6.8	12.9	7.8	6.9
Incr Delay (d2), s/veh	0.1	0.1	2.6	0.0	0.2	0.1	1.1	0.1	0.0	7.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.6	0.1	0.1	0.0	0.1	0.3	0.0	0.4	0.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	10.8	14.0	10.9	10.9	10.7	13.9	7.3	6.8	20.1	8.0	6.9
LnGrp LOS	B	B	B	B	B	B	B	A	A	C	A	A
Approach Vol, veh/h	157			43			291			521		
Approach Delay, s/veh	13.1			10.9			8.4			9.1		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	14.2		8.6	4.7	14.2		8.6				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	7.5	34.0		28.8	4.5	37.0		* 29				
Max Q Clear Time (g_c+I_2), s	12.7	3.4		3.8	2.4	4.8		2.5				
Green Ext Time (p_c), s	0.0	1.6		0.5	0.0	3.4		0.1				

Intersection Summary

HCM 6th Ctrl Delay 9.6
HCM 6th LOS A

Notes

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

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

Appendix G

*Intersection Analysis Worksheets for
Opening Year (2022) Plus Project Conditions*

SimTraffic Simulation Summary
AM Peak Hour

08/06/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	6967	7028	6854	6917	6975	6991	6912
Vehs Exited	6949	7021	6882	6886	6984	6942	6881
Starting Vehs	377	412	380	417	389	375	411
Ending Vehs	395	419	352	448	380	424	442
Travel Distance (mi)	8921	9071	8931	8895	8958	8882	9020
Travel Time (hr)	410.1	434.4	410.6	433.3	428.0	421.4	422.9
Total Delay (hr)	95.9	114.0	94.9	119.5	111.8	108.0	103.7
Total Stops	10801	11618	10829	11458	11390	11329	11409
Fuel Used (gal)	302.4	311.8	302.8	308.9	307.0	304.9	307.1

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	6987	6934	6794	6937
Vehs Exited	7030	6879	6836	6927
Starting Vehs	427	367	438	393
Ending Vehs	384	422	396	390
Travel Distance (mi)	8941	9017	8892	8953
Travel Time (hr)	424.5	434.4	408.0	422.8
Total Delay (hr)	108.9	115.8	94.8	106.7
Total Stops	11371	11066	10520	11177
Fuel Used (gal)	306.1	310.0	301.5	306.3

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
AM Peak Hour

08/06/2021

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1727	1766	1753	1729	1740	1738	1752
Vehs Exited	1722	1739	1722	1723	1682	1705	1756
Starting Vehs	377	412	380	417	389	375	411
Ending Vehs	382	439	411	423	447	408	407
Travel Distance (mi)	2293	2254	2292	2182	2334	2212	2284
Travel Time (hr)	104.5	110.5	106.0	107.9	106.0	102.5	105.4
Total Delay (hr)	23.7	30.8	25.2	31.1	23.9	24.1	25.0
Total Stops	2714	2872	2847	2889	2794	2719	2833
Fuel Used (gal)	77.3	78.2	78.6	76.4	78.1	75.3	77.1

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1797	1691	1741	1741
Vehs Exited	1808	1647	1793	1731
Starting Vehs	427	367	438	393
Ending Vehs	416	411	386	406
Travel Distance (mi)	2144	2175	2273	2244
Travel Time (hr)	101.9	101.3	103.5	105.0
Total Delay (hr)	25.9	24.1	23.4	25.7
Total Stops	2775	2672	2666	2772
Fuel Used (gal)	73.7	74.5	76.9	76.6

SimTraffic Simulation Summary
AM Peak Hour

08/06/2021

Interval #2 Information

Start Time 7:15
End Time 7:30
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1816	1741	1686	1685	1779	1701	1680
Vehs Exited	1793	1723	1699	1716	1808	1704	1726
Starting Vehs	382	439	411	423	447	408	407
Ending Vehs	405	457	398	392	418	405	361
Travel Distance (mi)	2239	2315	2176	2172	2201	2250	2189
Travel Time (hr)	105.1	111.9	100.4	97.8	105.9	105.2	101.3
Total Delay (hr)	26.3	29.9	23.0	21.2	28.0	25.9	23.9
Total Stops	2873	2986	2621	2564	2939	2875	2725
Fuel Used (gal)	77.0	79.8	73.3	73.4	75.5	77.0	74.7

Interval #2 Information

Start Time 7:15
End Time 7:30
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1714	1759	1717	1726
Vehs Exited	1736	1684	1675	1724
Starting Vehs	416	411	386	406
Ending Vehs	394	486	428	406
Travel Distance (mi)	2270	2130	2248	2219
Travel Time (hr)	110.2	108.4	101.8	104.8
Total Delay (hr)	30.5	33.1	22.9	26.5
Total Stops	2864	2712	2637	2780
Fuel Used (gal)	78.5	74.2	76.0	75.9

SimTraffic Simulation Summary
AM Peak Hour

08/06/2021

Interval #3 Information

Start Time 7:30
End Time 7:45
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1743	1740	1704	1746	1724	1788	1747
Vehs Exited	1739	1778	1718	1681	1749	1791	1684
Starting Vehs	405	457	398	392	418	405	361
Ending Vehs	409	419	384	457	393	402	424
Travel Distance (mi)	2198	2243	2261	2274	2206	2228	2221
Travel Time (hr)	99.8	105.3	102.5	110.8	111.4	109.8	103.2
Total Delay (hr)	22.5	26.2	23.1	30.5	33.6	31.6	24.7
Total Stops	2544	2842	2672	2951	2891	2969	2823
Fuel Used (gal)	74.2	76.3	76.4	78.9	77.2	77.2	74.8

Interval #3 Information

Start Time 7:30
End Time 7:45
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1810	1698	1651	1730
Vehs Exited	1775	1758	1681	1737
Starting Vehs	394	486	428	406
Ending Vehs	429	426	398	403
Travel Distance (mi)	2270	2269	2215	2238
Travel Time (hr)	107.5	111.4	101.7	106.3
Total Delay (hr)	27.2	31.3	23.5	27.4
Total Stops	2949	2818	2586	2803
Fuel Used (gal)	77.2	78.4	74.8	76.5

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1681	1781	1711	1757	1732	1764	1733
Vehs Exited	1695	1781	1743	1766	1745	1742	1715
Starting Vehs	409	419	384	457	393	402	424
Ending Vehs	395	419	352	448	380	424	442
Travel Distance (mi)	2191	2258	2202	2267	2217	2192	2327
Travel Time (hr)	100.7	106.8	101.7	116.8	104.6	104.0	113.0
Total Delay (hr)	23.3	27.0	23.6	36.7	26.4	26.4	30.2
Total Stops	2670	2918	2689	3054	2766	2766	3028
Fuel Used (gal)	73.9	77.6	74.4	80.3	76.2	75.5	80.5

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1666	1786	1685	1726
Vehs Exited	1711	1790	1687	1735
Starting Vehs	429	426	398	403
Ending Vehs	384	422	396	390
Travel Distance (mi)	2257	2443	2155	2251
Travel Time (hr)	104.8	113.3	100.9	106.7
Total Delay (hr)	25.4	27.2	24.9	27.1
Total Stops	2783	2864	2631	2812
Fuel Used (gal)	76.7	83.0	73.8	77.2

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	2.7	1.1	0.0	0.0	0.0	0.0	0.0	3.9
Denied Del/Veh (s)	9.3	10.2	0.0	0.0	0.4	0.5	3.7	5.0
Total Delay (hr)	14.7	0.9	3.1	1.2	2.9	0.3	0.1	23.3
Total Del/Veh (s)	50.3	8.4	38.3	6.4	32.0	32.4	24.7	29.7
Stop Delay (hr)	11.8	0.8	2.8	0.6	2.4	0.3	0.1	18.9
Stop Del/Veh (s)	40.5	6.9	34.9	3.2	27.1	25.9	22.1	24.1

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.6	3.1	0.3
Total Delay (hr)	5.1	1.0	3.5	2.1	3.4	0.4	0.8	16.4
Total Del/Veh (s)	30.6	4.7	19.7	16.3	32.3	30.6	11.9	18.7
Stop Delay (hr)	4.3	0.4	2.9	1.9	3.1	0.3	0.7	13.7
Stop Del/Veh (s)	25.8	2.0	16.3	15.2	28.7	25.8	10.1	15.6

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.4	0.6
Denied Del/Veh (s)	0.0	0.0	0.0	0.6	0.6	0.4	0.1	0.1	3.6	3.5	0.9
Total Delay (hr)	4.3	0.5	0.0	0.1	6.3	0.7	0.9	0.0	0.7	1.6	15.1
Total Del/Veh (s)	32.3	4.1	1.2	54.6	33.3	9.2	207.1	7.1	35.9	14.2	23.0
Stop Delay (hr)	4.0	0.3	0.0	0.1	5.7	0.6	0.9	0.0	0.7	1.6	13.9
Stop Del/Veh (s)	29.8	2.7	0.7	51.6	30.1	8.1	205.9	7.5	34.1	13.8	21.0

4: Churn Creek Road & Victor Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Delay (hr)	0.1	0.4	0.1	0.0	0.5	1.2	2.3
Total Del/Veh (s)	9.2	2.9	0.8	0.5	33.7	18.5	6.2
Stop Delay (hr)	0.1	0.0	0.1	0.0	0.5	1.1	1.7
Stop Del/Veh (s)	5.0	0.0	0.4	0.4	31.3	17.6	4.6

5: Churn Creek Road & Rancho Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.0	0.0	0.2	0.0	1.4	1.9
Total Del/Veh (s)	3.1	0.6	1.2	0.4	16.4	1.6	10.9	6.4
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	1.1	1.3
Stop Del/Veh (s)	1.0	0.1	0.0	0.0	12.9	0.4	8.8	4.5

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.3	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.9	3.4	0.0	0.0	0.0	0.0	0.8
Total Delay (hr)	1.1	0.5	1.4	0.2	0.3	1.2	4.7
Total Del/Veh (s)	15.8	6.6	9.4	3.4	27.9	9.7	9.7
Stop Delay (hr)	0.9	0.4	1.0	0.1	0.3	0.6	3.2
Stop Del/Veh (s)	13.0	4.6	6.7	2.3	23.1	5.1	6.7

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	4.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.4	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.2	0.0	1.2
Total Del/Veh (s)	25.4	24.8	3.8	20.3	4.8	7.6	1.6	1.2	6.1	1.4	0.9	2.5
Stop Delay (hr)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Stop Del/Veh (s)	23.3	21.4	2.9	17.4	4.8	4.6	0.0	0.0	3.6	0.2	0.3	1.1

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.2	0.1	0.8	0.1	0.1	0.4	1.6
Total Del/Veh (s)	13.0	5.6	6.0	5.8	7.8	3.9	5.6
Stop Delay (hr)	0.2	0.1	0.1	0.0	0.0	0.1	0.5
Stop Del/Veh (s)	11.2	5.0	0.6	0.6	3.2	0.8	1.6

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	NBL	NBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	2.0	0.6	0.3	0.1	4.5	0.6	2.8
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Stop Del/Veh (s)	0.2	0.1	0.1	0.0	2.6	0.8	1.5

15: Aviation Drive & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.9	1.0	3.5	1.1
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.4	0.4	2.1	0.5

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBR	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.7	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.1	0.0	0.0	2.1	0.1	0.4	0.7	0.0	3.4
Total Del/Veh (s)	21.2	3.7	5.4	14.5	9.0	20.7	6.4	2.3	11.8
Stop Delay (hr)	0.1	0.0	0.0	0.9	0.0	0.3	0.3	0.0	1.7
Stop Del/Veh (s)	19.6	3.9	5.8	6.2	1.5	16.4	3.2	1.5	6.0

Total Zone Performance

Denied Delay (hr)	5.2
Denied Del/Veh (s)	4.3
Total Delay (hr)	70.2
Total Del/Veh (s)	300.1
Stop Delay (hr)	55.6
Stop Del/Veh (s)	237.6

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	343	421	10	66	94
Future Vol, veh/h	30	343	421	10	66	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	373	458	11	72	102
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	469	0	-	0	903	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	439	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1093	-	-	-	308	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1093	-	-	-	296	598
Mov Cap-2 Maneuver	-	-	-	-	296	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	650	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		19.4		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1093	-	-	-	421	
HCM Lane V/C Ratio	0.03	-	-	-	0.413	
HCM Control Delay (s)	8.4	0	-	-	19.4	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	2	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2022 Opening Year Plus Project
AM Peak Hour

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	428	28	12	152	38	105	17	34	45	9	139
Future Vol, veh/h	27	428	28	12	152	38	105	17	34	45	9	139
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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	465	30	13	165	41	114	18	37	49	10	151
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	206	0	0	495	0	0	830	770	480	757	744	165
Stage 1	-	-	-	-	-	-	538	538	-	191	191	-
Stage 2	-	-	-	-	-	-	292	232	-	566	553	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1365	-	-	1069	-	-	289	331	586	324	343	879
Stage 1	-	-	-	-	-	-	527	522	-	811	742	-
Stage 2	-	-	-	-	-	-	716	713	-	509	514	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1365	-	-	1069	-	-	228	320	586	283	332	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	320	-	283	332	-
Stage 1	-	-	-	-	-	-	516	511	-	794	733	-
Stage 2	-	-	-	-	-	-	578	704	-	450	503	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.5			28.5			12.9		
HCM LOS							D			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	228	459	1365	-	-	1069	-	-	283	799		
HCM Lane V/C Ratio	0.501	0.121	0.022	-	-	0.012	-	-	0.173	0.201		
HCM Control Delay (s)	35.6	13.9	7.7	-	-	8.4	-	-	20.4	10.6		
HCM Lane LOS	E	B	A	-	-	A	-	-	C	B		
HCM 95th %tile Q(veh)	2.5	0.4	0.1	-	-	0	-	-	0.6	0.7		

HCM 6th Signalized Intersection Summary

8: Airport Road & Rancho Road

2022 Opening Year Plus Project

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	5	162	0	12	25	92	418	0	3	291	65
Future Volume (veh/h)	463	5	162	0	12	25	92	418	0	3	291	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	503	5	176	0	13	27	100	454	0	3	316	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	591	861	730	4	108	162	178	763	340	8	589	263
Arrive On Green	0.33	0.46	0.46	0.00	0.06	0.06	0.05	0.21	0.00	0.00	0.17	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	503	5	176	0	13	27	100	454	0	3	316	71
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	13.0	0.1	3.3	0.0	0.3	0.5	1.4	5.7	0.0	0.0	4.0	1.9
Cycle Q Clear(g_c), s	13.0	0.1	3.3	0.0	0.3	0.5	1.4	5.7	0.0	0.0	4.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	591	861	730	4	108	162	178	763	340	8	589	263
V/C Ratio(X)	0.85	0.01	0.24	0.00	0.12	0.17	0.56	0.60	0.00	0.35	0.54	0.27
Avail Cap(c_a), veh/h	993	2048	1736	108	1290	1924	266	1881	839	210	1823	813
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	7.2	8.1	0.0	22.0	22.1	22.8	17.4	0.0	24.6	18.8	18.0
Incr Delay (d2), s/veh	3.7	0.0	0.2	0.0	0.5	0.5	2.8	0.7	0.0	23.3	0.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.9	0.0	0.1	0.1	0.6	2.1	0.0	0.0	1.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	7.2	8.2	0.0	22.5	22.6	25.6	18.2	0.0	47.9	19.6	18.5
LnGrp LOS	B	A	A	A	C	C	C	B	A	D	B	B
Approach Vol, veh/h	684			40			554			390		
Approach Delay, s/veh	16.2			22.6			19.5			19.6		
Approach LOS	B			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	17.0	0.0	28.7	6.0	14.6	19.9	8.9				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	26.1	3.0	54.0	3.8	25.3	27.5	34.0				
Max Q Clear Time (g_c+l1), s	2.0	7.7	0.0	5.3	3.4	6.0	15.0	2.5				
Green Ext Time (p_c), s	0.0	2.8	0.0	0.6	0.0	2.2	1.4	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	18.3											
HCM 6th LOS	B											
Notes												

HCM 6th Signalized Intersection Summary

2022 Opening Year Plus Project

9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↰		↰	↰			↰	↰
Traffic Volume (veh/h)	0	0	0	112	0	68	250	519	0	0	376	284
Future Volume (veh/h)	0	0	0	112	0	68	250	519	0	0	376	284
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No	No		No		No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				122	0	74	272	564	0	0	409	309
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				206	0	183	358	2332	0	0	661	495
Arrive On Green				0.12	0.00	0.12	0.20	0.66	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	2030	1450
Grp Volume(v), veh/h				122	0	74	272	564	0	0	375	343
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1609
Q Serve(g_s), s				2.6	0.0	1.7	5.7	2.6	0.0	0.0	7.0	7.0
Cycle Q Clear(g_c), s				2.6	0.0	1.7	5.7	2.6	0.0	0.0	7.0	7.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.90
Lane Grp Cap(c), veh/h				206	0	183	358	2332	0	0	607	549
V/C Ratio(X)				0.59	0.00	0.40	0.76	0.24	0.00	0.00	0.62	0.62
Avail Cap(c_a), veh/h				835	0	743	970	4727	0	0	1193	1081
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.6	0.0	16.2	14.9	2.8	0.0	0.0	10.8	10.9
Incr Delay (d2), s/veh				2.7	0.0	1.4	3.3	0.1	0.0	0.0	1.0	1.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.0	0.0	0.6	2.2	0.3	0.0	0.0	2.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.3	0.0	17.6	18.2	2.8	0.0	0.0	11.9	12.0
LnGrp LOS				B	A	B	B	A	A	A	B	B
Approach Vol, veh/h				196			836				718	
Approach Delay, s/veh				18.6			7.8				12.0	
Approach LOS				B			A				B	
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	30.4			12.4	18.0		9.1					
Change Period (Y+Rc), s	4.5			4.5	4.5		4.5					
Max Green Setting (Gmax), s	52.5			21.5	26.5		18.5					
Max Q Clear Time (g_c+I1), s	4.6			7.7	9.0		4.6					
Green Ext Time (p_c), s	4.4			0.7	4.4		0.6					
Intersection Summary												
HCM 6th Ctrl Delay				10.7								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 12: Airport Road & Preserve Boulevard

2022 Opening Year Plus Project
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	7	3	915	453	15
Future Volume (veh/h)	33	7	3	915	453	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	8	3	995	492	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	73	65	6	1941	1347	601
Arrive On Green	0.04	0.04	0.00	0.55	0.38	0.38
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	36	8	3	995	492	16
Grp Sat Flow(s), veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	0.6	0.1	0.1	5.4	3.0	0.2
Cycle Q Clear(g_c), s	0.6	0.1	0.1	5.4	3.0	0.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	73	65	6	1941	1347	601
V/C Ratio(X)	0.50	0.12	0.51	0.51	0.37	0.03
Avail Cap(c_a), veh/h	689	613	467	6475	4961	2213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	14.1	15.2	4.4	6.8	5.9
Incr Delay (d2), s/veh	5.1	0.8	55.5	0.2	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	0.1	0.7	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.5	15.0	70.7	4.6	7.0	6.0
LnGrp LOS	B	B	E	A	A	A
Approach Vol, veh/h	44			998	508	
Approach Delay, s/veh	18.6			4.8	7.0	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	24.1			6.4	5.1	19.0
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	55.6			* 12	8.0	42.6
Max Q Clear Time (g_c+l1), s	7.4			2.6	2.1	5.0
Green Ext Time (p_c), s	9.3			0.0	0.0	3.7

Intersection Summary

HCM 6th Ctrl Delay 5.9
HCM 6th LOS A

Notes

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

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

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2022 Opening Year Plus Project
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	5	21	0	1	2	189	469	7	5	253	47
Future Volume (veh/h)	32	5	21	0	1	2	189	469	7	5	253	47
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	35	5	23	0	1	2	205	510	8	5	275	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	372	110	93	290	110	93	421	1222	545	10	809	361
Arrive On Green	0.06	0.06	0.06	0.00	0.06	0.06	0.12	0.34	0.34	0.01	0.23	0.23
Sat Flow, veh/h	1414	1870	1585	1382	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	35	5	23	0	1	2	205	510	8	5	275	51
Grp Sat Flow(s),veh/h/ln	1414	1870	1585	1382	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.6	0.1	0.3	0.0	0.0	0.0	1.4	2.7	0.1	0.1	1.6	0.6
Cycle Q Clear(g_c), s	0.6	0.1	0.3	0.0	0.0	0.0	1.4	2.7	0.1	0.1	1.6	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	372	110	93	290	110	93	421	1222	545	10	809	361
V/C Ratio(X)	0.09	0.05	0.25	0.00	0.01	0.02	0.49	0.42	0.01	0.51	0.34	0.14
Avail Cap(c_a), veh/h	1882	2108	1786	1777	2123	1799	1043	5478	2443	287	4977	2220
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	11.0	11.2	0.0	11.0	11.0	10.2	6.2	5.4	12.3	8.0	7.7
Incr Delay (d2), s/veh	0.1	0.2	1.4	0.0	0.0	0.1	0.9	0.2	0.0	36.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	0.0	0.4	0.5	0.0	0.1	0.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	11.2	12.5	0.0	11.0	11.1	11.1	6.5	5.4	48.6	8.3	7.8
LnGrp LOS	B	B	B	A	B	B	B	A	A	D	A	A
Approach Vol, veh/h	63			3			723			331		
Approach Delay, s/veh	11.8			11.1			7.8			8.8		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	14.5		6.7	6.5	11.7		6.7				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	38.3			28.0	7.5	34.8		* 28				
Max Q Clear Time (g_c+I_2), s	4.7			2.6	3.4	3.6		2.0				
Green Ext Time (p_c), s	0.0	3.8		0.1	0.2	2.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 8.3

HCM 6th LOS A

Notes

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

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

HCM 6th TWSC
19: Aviation Drive & Northern Project Driveway

2022 Opening Year Plus Project
AM Peak Hour

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	79	39	0	40	20
Future Vol, veh/h	0	79	39	0	40	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	86	42	0	43	22
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	150	42	0	0	42	0
Stage 1	42	-	-	-	-	-
Stage 2	108	-	-	-	-	-
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	842	1029	-	-	1567	-
Stage 1	980	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	818	1029	-	-	1567	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.8	0		4.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 1029	1567	-		
HCM Lane V/C Ratio	-	- 0.083	0.028	-		
HCM Control Delay (s)	-	- 8.8	7.4	0		
HCM Lane LOS	-	- A	A	A		
HCM 95th %tile Q(veh)	-	- 0.3	0.1	-		

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	39	0	0	20	0
Future Vol, veh/h	0	39	0	0	20	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	42	0	0	22	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	44	0	0	0	0	0
Stage 1	0	-	-	-	-	-
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	967	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	967	-	-	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s		0				
HCM LOS	-					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	-	-	-		
HCM Lane LOS	-	-	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

SimTraffic Simulation Summary
PM Peak Hour

08/06/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	6257	6487	6360	6397	6495	6265	6556
Vehs Exited	6269	6477	6353	6410	6444	6257	6532
Starting Vehs	360	363	388	394	342	376	372
Ending Vehs	348	373	395	381	393	384	396
Travel Distance (mi)	8245	8647	8427	8397	8523	8468	8718
Travel Time (hr)	368.9	390.6	380.1	382.7	391.0	378.8	401.6
Total Delay (hr)	79.0	87.2	84.1	87.4	90.8	80.5	95.5
Total Stops	9284	9992	9629	9714	9978	9398	10067
Fuel Used (gal)	275.8	290.4	285.6	283.1	288.8	284.5	296.0

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	6452	6340	6417	6402
Vehs Exited	6384	6297	6442	6394
Starting Vehs	330	362	382	360
Ending Vehs	398	405	357	376
Travel Distance (mi)	8549	8415	8477	8487
Travel Time (hr)	388.7	380.5	383.7	384.6
Total Delay (hr)	87.8	83.8	85.6	86.2
Total Stops	9743	9583	9801	9720
Fuel Used (gal)	288.0	283.5	286.8	286.3

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
PM Peak Hour

08/06/2021

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1578	1657	1636	1620	1595	1508	1586
Vehs Exited	1550	1626	1668	1619	1576	1520	1566
Starting Vehs	360	363	388	394	342	376	372
Ending Vehs	388	394	356	395	361	364	392
Travel Distance (mi)	2093	2258	2217	2112	2105	2016	2050
Travel Time (hr)	94.5	101.7	98.9	97.4	96.0	88.8	93.8
Total Delay (hr)	21.1	22.5	21.4	22.8	21.7	18.0	21.8
Total Stops	2331	2533	2561	2505	2430	2146	2447
Fuel Used (gal)	70.0	75.7	74.9	71.5	70.6	67.5	69.2

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1578	1584	1588	1592
Vehs Exited	1551	1578	1572	1580
Starting Vehs	330	362	382	360
Ending Vehs	357	368	398	365
Travel Distance (mi)	2092	2127	2085	2116
Travel Time (hr)	94.3	96.3	94.4	95.6
Total Delay (hr)	20.8	21.3	21.1	21.2
Total Stops	2410	2433	2446	2424
Fuel Used (gal)	70.6	71.5	70.5	71.2

SimTraffic Simulation Summary
PM Peak Hour

08/06/2021

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1598	1611	1541	1605	1621	1591	1728
Vehs Exited	1627	1606	1532	1614	1585	1588	1655
Starting Vehs	388	394	356	395	361	364	392
Ending Vehs	359	399	365	386	397	367	465
Travel Distance (mi)	2115	2142	2009	1990	2090	2133	2287
Travel Time (hr)	94.4	98.4	91.7	90.9	96.1	97.2	103.9
Total Delay (hr)	19.8	23.3	21.1	21.0	22.5	21.9	23.8
Total Stops	2391	2539	2323	2383	2547	2543	2610
Fuel Used (gal)	70.8	72.1	68.5	67.2	70.6	72.0	78.1

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1616	1583	1677	1613
Vehs Exited	1588	1534	1654	1594
Starting Vehs	357	368	398	365
Ending Vehs	385	417	421	387
Travel Distance (mi)	2110	2057	2207	2114
Travel Time (hr)	94.9	93.5	102.2	96.3
Total Delay (hr)	20.6	21.0	24.6	21.9
Total Stops	2428	2366	2679	2472
Fuel Used (gal)	70.7	69.3	75.6	71.5

SimTraffic Simulation Summary
PM Peak Hour

08/06/2021

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1567	1576	1615	1583	1618	1619	1638
Vehs Exited	1558	1588	1608	1596	1646	1559	1691
Starting Vehs	359	399	365	386	397	367	465
Ending Vehs	368	387	372	373	369	427	412
Travel Distance (mi)	2061	2063	2087	2097	2124	2200	2194
Travel Time (hr)	92.5	92.0	95.1	94.9	96.8	98.3	103.3
Total Delay (hr)	20.2	19.9	21.6	21.4	22.2	21.1	26.6
Total Stops	2387	2410	2424	2339	2409	2367	2557
Fuel Used (gal)	69.5	69.5	70.7	70.3	72.2	74.0	74.8

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1626	1556	1499	1587
Vehs Exited	1630	1629	1583	1608
Starting Vehs	385	417	421	387
Ending Vehs	381	344	337	368
Travel Distance (mi)	2164	2086	2099	2118
Travel Time (hr)	96.9	94.8	94.4	95.9
Total Delay (hr)	21.0	21.1	20.6	21.6
Total Stops	2327	2419	2295	2386
Fuel Used (gal)	72.5	70.1	70.0	71.4

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1514	1643	1568	1589	1661	1547	1604
Vehs Exited	1534	1657	1545	1581	1637	1590	1620
Starting Vehs	368	387	372	373	369	427	412
Ending Vehs	348	373	395	381	393	384	396
Travel Distance (mi)	1975	2184	2114	2197	2203	2119	2188
Travel Time (hr)	87.6	98.5	94.3	99.5	102.1	94.4	100.5
Total Delay (hr)	18.0	21.6	20.0	22.2	24.3	19.4	23.4
Total Stops	2175	2510	2321	2487	2592	2342	2453
Fuel Used (gal)	65.6	73.0	71.5	74.1	75.4	70.9	73.9

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1632	1617	1653	1598
Vehs Exited	1615	1556	1633	1597
Starting Vehs	381	344	337	368
Ending Vehs	398	405	357	376
Travel Distance (mi)	2183	2145	2086	2139
Travel Time (hr)	102.6	95.9	92.7	96.8
Total Delay (hr)	25.5	20.4	19.3	21.4
Total Stops	2578	2365	2381	2416
Fuel Used (gal)	74.2	72.6	70.7	72.2

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	0.6	2.4	0.0	0.0	0.3	0.2	3.7	0.5
Total Delay (hr)	5.2	0.3	2.6	0.9	1.6	0.1	0.0	10.8
Total Del/Veh (s)	17.0	3.9	39.2	4.6	36.2	37.6	26.4	15.5
Stop Delay (hr)	3.5	0.2	2.4	0.4	1.5	0.1	0.0	8.0
Stop Del/Veh (s)	11.3	3.5	35.8	1.9	32.5	32.7	24.6	11.5

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.7	3.3	0.3
Total Delay (hr)	4.6	1.3	4.9	1.1	2.4	0.3	1.1	15.8
Total Del/Veh (s)	28.8	5.7	20.6	13.0	33.8	30.5	14.8	18.2
Stop Delay (hr)	3.8	0.5	4.2	1.1	2.2	0.3	1.0	13.0
Stop Del/Veh (s)	24.1	2.4	17.3	12.3	30.7	26.1	13.1	15.0

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.7
Denied Del/Veh (s)	0.1	0.0	0.3	0.7	0.1	0.1	0.1	0.1	3.3	3.4	1.0
Total Delay (hr)	3.5	2.6	0.0	0.1	4.6	0.4	2.7	0.0	1.4	2.7	18.1
Total Del/Veh (s)	29.5	13.7	2.9	51.8	29.1	7.8	877.2	18.7	33.3	16.3	24.6
Stop Delay (hr)	3.2	2.1	0.0	0.1	4.1	0.3	2.7	0.0	1.3	2.5	16.4
Stop Del/Veh (s)	26.4	10.7	1.5	49.4	26.0	7.0	875.9	19.2	31.3	15.3	22.3

4: Churn Creek Road & Victor Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Total Delay (hr)	0.3	0.8	0.1	0.0	0.9	1.0	3.2
Total Del/Veh (s)	10.3	4.1	0.9	0.5	48.2	27.5	7.4
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.8	1.0	2.0
Stop Del/Veh (s)	4.4	0.0	0.3	0.3	46.2	26.9	4.7

5: Churn Creek Road & Rancho Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Total Delay (hr)	0.5	0.0	0.0	0.0	0.1	0.0	0.9	1.6
Total Del/Veh (s)	3.7	0.7	1.2	0.4	19.7	0.9	9.6	4.8
Stop Delay (hr)	0.2	0.0	0.0	0.0	0.1	0.0	0.7	1.0
Stop Del/Veh (s)	1.6	0.1	0.0	0.0	16.3	0.2	7.7	3.1

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	2.0	1.0	3.3	0.0	0.1	0.0	0.0	0.9
Total Delay (hr)	1.3	0.0	0.5	1.6	0.1	0.3	1.0	4.9
Total Del/Veh (s)	15.3	16.7	6.0	11.0	3.7	25.5	9.6	10.4
Stop Delay (hr)	1.0	0.0	0.3	1.2	0.1	0.3	0.6	3.5
Stop Del/Veh (s)	12.3	12.7	4.0	8.0	2.5	21.3	5.4	7.5

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.3	4.0	0.1	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	0.3	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.2	0.0	1.0
Total Del/Veh (s)	20.5	3.3	15.8	5.0	6.3	2.0	1.5	4.9	1.3	0.9	2.6
Stop Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Stop Del/Veh (s)	18.4	2.7	12.8	4.8	3.4	0.0	0.0	2.7	0.3	0.3	1.1

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay (hr)	0.1	0.0	0.5	0.0	0.1	0.5	1.3
Total Del/Veh (s)	10.5	4.3	4.4	4.8	7.8	4.2	4.6
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1	0.3
Stop Del/Veh (s)	8.7	3.8	0.4	0.4	2.8	0.8	1.0

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	NBL	NBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	1.6	0.5	0.3	0.1	4.3	0.2	1.9
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.1	0.1	0.0	2.6	0.1	1.1

15: Aviation Drive & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	0.5	0.2	4.4	3.8	3.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.1	2.4	2.9	1.8

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.8	0.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1	0.0	1.0	0.0	0.0	1.1	0.0
Total Del/Veh (s)	16.4	11.8	3.5	21.8	0.6	4.1	18.8	10.1	4.8	14.1	7.8	3.4
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.5	0.0
Stop Del/Veh (s)	14.8	9.8	3.8	20.3	0.2	4.2	13.7	4.6	0.6	10.5	3.9	1.0

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	2.3
Total Del/Veh (s)	8.5
Stop Delay (hr)	1.2
Stop Del/Veh (s)	4.4

Total Zone Performance

Denied Delay (hr)	1.9
Denied Del/Veh (s)	1.5
Total Delay (hr)	59.0
Total Del/Veh (s)	360.6
Stop Delay (hr)	45.9
Stop Del/Veh (s)	280.7

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	472	343	22	15	51
Future Vol, veh/h	63	472	343	22	15	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	513	373	24	16	55
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	397	0	-	0	1034	385
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1162	-	-	-	257	663
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	520	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1162	-	-	-	236	663
Mov Cap-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	520	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		14		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1162	-	-	-	470	
HCM Lane V/C Ratio	0.059	-	-	-	0.153	
HCM Control Delay (s)	8.3	0	-	-	14	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2022 Opening Year Plus Project
PM Peak Hour

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	243	101	43	314	52	65	13	25	43	19	80
Future Vol, veh/h	69	243	101	43	314	52	65	13	25	43	19	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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	264	110	47	341	57	71	14	27	47	21	87
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	398	0	0	374	0	0	987	961	319	925	959	341
Stage 1	-	-	-	-	-	-	469	469	-	435	435	-
Stage 2	-	-	-	-	-	-	518	492	-	490	524	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1161	-	-	1184	-	-	226	256	722	250	257	701
Stage 1	-	-	-	-	-	-	575	561	-	600	580	-
Stage 2	-	-	-	-	-	-	541	548	-	560	530	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1161	-	-	1184	-	-	170	230	722	212	231	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	230	-	212	231	-
Stage 1	-	-	-	-	-	-	538	525	-	561	557	-
Stage 2	-	-	-	-	-	-	438	526	-	491	496	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0.9			30.9			17.9		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1SBLn2			
Capacity (veh/h)	170 417		1161	-	-	1184	-	-	212 504			
HCM Lane V/C Ratio	0.416 0.099		0.065	-	-	0.039	-	-	0.22 0.214			
HCM Control Delay (s)	40.5 14.6		8.3	-	-	8.2	-	-	26.7 14.1			
HCM Lane LOS	E B		A	-	-	A	-	-	D B			
HCM 95th %tile Q(veh)	1.9 0.3		0.2	-	-	0.1	-	-	0.8 0.8			

HCM 6th Signalized Intersection Summary

8: Airport Road & Rancho Road

2022 Opening Year Plus Project

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	7	113	6	14	19	149	322	4	3	361	251
Future Volume (veh/h)	174	7	113	6	14	19	149	322	4	3	361	251
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	189	8	123	7	15	21	162	350	4	3	392	273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	234	198	10	179	267	265	1220	544	8	956	427
Arrive On Green	0.13	0.13	0.13	0.01	0.10	0.10	0.08	0.34	0.34	0.00	0.27	0.27
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	189	8	123	7	15	21	162	350	4	3	392	273
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	4.7	0.2	3.4	0.2	0.3	0.3	2.1	3.3	0.1	0.0	4.1	6.9
Cycle Q Clear(g_c), s	4.7	0.2	3.4	0.2	0.3	0.3	2.1	3.3	0.1	0.0	4.1	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	234	198	10	179	267	265	1220	544	8	956	427
V/C Ratio(X)	0.80	0.03	0.62	0.70	0.08	0.08	0.61	0.29	0.01	0.35	0.41	0.64
Avail Cap(c_a), veh/h	254	1352	1146	117	1393	2078	265	2110	941	227	2071	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	17.5	18.9	22.7	18.8	18.8	20.4	10.9	9.9	22.7	13.7	14.7
Incr Delay (d2), s/veh	15.2	0.1	3.2	63.1	0.2	0.1	4.1	0.1	0.0	23.3	0.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.1	1.3	0.2	0.1	0.1	0.9	1.1	0.0	0.0	1.4	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	17.6	22.1	85.8	19.0	18.9	24.5	11.0	9.9	46.0	14.0	16.3
LnGrp LOS	C	B	C	F	B	B	C	B	A	D	B	B
Approach Vol, veh/h	320			43			516			668		
Approach Delay, s/veh	29.2			29.8			15.3			15.1		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	22.1	8.3	11.7	7.0	18.7	9.6	10.4				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	27.1	3.0	33.0	3.5	26.6	6.5	34.0				
Max Q Clear Time (g_c+l1), s	2.0	5.3	2.2	5.4	4.1	8.9	6.7	2.3				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	3.3	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	18.5											
HCM 6th LOS	B											
Notes												

HCM 6th Signalized Intersection Summary

2022 Opening Year Plus Project

9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↱		↰	↱			↰	↱
Traffic Volume (veh/h)	0	0	0	71	0	41	277	552	0	0	343	247
Future Volume (veh/h)	0	0	0	71	0	41	277	552	0	0	343	247
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				77	0	45	301	600	0	0	373	268
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				172	0	153	398	2346	0	0	626	443
Arrive On Green				0.10	0.00	0.10	0.22	0.66	0.00	0.00	0.32	0.32
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	2080	1407
Grp Volume(v), veh/h				77	0	45	301	600	0	0	333	308
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1617
Q Serve(g_s), s				1.5	0.0	1.0	5.8	2.6	0.0	0.0	5.8	6.0
Cycle Q Clear(g_c), s				1.5	0.0	1.0	5.8	2.6	0.0	0.0	5.8	6.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.87
Lane Grp Cap(c), veh/h				172	0	153	398	2346	0	0	560	510
V/C Ratio(X)				0.45	0.00	0.29	0.76	0.26	0.00	0.00	0.59	0.60
Avail Cap(c_a), veh/h				891	0	793	1180	5044	0	0	1129	1027
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				15.8	0.0	15.5	13.4	2.6	0.0	0.0	10.7	10.7
Incr Delay (d2), s/veh				1.8	0.0	1.1	3.0	0.1	0.0	0.0	1.0	1.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	0.3	2.2	0.2	0.0	0.0	1.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				17.6	0.0	16.6	16.4	2.6	0.0	0.0	11.7	11.9
LnGrp LOS				B	A	B	B	A	A	A	B	B
Approach Vol, veh/h				122			901				641	
Approach Delay, s/veh				17.2			7.2				11.8	
Approach LOS				B			A				B	
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	28.9			12.8	16.2		8.1					
Change Period (Y+Rc), s	4.5			4.5	4.5		4.5					
Max Green Setting (Gmax), s	52.5			24.5	23.5		18.5					
Max Q Clear Time (g_c+I1), s	4.6			7.8	8.0		3.5					
Green Ext Time (p_c), s	4.8			0.8	3.7		0.3					
Intersection Summary												
HCM 6th Ctrl Delay				9.7								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary 12: Airport Road & Preserve Boulevard

2022 Opening Year Plus Project
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	8	15	569	563	33
Future Volume (veh/h)	12	8	15	569	563	33
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	9	16	618	612	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	35	30	1961	1301	580
Arrive On Green	0.02	0.02	0.02	0.55	0.37	0.37
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	13	9	16	618	612	36
Grp Sat Flow(s), veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	0.2	0.2	0.3	2.8	3.9	0.4
Cycle Q Clear(g_c), s	0.2	0.2	0.3	2.8	3.9	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	40	35	30	1961	1301	580
V/C Ratio(X)	0.33	0.25	0.54	0.32	0.47	0.06
Avail Cap(c_a), veh/h	470	418	482	7157	5596	2496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	14.2	14.4	3.6	7.2	6.1
Incr Delay (d2), s/veh	4.7	3.7	14.3	0.1	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	0.2	0.2	0.3	0.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.9	17.9	28.8	3.7	7.4	6.1
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	22			634	648	
Approach Delay, s/veh	18.5			4.3	7.4	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	23.7			5.9	5.5	18.2
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	59.6			* 7.8	8.0	46.6
Max Q Clear Time (g_c+l1), s	4.8			2.2	2.3	5.9
Green Ext Time (p_c), s	5.0			0.0	0.0	4.9

Intersection Summary

HCM 6th Ctrl Delay 6.1
HCM 6th LOS A

Notes

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

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

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2022 Opening Year Plus Project

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	17	102	11	22	6	44	229	6	43	432	26
Future Volume (veh/h)	33	17	102	11	22	6	44	229	6	43	432	26
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	36	18	111	12	24	7	48	249	7	47	470	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	234	198	405	234	198	154	1082	483	78	1080	482
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.04	0.30	0.30	0.04	0.30	0.30
Sat Flow, veh/h	1378	1870	1585	1261	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	36	18	111	12	24	7	48	249	7	47	470	28
Grp Sat Flow(s),veh/h/ln	1378	1870	1585	1261	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.7	0.2	1.8	0.2	0.3	0.1	0.4	1.5	0.1	0.7	3.0	0.3
Cycle Q Clear(g_c), s	1.0	0.2	1.8	0.5	0.3	0.1	0.4	1.5	0.1	0.7	3.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	234	198	405	234	198	154	1082	483	78	1080	482
V/C Ratio(X)	0.09	0.08	0.56	0.03	0.10	0.04	0.31	0.23	0.01	0.60	0.44	0.06
Avail Cap(c_a), veh/h	1665	1930	1636	1558	1943	1647	557	4329	1931	479	4711	2101
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	10.8	11.5	11.0	10.8	10.7	12.9	7.3	6.8	13.1	7.8	6.9
Incr Delay (d2), s/veh	0.1	0.1	2.5	0.0	0.2	0.1	1.1	0.1	0.0	7.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.6	0.1	0.1	0.0	0.1	0.4	0.0	0.4	0.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	10.9	14.0	11.0	11.0	10.8	14.1	7.4	6.8	20.4	8.1	6.9
LnGrp LOS	B	B	B	B	B	B	B	A	A	C	A	A
Approach Vol, veh/h	165					43	304			545		
Approach Delay, s/veh	13.1					11.0	8.4			9.1		
Approach LOS	B					B	A			A		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.7	14.5	8.7		4.7	14.5	8.7					
Change Period (Y+Rc), s	3.5	6.0	5.2		3.5	6.0	* 5.2					
Max Green Setting (Gmax), s	4.7	34.0	28.8		4.5	37.0	* 29					
Max Q Clear Time (g_c+I_2), s	4.7	3.5	3.8		2.4	5.0	2.5					
Green Ext Time (p_c), s	0.0	1.7	0.5		0.0	3.5	0.1					

Intersection Summary

HCM 6th Ctrl Delay 9.6

HCM 6th LOS A

Notes

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

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

HCM 6th TWSC
19: Aviation Drive & Northern Driveway

2022 Opening Year Plus Project
PM Peak Hour

Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	35	17	0	30	15
Future Vol, veh/h	0	35	17	0	30	15
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	38	18	0	33	16
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	100	18	0	0	18	0
Stage 1	18	-	-	-	-	-
Stage 2	82	-	-	-	-	-
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	899	1061	-	-	1599	-
Stage 1	1005	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	880	1061	-	-	1599	-
Mov Cap-2 Maneuver	880	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		4.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1061		1599	-	
HCM Lane V/C Ratio	-	- 0.036		0.02	-	
HCM Control Delay (s)	-	- 8.5		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.1		0.1	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	17	0	0	15	0
Future Vol, veh/h	0	17	0	0	15	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	18	0	0	16	0
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	32	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	32	-	-	-	-	-
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	982	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	982	-	-	-	-	-
Mov Cap-2 Maneuver	982	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s		0				
HCM LOS	-					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	-	-	-		
HCM Lane LOS	-	-	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

Appendix H

*Intersection Analysis Worksheets for
Cumulative Year (2040) Conditions*

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	8606	8679	8733	8708	8613	8514	8831
Vehs Exited	8603	8693	8729	8643	8602	8541	8789
Starting Vehs	414	444	398	409	408	443	394
Ending Vehs	417	430	402	474	419	416	436
Travel Distance (mi)	9126	8962	8932	9053	9040	9060	9388
Travel Time (hr)	445.5	418.4	429.1	431.3	420.7	438.8	444.2
Total Delay (hr)	123.9	103.5	113.6	112.2	102.3	120.6	113.3
Total Stops	10954	11195	11217	11275	10878	11107	11530
Fuel Used (gal)	315.3	308.6	308.6	311.5	309.4	314.1	323.6

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	8703	8565	8576	8651
Vehs Exited	8698	8629	8616	8656
Starting Vehs	411	467	452	415
Ending Vehs	416	403	412	413
Travel Distance (mi)	9235	9321	9246	9136
Travel Time (hr)	430.6	484.8	443.8	438.7
Total Delay (hr)	104.5	158.1	118.8	117.1
Total Stops	11135	11641	11063	11199
Fuel Used (gal)	314.0	330.7	319.8	315.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2089	2186	2243	2127	2152	2088	2220
Vehs Exited	2104	2217	2169	2130	2175	2088	2168
Starting Vehs	414	444	398	409	408	443	394
Ending Vehs	399	413	472	406	385	443	446
Travel Distance (mi)	2269	2277	2268	2240	2237	2264	2303
Travel Time (hr)	102.9	107.5	109.5	107.6	103.0	108.4	105.6
Total Delay (hr)	23.0	27.3	29.5	28.8	24.0	28.5	24.3
Total Stops	2498	2865	2928	2807	2640	2749	2691
Fuel Used (gal)	76.9	79.0	78.9	77.0	76.3	77.9	78.7

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2201	2163	2074	0
Vehs Exited	2186	2179	2122	0
Starting Vehs	411	467	452	0
Ending Vehs	426	451	404	0
Travel Distance (mi)	2348	2365	2284	0
Travel Time (hr)	108.4	114.8	104.0	0.0
Total Delay (hr)	25.9	31.9	23.3	0.0
Total Stops	2740	2857	2568	0
Fuel Used (gal)	79.6	81.3	77.4	0.0

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2190	2116	2199	2149	2212	2101	2210
Vehs Exited	2174	2120	2246	2129	2172	2131	2214
Starting Vehs	399	413	472	406	385	443	446
Ending Vehs	415	409	425	426	425	413	442
Travel Distance (mi)	2254	2185	2222	2250	2222	2257	2346
Travel Time (hr)	103.1	102.6	113.9	106.5	104.5	115.9	110.8
Total Delay (hr)	23.7	25.8	35.5	27.0	26.1	36.8	28.3
Total Stops	2645	2806	2956	2713	2780	2690	2974
Fuel Used (gal)	76.6	75.3	78.5	77.1	76.4	80.0	80.5

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2177	2204	2186	0
Vehs Exited	2190	2174	2147	0
Starting Vehs	426	451	404	0
Ending Vehs	413	481	443	0
Travel Distance (mi)	2339	2369	2299	0
Travel Time (hr)	110.2	121.4	107.3	0.0
Total Delay (hr)	27.5	38.3	26.4	0.0
Total Stops	2829	3072	2688	0
Fuel Used (gal)	79.5	84.0	78.8	0.0

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Interval #3 Information

Start Time 7:30
End Time 7:45
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2182	2147	2093	2207	2134	2196	2172
Vehs Exited	2141	2164	2106	2210	2124	2193	2188
Starting Vehs	415	409	425	426	425	413	442
Ending Vehs	456	392	412	423	435	416	426
Travel Distance (mi)	2318	2183	2218	2250	2330	2340	2360
Travel Time (hr)	116.5	100.9	102.4	107.8	108.7	112.4	111.3
Total Delay (hr)	34.6	24.0	24.3	28.5	26.9	30.3	27.9
Total Stops	2917	2663	2577	2827	2796	2883	2843
Fuel Used (gal)	79.9	75.0	75.7	78.5	79.7	81.2	81.4

Interval #3 Information

Start Time 7:30
End Time 7:45
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2176	2137	2158	0
Vehs Exited	2215	2154	2154	0
Starting Vehs	413	481	443	0
Ending Vehs	374	464	447	0
Travel Distance (mi)	2312	2352	2318	0
Travel Time (hr)	108.7	122.9	112.7	0.0
Total Delay (hr)	26.8	40.4	31.4	0.0
Total Stops	2928	2959	2878	0
Fuel Used (gal)	78.5	84.0	80.2	0.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2145	2230	2198	2225	2115	2129	2229
Vehs Exited	2184	2192	2208	2174	2131	2129	2219
Starting Vehs	456	392	412	423	435	416	426
Ending Vehs	417	430	402	474	419	416	436
Travel Distance (mi)	2286	2317	2224	2313	2252	2199	2378
Travel Time (hr)	123.0	107.4	103.4	109.3	104.4	102.1	116.6
Total Delay (hr)	42.6	26.3	24.3	27.9	25.4	25.1	32.8
Total Stops	2894	2861	2756	2928	2662	2785	3022
Fuel Used (gal)	81.9	79.4	75.5	78.9	77.1	75.0	83.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2149	2061	2158	0
Vehs Exited	2107	2122	2193	0
Starting Vehs	374	464	447	0
Ending Vehs	416	403	412	0
Travel Distance (mi)	2236	2236	2345	0
Travel Time (hr)	103.3	125.8	119.8	0.0
Total Delay (hr)	24.3	47.5	37.7	0.0
Total Stops	2638	2753	2929	0
Fuel Used (gal)	76.5	81.4	83.4	0.0

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	6.3	3.6	0.0	0.0	0.1	0.0	0.0	10.1
Denied Del/Veh (s)	22.0	22.2	0.0	0.0	0.6	0.7	3.4	11.6
Total Delay (hr)	16.9	2.6	3.2	1.2	3.4	0.7	0.4	28.3
Total Del/Veh (s)	58.5	15.9	40.6	5.7	32.0	33.7	25.9	32.4
Stop Delay (hr)	14.0	2.0	2.9	0.6	2.8	0.5	0.3	23.2
Stop Del/Veh (s)	48.4	12.5	37.1	2.8	26.2	26.5	22.4	26.5

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.7	3.0	0.3
Total Delay (hr)	4.3	1.4	3.1	1.4	3.5	0.4	1.1	15.1
Total Del/Veh (s)	27.1	5.8	17.5	11.2	31.2	32.9	13.1	16.8
Stop Delay (hr)	3.5	0.6	2.5	1.2	3.1	0.4	0.9	12.2
Stop Del/Veh (s)	22.3	2.5	14.1	9.8	27.6	27.8	11.1	13.5

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.4	0.6
Denied Del/Veh (s)	0.0	0.0	0.0	0.9	0.6	0.5	0.1	0.1	3.5	3.5	0.9
Total Delay (hr)	5.2	0.6	0.0	0.0	4.4	0.7	0.6	0.0	0.8	1.5	13.8
Total Del/Veh (s)	35.7	4.2	1.2	45.0	24.3	9.3	137.0	8.4	40.4	12.9	20.3
Stop Delay (hr)	4.8	0.4	0.0	0.0	3.9	0.6	0.6	0.0	0.8	1.5	12.5
Stop Del/Veh (s)	32.7	2.7	0.7	42.6	21.4	8.3	135.7	8.9	38.6	12.7	18.4

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.3	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.9	3.4	0.0	0.1	0.0	0.0	0.8
Total Delay (hr)	1.3	0.7	1.7	0.2	0.4	1.4	5.6
Total Del/Veh (s)	17.2	7.7	10.3	3.7	28.6	9.9	10.6
Stop Delay (hr)	1.1	0.5	1.2	0.1	0.3	0.7	3.9
Stop Del/Veh (s)	14.2	5.6	7.5	2.5	23.8	5.1	7.5

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	4.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.5	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.3	0.0	1.5
Total Del/Veh (s)	30.3	17.4	4.3	46.8	7.0	7.7	1.6	2.0	5.9	1.5	0.9	2.7
Stop Delay (hr)	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Stop Del/Veh (s)	28.1	15.0	3.3	41.8	7.0	4.9	0.0	0.0	3.6	0.2	0.3	1.2

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.8	0.0	0.0	0.6	1.4
Total Del/Veh (s)	10.6	3.6	5.2	4.3	8.3	4.3	4.8
Stop Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.1	0.2
Stop Del/Veh (s)	9.6	3.5	0.5	0.4	2.8	0.9	0.7

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	NBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.3	0.4	0.1	0.0	0.2	0.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.1

15: Aviation Drive/Aviation & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.7	1.1	3.9	1.3
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.5	0.4	2.3	0.5

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.6	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.1	0.0	0.0	0.0	2.0	0.0	0.4	0.7	0.0	3.3
Total Del/Veh (s)	21.4	3.2	5.1	34.2	12.5	8.9	20.5	5.8	3.1	10.5
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.8	0.0	0.3	0.3	0.0	1.6
Stop Del/Veh (s)	19.7	3.5	5.3	24.1	5.0	1.8	16.1	2.7	1.7	5.1

Total Zone Performance

Denied Delay (hr)	11.5
Denied Del/Veh (s)	9.0
Total Delay (hr)	69.0
Total Del/Veh (s)	218.3
Stop Delay (hr)	54.2
Stop Del/Veh (s)	171.6

MOVEMENT SUMMARY

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 AM
Cumulative Year (Site Folder: General)]**

Churn Creek Road
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total	HV]	[Total	HV]				[Veh.	Dist]				
		veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: Churn Creek Road														
3	L2	110	2.0	120	2.0	0.193	6.2	LOS A	0.8	21.3	0.54	0.48	0.54	19.9
8	T1	12	2.0	13	2.0	0.193	6.2	LOS A	0.8	21.3	0.54	0.48	0.54	29.9
18	R2	29	2.0	32	2.0	0.193	6.2	LOS A	0.8	21.3	0.54	0.48	0.54	28.4
Approach		151	2.0	164	2.0	0.193	6.2	LOS A	0.8	21.3	0.54	0.48	0.54	22.2
East: Rancho Road														
1	L2	53	2.0	58	2.0	0.459	8.2	LOS A	2.9	74.6	0.48	0.33	0.48	29.8
6	T1	380	2.0	413	2.0	0.459	8.2	LOS A	2.9	74.6	0.48	0.33	0.48	27.0
16	R2	43	2.0	47	2.0	0.459	8.2	LOS A	2.9	74.6	0.48	0.33	0.48	29.0
Approach		476	2.0	517	2.0	0.459	8.2	LOS A	2.9	74.6	0.48	0.33	0.48	27.6
North: Victor Avenue														
7	L2	57	2.0	62	2.0	0.450	11.1	LOS B	2.7	68.9	0.71	0.79	0.93	28.0
4	T1	10	2.0	11	2.0	0.450	11.1	LOS B	2.7	68.9	0.71	0.79	0.93	28.6
14	R2	236	2.0	257	2.0	0.450	11.1	LOS B	2.7	68.9	0.71	0.79	0.93	24.9
Approach		303	2.0	329	2.0	0.450	11.1	LOS B	2.7	68.9	0.71	0.79	0.93	25.7
West: Churn Creek Road														
5	L2	38	2.0	41	2.0	0.376	6.8	LOS A	2.2	56.7	0.38	0.23	0.38	28.9
2	T1	316	2.0	343	2.0	0.376	6.8	LOS A	2.2	56.7	0.38	0.23	0.38	28.0
12	R2	54	2.0	59	2.0	0.376	6.8	LOS A	2.2	56.7	0.38	0.23	0.38	27.6
Approach		408	2.0	443	2.0	0.376	6.8	LOS A	2.2	56.7	0.38	0.23	0.38	28.0
All Vehicles		1338	2.0	1454	2.0	0.459	8.2	LOS A	2.9	74.6	0.51	0.42	0.56	26.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:03:44 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

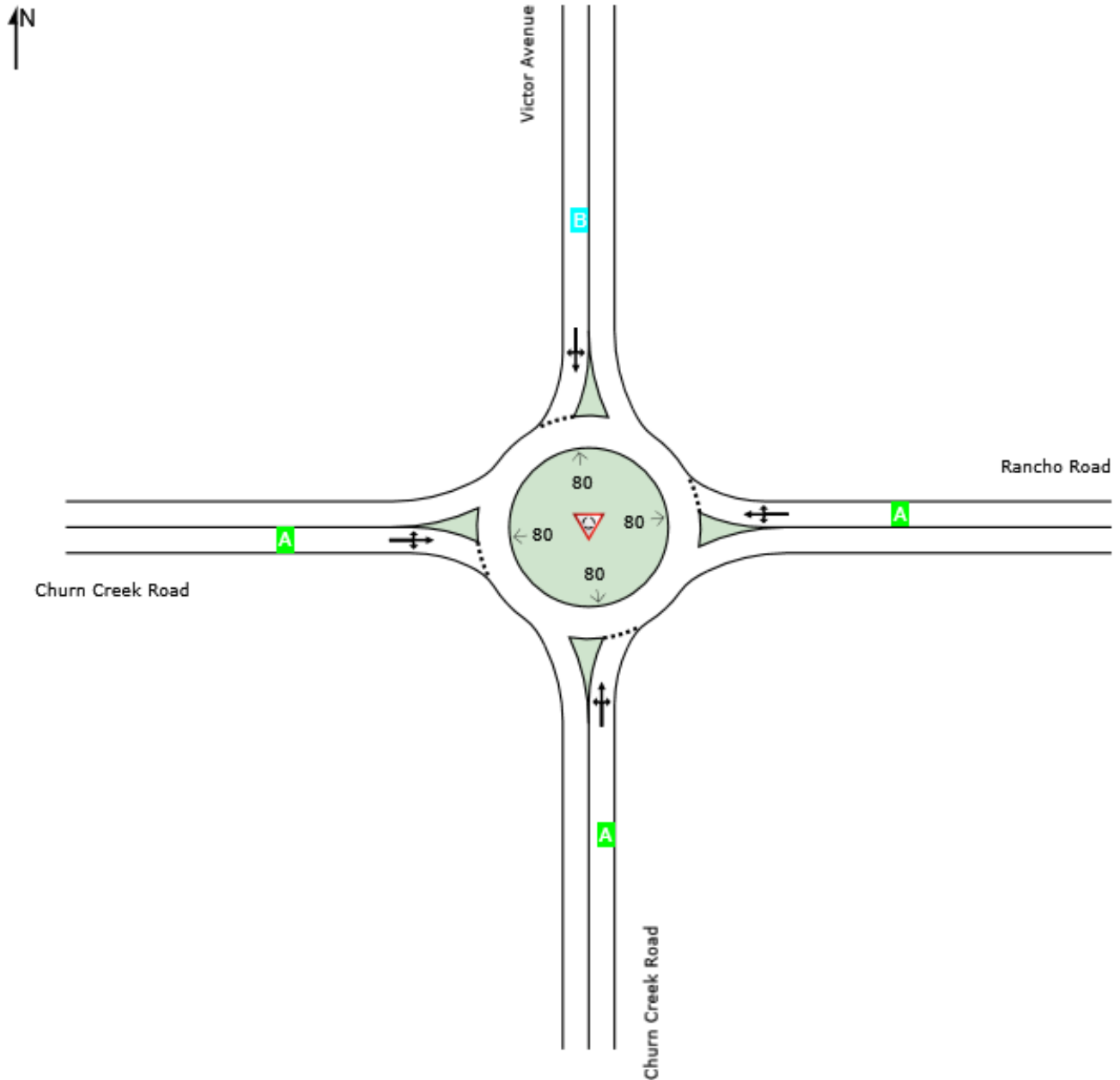
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 AM**
Cumulative Year (Site Folder: General)]

Churn Creek Road
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	B	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:03:44 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	389	402	10	73	94
Future Vol, veh/h	30	389	402	10	73	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	423	437	11	79	102
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	448	0	-	0	932	443
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1112	-	-	-	296	615
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1112	-	-	-	284	615
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	616	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		20.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1112	-	-	-	407	
HCM Lane V/C Ratio	0.029	-	-	-	0.446	
HCM Control Delay (s)	8.3	0	-	-	20.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2040 Cumulative Year
AM Peak Hour

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	491	0	2	150	36	23	5	6	44	5	147
Future Vol, veh/h	27	491	0	2	150	36	23	5	6	44	5	147
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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	534	0	2	163	39	25	5	7	48	5	160
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	202	0	0	534	0	0	861	798	534	765	759	163
Stage 1	-	-	-	-	-	-	592	592	-	167	167	-
Stage 2	-	-	-	-	-	-	269	206	-	598	592	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1370	-	-	1034	-	-	276	319	546	320	336	882
Stage 1	-	-	-	-	-	-	493	494	-	835	760	-
Stage 2	-	-	-	-	-	-	737	731	-	489	494	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1370	-	-	1034	-	-	219	312	546	307	328	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	312	-	307	328	-
Stage 1	-	-	-	-	-	-	483	484	-	817	758	-
Stage 2	-	-	-	-	-	-	598	730	-	468	484	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			20.5			12.3		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1SBLn2			
Capacity (veh/h)	219 407		1370	-	-	1034	-	-	307 836			
HCM Lane V/C Ratio	0.114 0.029		0.021	-	-	0.002	-	-	0.156 0.198			
HCM Control Delay (s)	23.5 14.1		7.7	-	-	8.5	-	-	18.9 10.4			
HCM Lane LOS	C B		A	-	-	A	-	-	C B			
HCM 95th %tile Q(veh)	0.4 0.1		0.1	-	-	0	-	-	0.5 0.7			

HCM 6th Signalized Intersection Summary 8: Airport Road & Rancho Road

2040 Cumulative Year
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	4	159	0	11	25	59	463	0	3	338	62
Future Volume (veh/h)	486	4	159	0	11	25	59	463	0	3	338	62
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	528	4	173	0	12	27	64	503	0	3	367	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	610	870	737	3	103	154	120	804	359	8	689	307
Arrive On Green	0.34	0.47	0.47	0.00	0.06	0.06	0.03	0.23	0.00	0.00	0.19	0.19
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	528	4	173	0	12	27	64	503	0	3	367	67
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	14.4	0.1	3.4	0.0	0.3	0.5	0.9	6.6	0.0	0.0	4.8	1.8
Cycle Q Clear(g_c), s	14.4	0.1	3.4	0.0	0.3	0.5	0.9	6.6	0.0	0.0	4.8	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	610	870	737	3	103	154	120	804	359	8	689	307
V/C Ratio(X)	0.87	0.00	0.23	0.00	0.12	0.18	0.53	0.63	0.00	0.35	0.53	0.22
Avail Cap(c_a), veh/h	943	1944	1648	103	1224	1826	259	1785	796	200	1724	769
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	7.4	8.3	0.0	23.3	23.4	24.7	18.1	0.0	25.9	18.8	17.6
Incr Delay (d2), s/veh	5.4	0.0	0.2	0.0	0.5	0.5	3.6	0.8	0.0	23.4	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	1.0	0.0	0.1	0.2	0.4	2.5	0.0	0.0	1.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	7.4	8.5	0.0	23.8	23.9	28.3	18.9	0.0	49.3	19.5	18.0
LnGrp LOS	C	A	A	A	C	C	C	B	A	D	B	B
Approach Vol, veh/h	705		39				567		437			
Approach Delay, s/veh	18.1		23.9				20.0		19.4			
Approach LOS	B		C				B		B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	18.2	0.0	30.2	5.3	16.5	21.3	8.9				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	26.1	3.0	54.0	3.9	25.2	27.5	34.0				
Max Q Clear Time (g_c+I1), s	2.0	8.6	0.0	5.4	2.9	6.8	16.4	2.5				
Green Ext Time (p_c), s	0.0	3.1	0.0	0.6	0.0	2.5	1.4	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	19.2											
HCM 6th LOS	B											
Notes												

HCM 6th Signalized Intersection Summary
 9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

2040 Cumulative Year

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↰		↰	↰			↰	↰
Traffic Volume (veh/h)	0	0	0	114	0	78	259	622	0	0	445	377
Future Volume (veh/h)	0	0	0	114	0	78	259	622	0	0	445	377
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				124	0	85	282	676	0	0	484	410
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				206	0	183	362	2437	0	0	700	592
Arrive On Green				0.12	0.00	0.12	0.20	0.69	0.00	0.00	0.38	0.38
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	1918	1544
Grp Volume(v), veh/h				124	0	85	282	676	0	0	471	423
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1592
Q Serve(g_s), s				3.0	0.0	2.3	6.8	3.3	0.0	0.0	10.1	10.1
Cycle Q Clear(g_c), s				3.0	0.0	2.3	6.8	3.3	0.0	0.0	10.1	10.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.97
Lane Grp Cap(c), veh/h				206	0	183	362	2437	0	0	681	611
V/C Ratio(X)				0.60	0.00	0.46	0.78	0.28	0.00	0.00	0.69	0.69
Avail Cap(c_a), veh/h				712	0	633	853	4149	0	0	1047	938
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.0	0.0	18.7	17.1	2.8	0.0	0.0	11.7	11.7
Incr Delay (d2), s/veh				2.8	0.0	1.8	3.7	0.1	0.0	0.0	1.3	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.8	2.8	0.5	0.0	0.0	3.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.9	0.0	20.5	20.8	2.8	0.0	0.0	13.0	13.1
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					209			958			894	
Approach Delay, s/veh					21.3			8.1			13.1	
Approach LOS					C			A			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		35.6			13.7	21.9		9.7				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		52.9			21.7	26.7		18.1				
Max Q Clear Time (g_c+I1), s		5.3			8.8	12.1		5.0				
Green Ext Time (p_c), s		5.5			0.7	5.3		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				11.6								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 12: Airport Road & Preserve Boulevard

2040 Cumulative Year
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	49	10	8	972	502	18
Future Volume (veh/h)	49	10	8	972	502	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	11	9	1057	546	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	96	86	17	1986	1406	627
Arrive On Green	0.05	0.05	0.01	0.56	0.40	0.40
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	53	11	9	1057	546	20
Grp Sat Flow(s), veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	0.9	0.2	0.2	6.1	3.6	0.3
Cycle Q Clear(g_c), s	0.9	0.2	0.2	6.1	3.6	0.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	96	86	17	1986	1406	627
V/C Ratio(X)	0.55	0.13	0.53	0.53	0.39	0.03
Avail Cap(c_a), veh/h	701	624	438	5963	4543	2026
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	14.7	16.0	4.5	7.0	6.0
Incr Delay (d2), s/veh	4.8	0.7	22.8	0.2	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	0.0	0.2	0.9	0.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.9	15.3	38.8	4.7	7.2	6.0
LnGrp LOS	B	B	D	A	A	A
Approach Vol, veh/h	64			1066	566	
Approach Delay, s/veh	19.1			5.0	7.2	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	25.6			7.0	5.3	20.3
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	54.6			* 13	8.0	41.6
Max Q Clear Time (g_c+l1), s	8.1			2.9	2.2	5.6
Green Ext Time (p_c), s	10.1			0.1	0.0	4.2

Intersection Summary

HCM 6th Ctrl Delay 6.3
HCM 6th LOS A

Notes

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

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

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2040 Cumulative Year
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	5	33	0	1	2	251	540	8	5	250	62
Future Volume (veh/h)	34	5	33	0	1	2	251	540	8	5	250	62
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	37	5	36	0	1	2	273	587	9	5	272	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	127	108	273	127	108	485	1316	587	10	836	373
Arrive On Green	0.07	0.07	0.07	0.00	0.07	0.07	0.14	0.37	0.37	0.01	0.24	0.24
Sat Flow, veh/h	1414	1870	1585	1366	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	37	5	36	0	1	2	273	587	9	5	272	67
Grp Sat Flow(s),veh/h/ln	1414	1870	1585	1366	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.7	0.1	0.6	0.0	0.0	0.0	1.9	3.3	0.1	0.1	1.7	0.9
Cycle Q Clear(g_c), s	0.7	0.1	0.6	0.0	0.0	0.0	1.9	3.3	0.1	0.1	1.7	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	127	108	273	127	108	485	1316	587	10	836	373
V/C Ratio(X)	0.10	0.04	0.33	0.00	0.01	0.02	0.56	0.45	0.02	0.51	0.33	0.18
Avail Cap(c_a), veh/h	1770	1983	1680	1638	1997	1692	1020	5152	2298	270	4641	2070
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	11.5	11.7	0.0	11.5	11.5	10.6	6.3	5.3	13.1	8.4	8.1
Incr Delay (d2), s/veh	0.1	0.1	1.8	0.0	0.0	0.1	1.0	0.2	0.0	36.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	0.0	0.0	0.0	0.6	0.7	0.0	0.1	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	11.6	13.6	0.0	11.5	11.6	11.6	6.5	5.3	49.5	8.6	8.3
LnGrp LOS	B	B	B	A	B	B	B	A	A	D	A	A
Approach Vol, veh/h	78			3			869			344		
Approach Delay, s/veh	12.7			11.5			8.1			9.1		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	15.8		7.0	7.2	12.2		7.0				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	38.3			28.0	7.8	34.5		* 28				
Max Q Clear Time (g_c+I_2), s	5.3			2.7	3.9	3.7		2.0				
Green Ext Time (p_c), s	0.0	4.5		0.2	0.3	2.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay 8.7

HCM 6th LOS A

Notes

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

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

SimTraffic Simulation Summary
PM Peak Hour

08/10/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	7804	7778	7795	7796	7771	7603	7808
Vehs Exited	7813	7767	7739	7752	7715	7636	7780
Starting Vehs	362	387	354	383	348	385	358
Ending Vehs	353	398	410	427	404	352	386
Travel Distance (mi)	8748	8629	8513	8564	8787	8324	8613
Travel Time (hr)	393.0	394.3	386.4	390.0	402.5	375.4	392.0
Total Delay (hr)	86.2	91.4	86.9	89.4	93.8	83.0	90.0
Total Stops	9609	9747	9803	9925	9972	9269	9854
Fuel Used (gal)	294.2	292.6	288.0	289.7	297.3	280.3	290.6

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	7798	7722	7848	7771
Vehs Exited	7755	7712	7874	7755
Starting Vehs	337	384	396	360
Ending Vehs	380	394	370	378
Travel Distance (mi)	8649	8603	8495	8593
Travel Time (hr)	391.6	390.0	396.4	391.1
Total Delay (hr)	87.9	87.4	97.7	89.4
Total Stops	9856	9557	10188	9786
Fuel Used (gal)	291.5	291.2	290.9	290.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
PM Peak Hour

08/10/2021

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1968	2010	1929	2023	1904	1882	2022
Vehs Exited	1934	2000	1894	1985	1841	1894	1956
Starting Vehs	362	387	354	383	348	385	358
Ending Vehs	396	397	389	421	411	373	424
Travel Distance (mi)	2064	2199	2138	2221	2122	2130	2208
Travel Time (hr)	91.9	101.9	96.4	102.5	96.0	96.2	101.9
Total Delay (hr)	19.3	24.9	21.1	24.5	21.6	21.3	24.4
Total Stops	2258	2604	2427	2685	2364	2393	2583
Fuel Used (gal)	69.1	74.1	72.4	75.0	71.2	71.5	74.7

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2019	1970	1962	0
Vehs Exited	1973	1957	1954	0
Starting Vehs	337	384	396	0
Ending Vehs	383	397	404	0
Travel Distance (mi)	2230	2142	2092	0
Travel Time (hr)	101.9	96.7	96.0	0.0
Total Delay (hr)	24.1	21.3	22.4	0.0
Total Stops	2610	2385	2417	0
Fuel Used (gal)	75.7	72.2	70.5	0.0

SimTraffic Simulation Summary
PM Peak Hour

08/10/2021

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2022	1945	1855	1892	1934	1857	1988
Vehs Exited	2000	1944	1885	1957	1926	1875	2009
Starting Vehs	396	397	389	421	411	373	424
Ending Vehs	418	398	359	356	419	355	403
Travel Distance (mi)	2251	2184	2059	2081	2164	2010	2252
Travel Time (hr)	102.8	98.5	95.1	95.5	98.4	89.3	101.2
Total Delay (hr)	23.8	21.8	22.6	22.4	22.2	18.5	22.5
Total Stops	2546	2373	2393	2393	2488	2150	2464
Fuel Used (gal)	75.7	74.7	69.8	70.4	72.8	67.2	76.1

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1907	1906	2028	0
Vehs Exited	1913	1919	2032	0
Starting Vehs	383	397	404	0
Ending Vehs	377	384	400	0
Travel Distance (mi)	2088	2115	2169	0
Travel Time (hr)	93.3	95.1	104.6	0.0
Total Delay (hr)	19.8	20.7	28.1	0.0
Total Stops	2359	2331	2781	0
Fuel Used (gal)	70.4	71.4	75.7	0.0

SimTraffic Simulation Summary
PM Peak Hour

08/10/2021

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1904	1898	1922	1938	1918	2042	1857
Vehs Exited	1945	1944	1904	1928	1955	1998	1883
Starting Vehs	418	398	359	356	419	355	403
Ending Vehs	377	352	377	366	382	399	377
Travel Distance (mi)	2237	2146	2063	2181	2227	2158	1948
Travel Time (hr)	100.1	98.7	92.3	97.9	101.0	99.0	88.7
Total Delay (hr)	21.9	23.5	19.8	21.7	23.1	23.4	20.1
Total Stops	2367	2473	2349	2429	2452	2530	2287
Fuel Used (gal)	75.5	73.1	69.3	73.8	75.1	73.8	65.7

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1946	1909	1890	0
Vehs Exited	1932	1901	1928	0
Starting Vehs	377	384	400	0
Ending Vehs	391	392	362	0
Travel Distance (mi)	2188	2134	2081	0
Travel Time (hr)	99.7	97.8	94.8	0.0
Total Delay (hr)	22.6	22.5	21.6	0.0
Total Stops	2509	2460	2377	0
Fuel Used (gal)	73.3	72.6	70.7	0.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1910	1925	2089	1943	2015	1822	1941
Vehs Exited	1934	1879	2056	1882	1993	1869	1932
Starting Vehs	377	352	377	366	382	399	377
Ending Vehs	353	398	410	427	404	352	386
Travel Distance (mi)	2196	2100	2254	2080	2275	2026	2205
Travel Time (hr)	98.1	95.2	102.6	94.1	107.0	90.9	100.2
Total Delay (hr)	21.3	21.2	23.3	20.8	26.8	19.8	23.0
Total Stops	2438	2297	2634	2418	2668	2196	2520
Fuel Used (gal)	73.9	70.8	76.4	70.5	78.2	67.8	74.1

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1926	1937	1968	0
Vehs Exited	1937	1935	1960	0
Starting Vehs	391	392	362	0
Ending Vehs	380	394	370	0
Travel Distance (mi)	2144	2212	2153	0
Travel Time (hr)	96.6	100.4	101.0	0.0
Total Delay (hr)	21.4	22.8	25.5	0.0
Total Stops	2378	2381	2613	0
Fuel Used (gal)	72.0	75.0	74.0	0.0

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	0.6	2.3	0.0	0.0	0.2	0.3	4.5	0.6
Total Delay (hr)	7.6	0.5	2.6	1.1	1.2	0.1	0.0	13.1
Total Del/Veh (s)	23.7	5.9	32.1	5.8	37.3	40.9	33.9	18.4
Stop Delay (hr)	5.3	0.5	2.3	0.6	1.1	0.1	0.0	9.8
Stop Del/Veh (s)	16.6	5.3	28.6	2.9	34.0	35.7	32.4	13.8

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.6	3.3	0.3
Total Delay (hr)	5.7	1.3	4.9	0.9	2.2	0.4	1.7	17.0
Total Del/Veh (s)	37.8	5.3	19.8	10.2	32.2	30.9	19.9	19.1
Stop Delay (hr)	4.9	0.5	4.1	0.8	2.0	0.3	1.5	14.2
Stop Del/Veh (s)	32.8	2.2	16.5	9.4	29.0	26.6	18.0	15.9

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.8
Denied Del/Veh (s)	0.0	0.0	0.0	2.9	0.3	0.2	4.2	0.1	3.4	3.4	1.1
Total Delay (hr)	4.4	2.6	0.0	0.1	4.3	0.4	1.7	0.0	1.6	2.5	17.6
Total Del/Veh (s)	34.0	13.5	2.3	53.5	27.4	7.5	596.0	13.2	36.9	14.5	23.3
Stop Delay (hr)	4.0	2.1	0.0	0.1	3.9	0.3	1.7	0.0	1.5	2.4	15.9
Stop Del/Veh (s)	30.8	10.8	1.3	51.1	24.5	6.9	594.5	13.7	34.9	13.5	21.1

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.5
Denied Del/Veh (s)	1.9	1.1	3.3	0.0	0.2	0.0	0.0	0.9
Total Delay (hr)	1.9	0.0	0.5	2.0	0.1	0.5	1.1	6.2
Total Del/Veh (s)	17.9	20.1	6.5	12.1	4.0	27.6	9.2	11.7
Stop Delay (hr)	1.6	0.0	0.4	1.5	0.1	0.4	0.6	4.5
Stop Del/Veh (s)	14.5	14.4	4.5	8.9	2.6	23.1	5.0	8.5

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.2	4.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.1
Total Delay (hr)	0.3	0.0	0.0	0.1	0.1	0.4	0.0	0.0	0.2	0.0	1.2
Total Del/Veh (s)	22.5	3.5	22.8	5.5	7.6	2.3	1.7	6.1	1.3	1.0	2.8
Stop Delay (hr)	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.5
Stop Del/Veh (s)	20.5	2.9	18.9	5.3	4.3	0.0	0.0	3.9	0.3	0.3	1.2

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	1.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.5	0.0	0.0	0.6	1.2
Total Del/Veh (s)	7.9	3.0	4.2	4.7	7.6	4.4	4.3
Stop Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.1	0.2
Stop Del/Veh (s)	6.5	2.9	0.4	0.3	2.4	0.8	0.7

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	NBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.9	0.3	0.1	0.0	0.2	0.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.1	0.0	0.0	0.2	0.1

15: Aviation Drive/Aviation & Mill Lane/Shasta View Drive Performance by movement

Movement	EBT	EBR	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	0.5	0.2	4.4	2.6	3.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.1	2.5	2.4	1.8

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.5		3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1	0.1	1.1	0.0	0.0	1.1	0.0
Total Del/Veh (s)	19.6		3.5	16.4	0.6	4.3	20.9	11.5	3.5	16.6	8.9	4.3
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.0	0.0	0.6	0.0
Stop Del/Veh (s)	17.9		3.8	14.9	0.2	4.5	14.9	5.1	1.3	11.7	4.5	1.3

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	2.5
Total Del/Veh (s)	9.8
Stop Delay (hr)	1.3
Stop Del/Veh (s)	5.1

Total Zone Performance

Denied Delay (hr)	2.1
Denied Del/Veh (s)	1.7
Total Delay (hr)	58.8
Total Del/Veh (s)	401.1
Stop Delay (hr)	46.4
Stop Del/Veh (s)	316.5

MOVEMENT SUMMARY

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 PM**
Cumulative Year (Site Folder: General)]

Churn Creek Road
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total	HV]	[Total	HV]				[Veh.	Dist]				
		veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: Churn Creek Road														
3	L2	98	2.0	107	2.0	0.306	8.8	LOS A	1.4	34.4	0.65	0.65	0.65	19.3
8	T1	19	2.0	21	2.0	0.306	8.8	LOS A	1.4	34.4	0.65	0.65	0.65	29.1
18	R2	83	2.0	90	2.0	0.306	8.8	LOS A	1.4	34.4	0.65	0.65	0.65	27.6
Approach		200	2.0	217	2.0	0.306	8.8	LOS A	1.4	34.4	0.65	0.65	0.65	23.5
East: Rancho Road														
1	L2	38	2.0	41	2.0	0.427	8.2	LOS A	2.5	62.9	0.55	0.43	0.55	29.8
6	T1	308	2.0	335	2.0	0.427	8.2	LOS A	2.5	62.9	0.55	0.43	0.55	27.0
16	R2	59	2.0	64	2.0	0.427	8.2	LOS A	2.5	62.9	0.55	0.43	0.55	29.0
Approach		405	2.0	440	2.0	0.427	8.2	LOS A	2.5	62.9	0.55	0.43	0.55	27.7
North: Victor Avenue														
7	L2	55	2.0	60	2.0	0.290	7.6	LOS A	1.3	33.8	0.60	0.56	0.60	29.8
4	T1	24	2.0	26	2.0	0.290	7.6	LOS A	1.3	33.8	0.60	0.56	0.60	30.3
14	R2	139	2.0	151	2.0	0.290	7.6	LOS A	1.3	33.8	0.60	0.56	0.60	26.8
Approach		218	2.0	237	2.0	0.290	7.6	LOS A	1.3	33.8	0.60	0.56	0.60	28.0
West: Churn Creek Road														
5	L2	123	2.0	134	2.0	0.629	11.2	LOS B	5.5	139.9	0.55	0.34	0.55	25.8
2	T1	391	2.0	425	2.0	0.629	11.2	LOS B	5.5	139.9	0.55	0.34	0.55	24.7
12	R2	171	2.0	186	2.0	0.629	11.2	LOS B	5.5	139.9	0.55	0.34	0.55	24.7
Approach		685	2.0	745	2.0	0.629	11.2	LOS B	5.5	139.9	0.55	0.34	0.55	24.9
All Vehicles		1508	2.0	1639	2.0	0.629	9.6	LOS A	5.5	139.9	0.57	0.44	0.57	25.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:05:13 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

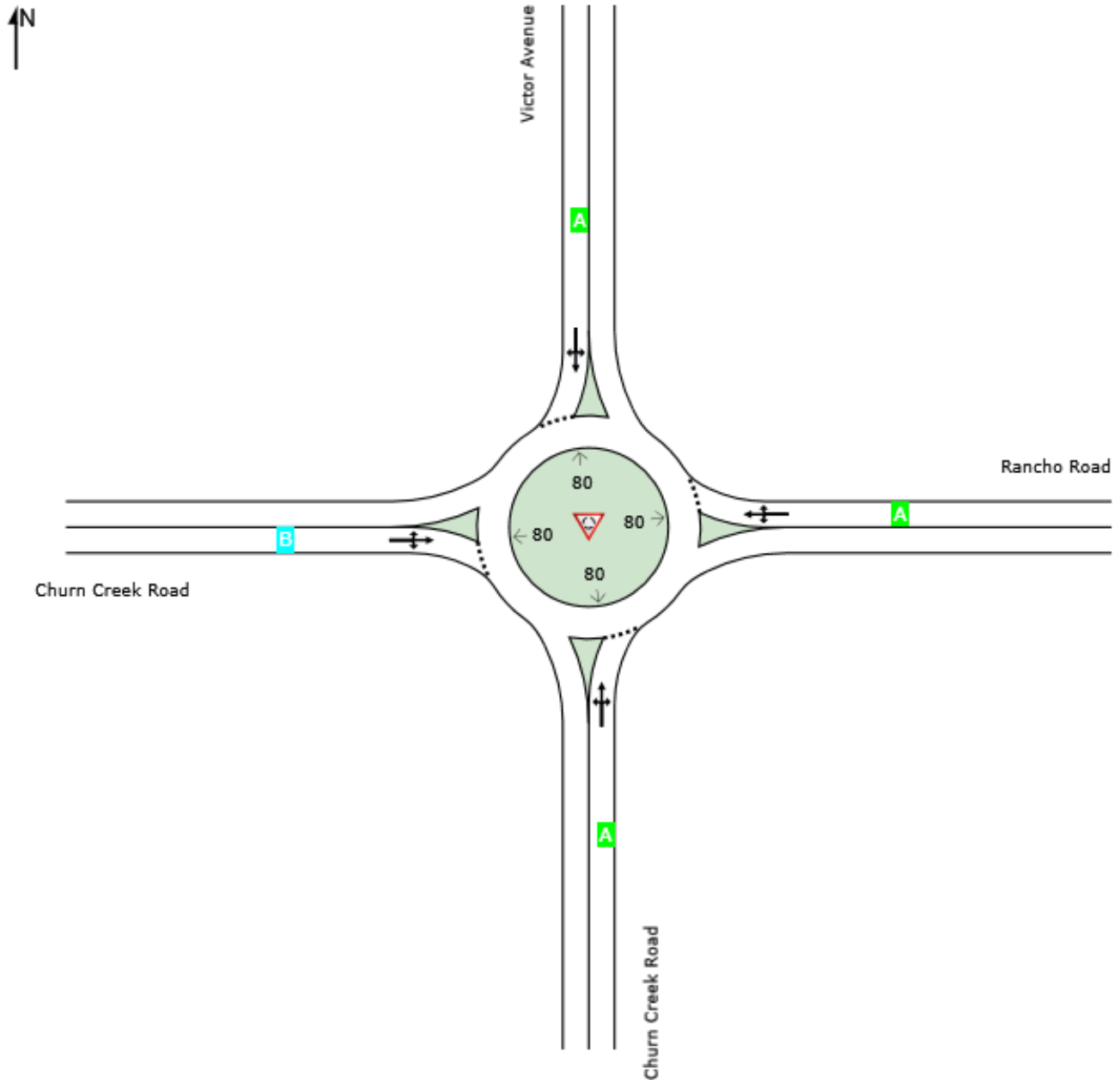
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 PM**
Cumulative Year (Site Folder: General)]

Churn Creek Road
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:05:13 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	493	360	38	24	60
Future Vol, veh/h	74	493	360	38	24	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	536	391	41	26	65
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	432	0	-	0	1108	412
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	696	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1128	-	-	-	232	640
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1128	-	-	-	209	640
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	495	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		16.5		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1128	-	-	-	403	
HCM Lane V/C Ratio	0.071	-	-	-	0.227	
HCM Control Delay (s)	8.4	0	-	-	16.5	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2040 Cumulative Year
PM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	270	13	12	353	53	12	5	6	45	5	87
Future Vol, veh/h	73	270	13	12	353	53	12	5	6	45	5	87
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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	293	14	13	384	58	13	5	7	49	5	95
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	442	0	0	307	0	0	947	926	300	874	875	384
Stage 1	-	-	-	-	-	-	458	458	-	410	410	-
Stage 2	-	-	-	-	-	-	489	468	-	464	465	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1118	-	-	1254	-	-	241	269	740	270	288	664
Stage 1	-	-	-	-	-	-	583	567	-	619	595	-
Stage 2	-	-	-	-	-	-	561	561	-	578	563	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1118	-	-	1254	-	-	191	247	740	247	265	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	191	247	-	247	265	-
Stage 1	-	-	-	-	-	-	542	527	-	575	589	-
Stage 2	-	-	-	-	-	-	472	555	-	527	523	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.2			20.1			15.6		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1SBLn2			
Capacity (veh/h)	191 388		1118	-	-	1254	-	-	247 614			
HCM Lane V/C Ratio	0.068 0.031		0.071	-	-	0.01	-	-	0.198 0.163			
HCM Control Delay (s)	25.2 14.6		8.5	-	-	7.9	-	-	23.1 12			
HCM Lane LOS	D B		A	-	-	A	-	-	C B			
HCM 95th %tile Q(veh)	0.2 0.1		0.2	-	-	0	-	-	0.7 0.6			

HCM 6th Signalized Intersection Summary 8: Airport Road & Rancho Road

2040 Cumulative Year
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	6	90	6	14	22	118	365	4	7	392	285
Future Volume (veh/h)	202	6	90	6	14	22	118	365	4	7	392	285
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	220	7	98	7	15	24	128	397	4	8	426	310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	204	173	10	113	168	222	1250	558	22	1044	466
Arrive On Green	0.15	0.11	0.11	0.01	0.06	0.06	0.06	0.35	0.35	0.01	0.29	0.29
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	220	7	98	7	15	24	128	397	4	8	426	310
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.4	0.2	2.7	0.2	0.3	0.4	1.6	3.7	0.1	0.1	4.4	7.8
Cycle Q Clear(g_c), s	5.4	0.2	2.7	0.2	0.3	0.4	1.6	3.7	0.1	0.1	4.4	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	204	173	10	113	168	222	1250	558	22	1044	466
V/C Ratio(X)	0.81	0.03	0.57	0.70	0.13	0.14	0.58	0.32	0.01	0.37	0.41	0.67
Avail Cap(c_a), veh/h	295	1403	1189	118	1403	2093	305	2047	913	229	1968	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	18.1	19.2	22.5	20.2	20.2	20.6	10.7	9.5	22.4	12.8	14.0
Incr Delay (d2), s/veh	14.1	0.1	2.9	63.1	0.5	0.4	2.3	0.1	0.0	9.9	0.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.1	1.0	0.2	0.2	0.1	0.7	1.2	0.0	0.1	1.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	18.1	22.1	85.6	20.7	20.6	22.9	10.9	9.5	32.3	13.1	15.7
LnGrp LOS	C	B	C	F	C	C	C	B	A	C	B	B
Approach Vol, veh/h		325			46			529			744	
Approach Delay, s/veh		29.2			30.5			13.8			14.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.8	22.3	8.3	10.9	6.4	19.7	10.4	8.7				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	26.1	3.0	34.0	4.0	25.1	7.5	34.0				
Max Q Clear Time (g_c+l1), s	2.1	5.7	2.2	4.7	3.6	9.8	7.4	2.4				
Green Ext Time (p_c), s	0.0	2.5	0.0	0.3	0.0	3.5	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary 9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

2040 Cumulative Year
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↱		↰	↱			↰	↱
Traffic Volume (veh/h)	0	0	0	63	0	48	276	711	0	0	432	311
Future Volume (veh/h)	0	0	0	63	0	48	276	711	0	0	432	311
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				68	0	52	300	773	0	0	470	338
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				161	0	144	389	2455	0	0	717	514
Arrive On Green				0.09	0.00	0.09	0.22	0.69	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	2070	1416
Grp Volume(v), veh/h				68	0	52	300	773	0	0	422	386
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1615
Q Serve(g_s), s				1.5	0.0	1.3	6.5	3.5	0.0	0.0	8.2	8.2
Cycle Q Clear(g_c), s				1.5	0.0	1.3	6.5	3.5	0.0	0.0	8.2	8.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.88
Lane Grp Cap(c), veh/h				161	0	144	389	2455	0	0	645	586
V/C Ratio(X)				0.42	0.00	0.36	0.77	0.31	0.00	0.00	0.65	0.66
Avail Cap(c_a), veh/h				783	0	697	1008	4566	0	0	1083	985
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				17.7	0.0	17.6	15.1	2.5	0.0	0.0	11.0	11.0
Incr Delay (d2), s/veh				1.7	0.0	1.5	3.3	0.1	0.0	0.0	1.1	1.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	0.5	2.5	0.3	0.0	0.0	2.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.4	0.0	19.1	18.4	2.6	0.0	0.0	12.1	12.2
LnGrp LOS				B	A	B	B	A	A	A	B	B
Approach Vol, veh/h				120			1073				808	
Approach Delay, s/veh				19.3			7.0				12.2	
Approach LOS				B			A				B	
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	32.9			13.5	19.4		8.2					
Change Period (Y+Rc), s	4.5			4.5	4.5		4.5					
Max Green Setting (Gmax), s	52.9			23.3	25.1		18.1					
Max Q Clear Time (g_c+I1), s	5.5			8.5	10.2		3.5					
Green Ext Time (p_c), s	6.5			0.8	4.7		0.3					
Intersection Summary												
HCM 6th Ctrl Delay				9.8								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary

12: Airport Road & Preserve Boulevard

2040 Cumulative Year
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	10	18	654	623	43
Future Volume (veh/h)	15	10	18	654	623	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	11	20	711	677	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	48	42	36	2023	1380	616
Arrive On Green	0.03	0.03	0.02	0.57	0.39	0.39
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	16	11	20	711	677	47
Grp Sat Flow(s), veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	0.3	0.2	0.3	3.4	4.5	0.6
Cycle Q Clear(g_c), s	0.3	0.2	0.3	3.4	4.5	0.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	48	42	36	2023	1380	616
V/C Ratio(X)	0.34	0.26	0.55	0.35	0.49	0.08
Avail Cap(c_a), veh/h	446	397	400	6793	5425	2420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	14.9	15.1	3.6	7.2	6.0
Incr Delay (d2), s/veh	4.1	3.2	12.3	0.1	0.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	0.2	0.2	0.4	1.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.0	18.1	27.5	3.7	7.5	6.1
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	27			731	724	
Approach Delay, s/veh	18.6			4.4	7.4	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	25.1			6.0	5.6	19.5
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	59.6			* 7.8	7.0	47.6
Max Q Clear Time (g_c+l1), s	5.4			2.3	2.3	6.5
Green Ext Time (p_c), s	5.9			0.0	0.0	5.6
Intersection Summary						
HCM 6th Ctrl Delay			6.1			
HCM 6th LOS			A			

Notes

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

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

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2040 Cumulative Year
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	17	141	11	22	6	59	231	6	44	465	38
Future Volume (veh/h)	63	17	141	11	22	6	59	231	6	44	465	38
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	68	18	153	12	24	7	64	251	7	48	505	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	444	305	259	422	305	259	189	1121	500	78	1082	483
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.05	0.32	0.32	0.04	0.30	0.30
Sat Flow, veh/h	1378	1870	1585	1214	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	68	18	153	12	24	7	64	251	7	48	505	41
Grp Sat Flow(s),veh/h/ln	1378	1870	1585	1214	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.4	0.3	2.8	0.3	0.3	0.1	0.5	1.6	0.1	0.8	3.5	0.6
Cycle Q Clear(g_c), s	1.7	0.3	2.8	0.5	0.3	0.1	0.5	1.6	0.1	0.8	3.5	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	444	305	259	422	305	259	189	1121	500	78	1082	483
V/C Ratio(X)	0.15	0.06	0.59	0.03	0.08	0.03	0.34	0.22	0.01	0.62	0.47	0.08
Avail Cap(c_a), veh/h	1509	1750	1483	1368	1762	1493	617	3925	1751	434	4156	1854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	10.9	11.9	11.1	10.9	10.8	14.0	7.8	7.2	14.5	8.7	7.6
Incr Delay (d2), s/veh	0.2	0.1	2.2	0.0	0.1	0.0	1.0	0.1	0.0	7.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.9	0.1	0.1	0.0	0.2	0.4	0.0	0.4	1.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	11.0	14.1	11.1	11.0	10.9	15.1	7.9	7.3	22.1	9.0	7.7
LnGrp LOS	B	B	B	B	B	B	B	A	A	C	A	A
Approach Vol, veh/h	239			43			322			594		
Approach Delay, s/veh	13.2			11.0			9.3			10.0		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	15.7		10.2	5.2	15.4		10.2				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	7.5	34.0		28.8	5.5	36.0		* 29				
Max Q Clear Time (g_c+I_2), s	12.8	3.6		4.8	2.5	5.5		2.5				
Green Ext Time (p_c), s	0.0	1.7		0.8	0.0	3.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay 10.5

HCM 6th LOS B

Notes

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

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

Appendix I

*Intersection Analysis Worksheets for
Cumulative Year (2040) Plus Project Conditions*

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	8575	8727	8649	8640	8720	8734	8896
Vehs Exited	8564	8753	8651	8639	8696	8749	8904
Starting Vehs	437	466	445	445	421	461	438
Ending Vehs	448	440	443	446	445	446	430
Travel Distance (mi)	9337	9489	9587	9423	9496	9508	9665
Travel Time (hr)	441.9	461.1	449.7	439.3	442.9	473.9	459.5
Total Delay (hr)	113.5	126.7	113.0	108.0	108.0	138.5	118.3
Total Stops	11692	12235	11850	11679	11640	11886	12038
Fuel Used (gal)	321.6	330.9	328.0	322.1	323.6	332.7	332.1

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	8673	8721	8817	8716
Vehs Exited	8700	8678	8864	8717
Starting Vehs	458	414	480	436
Ending Vehs	431	457	433	440
Travel Distance (mi)	9489	9310	9683	9499
Travel Time (hr)	461.3	432.5	485.2	454.7
Total Delay (hr)	127.5	104.3	144.0	120.2
Total Stops	12097	11357	12294	11875
Fuel Used (gal)	327.7	317.1	338.8	327.5

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2092	2201	2150	2115	2147	2263	2242
Vehs Exited	2108	2221	2125	2111	2112	2268	2249
Starting Vehs	437	466	445	445	421	461	438
Ending Vehs	421	446	470	449	456	456	431
Travel Distance (mi)	2311	2428	2413	2376	2331	2496	2412
Travel Time (hr)	111.8	112.9	111.6	108.6	107.8	115.5	120.7
Total Delay (hr)	30.2	27.6	26.5	25.3	25.7	27.6	35.8
Total Stops	2861	3023	2844	2733	2896	2935	3175
Fuel Used (gal)	80.0	83.4	82.6	80.3	79.2	85.4	84.9

Interval #1 Information

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2197	2194	2237	0
Vehs Exited	2185	2149	2269	0
Starting Vehs	458	414	480	0
Ending Vehs	470	459	448	0
Travel Distance (mi)	2438	2313	2512	0
Travel Time (hr)	119.7	106.8	119.0	0.0
Total Delay (hr)	33.8	24.9	30.5	0.0
Total Stops	3160	2792	3186	0
Fuel Used (gal)	84.7	78.1	86.1	0.0

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2222	2160	2156	2094	2155	2178	2248
Vehs Exited	2164	2137	2167	2128	2182	2202	2226
Starting Vehs	421	446	470	449	456	456	431
Ending Vehs	479	469	459	415	429	432	453
Travel Distance (mi)	2460	2330	2361	2419	2389	2361	2484
Travel Time (hr)	114.1	113.4	114.3	111.5	109.1	116.9	114.9
Total Delay (hr)	27.5	31.3	31.6	27.1	24.9	33.5	27.4
Total Stops	2945	3069	3049	2966	2750	2995	3003
Fuel Used (gal)	83.3	81.7	81.6	81.8	80.4	82.4	84.8

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2127	2193	2235	0
Vehs Exited	2166	2191	2223	0
Starting Vehs	470	459	448	0
Ending Vehs	431	461	460	0
Travel Distance (mi)	2343	2420	2370	0
Travel Time (hr)	112.2	114.1	119.3	0.0
Total Delay (hr)	29.7	29.1	36.1	0.0
Total Stops	2784	2974	3039	0
Fuel Used (gal)	80.1	82.6	83.2	0.0

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2192	2193	2143	2259	2210	2108	2135
Vehs Exited	2233	2202	2167	2227	2190	2100	2171
Starting Vehs	479	469	459	415	429	432	453
Ending Vehs	438	460	435	447	449	440	417
Travel Distance (mi)	2346	2418	2383	2372	2359	2326	2349
Travel Time (hr)	113.9	123.4	111.6	111.1	111.3	122.9	108.9
Total Delay (hr)	31.5	38.4	28.0	27.5	28.1	41.0	25.8
Total Stops	3095	3147	3043	2999	3007	2937	2798
Fuel Used (gal)	82.2	85.8	81.8	82.1	81.2	82.8	79.4

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2156	2168	2182	0
Vehs Exited	2139	2222	2135	0
Starting Vehs	431	461	460	0
Ending Vehs	448	407	507	0
Travel Distance (mi)	2309	2218	2380	0
Travel Time (hr)	111.7	102.7	124.7	0.0
Total Delay (hr)	30.2	24.5	40.9	0.0
Total Stops	2981	2745	2982	0
Fuel Used (gal)	79.7	75.8	83.9	0.0

SimTraffic Simulation Summary
AM Peak Hour

08/10/2021

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2069	2173	2200	2172	2208	2185	2271
Vehs Exited	2059	2193	2192	2173	2212	2179	2258
Starting Vehs	438	460	435	447	449	440	417
Ending Vehs	448	440	443	446	445	446	430
Travel Distance (mi)	2220	2313	2430	2256	2417	2325	2420
Travel Time (hr)	102.2	111.3	112.1	108.0	114.7	118.4	114.9
Total Delay (hr)	24.3	29.4	26.8	28.2	29.3	36.3	29.3
Total Stops	2791	2996	2914	2981	2987	3019	3062
Fuel Used (gal)	76.2	80.0	82.0	77.9	82.9	82.1	83.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2193	2166	2163	0
Vehs Exited	2210	2116	2237	0
Starting Vehs	448	407	507	0
Ending Vehs	431	457	433	0
Travel Distance (mi)	2399	2360	2420	0
Travel Time (hr)	117.8	108.9	122.1	0.0
Total Delay (hr)	33.8	25.8	36.5	0.0
Total Stops	3172	2846	3087	0
Fuel Used (gal)	83.2	80.7	85.6	0.0

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	4.3	2.6	0.0	0.0	0.1	0.0	0.0	7.1
Denied Del/Veh (s)	15.1	16.1	0.0	0.0	0.6	0.6	3.4	8.1
Total Delay (hr)	16.0	2.4	3.1	1.2	3.5	0.7	0.3	27.2
Total Del/Veh (s)	55.1	14.4	40.8	5.7	32.6	32.6	24.2	30.8
Stop Delay (hr)	13.1	1.8	2.9	0.6	2.8	0.5	0.3	22.1
Stop Del/Veh (s)	45.2	11.2	37.3	2.7	26.6	25.2	20.7	25.0

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.7	3.0	0.3
Total Delay (hr)	4.3	1.4	3.3	1.7	3.5	0.4	1.3	15.9
Total Del/Veh (s)	27.1	5.9	18.1	12.7	30.9	30.2	15.3	17.3
Stop Delay (hr)	3.5	0.6	2.6	1.5	3.1	0.3	1.2	12.8
Stop Del/Veh (s)	22.3	2.6	14.6	11.2	27.2	25.0	13.3	14.0

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.4	0.9
Denied Del/Veh (s)	0.0	0.0	0.0	1.4	1.5	1.3	0.1	0.1	3.4	3.5	1.3
Total Delay (hr)	5.2	0.6	0.0	0.0	5.7	0.7	0.7	0.0	0.7	1.6	15.3
Total Del/Veh (s)	36.1	4.2	1.7	44.7	29.4	9.2	150.6	6.7	35.8	14.3	22.0
Stop Delay (hr)	4.8	0.4	0.0	0.0	5.1	0.6	0.7	0.0	0.7	1.6	13.9
Stop Del/Veh (s)	33.2	2.7	1.2	42.4	26.5	8.1	149.2	7.3	34.2	13.9	20.1

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.3	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.9	3.4	0.0	0.1	0.0	0.0	0.8
Total Delay (hr)	1.3	0.7	1.8	0.2	0.4	1.5	5.8
Total Del/Veh (s)	17.5	7.8	10.7	3.5	30.3	10.3	10.9
Stop Delay (hr)	1.1	0.5	1.3	0.1	0.4	0.8	4.1
Stop Del/Veh (s)	14.5	5.6	7.7	2.3	25.3	5.3	7.6

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.3	4.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.6	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.3	0.0	1.6
Total Del/Veh (s)	35.2	28.4	4.2	24.3	5.2	8.6	1.6	1.4	6.4	1.5	1.0	2.8
Stop Delay (hr)	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Stop Del/Veh (s)	33.0	25.4	3.1	21.6	5.2	5.7	0.0	0.0	3.7	0.2	0.3	1.4

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0	0.0	0.1
Total Delay (hr)	0.0	0.1	0.8	0.0	0.1	0.6	1.5
Total Del/Veh (s)	13.6	4.2	5.3	5.6	8.4	4.2	4.9
Stop Delay (hr)	0.0	0.1	0.1	0.0	0.0	0.1	0.3
Stop Del/Veh (s)	11.5	3.6	0.5	0.3	3.6	0.9	1.0

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	NBL	NBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	1.6	0.7	0.3	0.1	4.5	0.3	2.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.1	0.1	0.1	0.0	2.6	0.1	1.4

15: Aviation Drive/Aviation & Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBT	EBR	NBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	2.3	1.1	1.0	3.9	2.8	1.8
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.4	0.4	0.4	2.4	2.4	1.1

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.7	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.1	0.0	0.3	0.0	0.0	1.9	0.1	0.4	0.7	0.0	3.7
Total Del/Veh (s)	23.4	3.6	21.1	4.2	42.8	12.3	8.7	22.0	6.0	1.9	11.0
Stop Delay (hr)	0.1	0.0	0.3	0.0	0.0	0.7	0.0	0.3	0.3	0.0	1.9
Stop Del/Veh (s)	21.7	3.9	19.7	4.8	29.9	4.7	1.6	17.5	2.8	0.8	5.7

Total Zone Performance

Denied Delay (hr)	8.8
Denied Del/Veh (s)	6.8
Total Delay (hr)	71.2
Total Del/Veh (s)	249.5
Stop Delay (hr)	56.0
Stop Del/Veh (s)	196.2

MOVEMENT SUMMARY

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 AM
Cumulative Year Plus Project (Site Folder: General)]**

Churn Creek Road
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total	HV]	[Total	HV]				[Veh.	Dist]				
		veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: Churn Creek Road														
3	L2	110	2.0	120	2.0	0.197	6.4	LOS A	0.9	21.7	0.55	0.50	0.55	19.9
8	T1	12	2.0	13	2.0	0.197	6.4	LOS A	0.9	21.7	0.55	0.50	0.55	29.8
18	R2	29	2.0	32	2.0	0.197	6.4	LOS A	0.9	21.7	0.55	0.50	0.55	28.3
Approach		151	2.0	164	2.0	0.197	6.4	LOS A	0.9	21.7	0.55	0.50	0.55	22.1
East: Rancho Road														
1	L2	53	2.0	58	2.0	0.491	8.7	LOS A	3.3	83.5	0.50	0.35	0.50	29.5
6	T1	412	2.0	448	2.0	0.491	8.7	LOS A	3.3	83.5	0.50	0.35	0.50	26.7
16	R2	45	2.0	49	2.0	0.491	8.7	LOS A	3.3	83.5	0.50	0.35	0.50	28.7
Approach		510	2.0	554	2.0	0.491	8.7	LOS A	3.3	83.5	0.50	0.35	0.50	27.3
North: Victor Avenue														
7	L2	58	2.0	63	2.0	0.468	11.9	LOS B	2.9	73.4	0.73	0.82	1.00	27.6
4	T1	10	2.0	11	2.0	0.468	11.9	LOS B	2.9	73.4	0.73	0.82	1.00	28.2
14	R2	236	2.0	257	2.0	0.468	11.9	LOS B	2.9	73.4	0.73	0.82	1.00	24.5
Approach		304	2.0	330	2.0	0.468	11.9	LOS B	2.9	73.4	0.73	0.82	1.00	25.3
West: Churn Creek Road														
5	L2	38	2.0	41	2.0	0.391	7.0	LOS A	2.4	60.1	0.39	0.23	0.39	28.7
2	T1	332	2.0	361	2.0	0.391	7.0	LOS A	2.4	60.1	0.39	0.23	0.39	27.8
12	R2	54	2.0	59	2.0	0.391	7.0	LOS A	2.4	60.1	0.39	0.23	0.39	27.5
Approach		424	2.0	461	2.0	0.391	7.0	LOS A	2.4	60.1	0.39	0.23	0.39	27.9
All Vehicles		1389	2.0	1510	2.0	0.491	8.6	LOS A	3.3	83.5	0.52	0.43	0.58	26.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:05:56 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

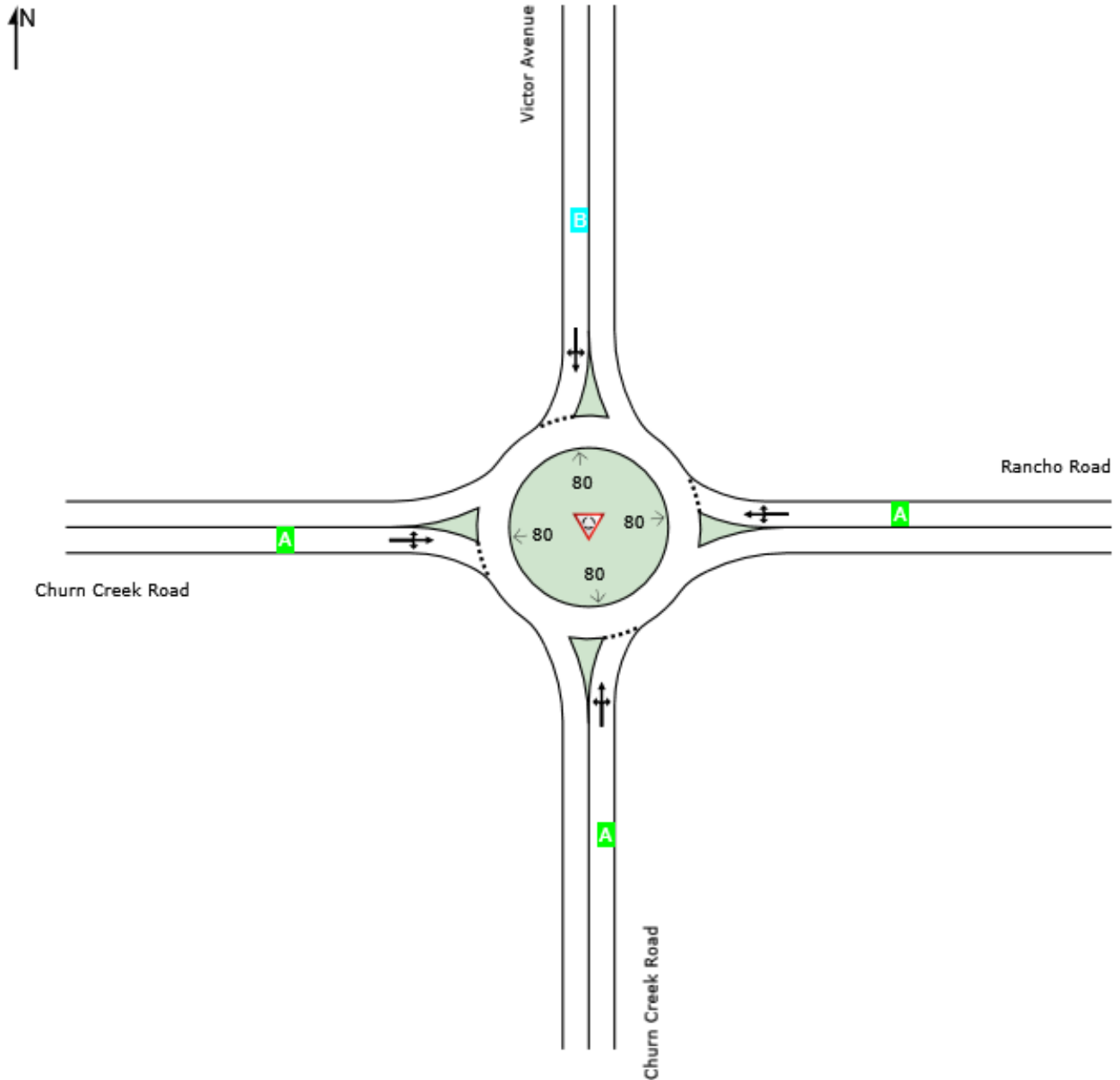
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 AM Cumulative Year Plus Project (Site Folder: General)]**

Churn Creek Road
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	B	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:05:56 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	406	435	12	74	94
Future Vol, veh/h	30	406	435	12	74	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	441	473	13	80	102
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	486	0	-	0	987	480
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	507	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1077	-	-	-	274	586
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	605	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1077	-	-	-	263	586
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	605	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		22.9		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1077	-	-	-	380	
HCM Lane V/C Ratio	0.03	-	-	-	0.481	
HCM Control Delay (s)	8.4	0	-	-	22.9	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	2.5	

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	509	0	2	184	39	23	5	6	46	5	147
Future Vol, veh/h	27	509	0	2	184	39	23	5	6	46	5	147
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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	553	0	2	200	42	25	5	7	50	5	160
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	242	0	0	553	0	0	919	857	553	821	815	200
Stage 1	-	-	-	-	-	-	611	611	-	204	204	-
Stage 2	-	-	-	-	-	-	308	246	-	617	611	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1324	-	-	1017	-	-	252	295	533	293	312	841
Stage 1	-	-	-	-	-	-	481	484	-	798	733	-
Stage 2	-	-	-	-	-	-	702	703	-	477	484	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1324	-	-	1017	-	-	198	288	533	280	305	841
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	288	-	280	305	-
Stage 1	-	-	-	-	-	-	470	473	-	780	732	-
Stage 2	-	-	-	-	-	-	563	702	-	456	473	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			22.2			13		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	198	384	1324	-	-	1017	-	-	280	795		
HCM Lane V/C Ratio	0.126	0.031	0.022	-	-	0.002	-	-	0.179	0.208		
HCM Control Delay (s)	25.8	14.7	7.8	-	-	8.5	-	-	20.6	10.7		
HCM Lane LOS	D	B	A	-	-	A	-	-	C	B		
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0	-	-	0.6	0.8		

HCM 6th Signalized Intersection Summary 8: Airport Road & Rancho Road

2040 Cumulative Year Plus Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	4	178	0	11	25	96	495	0	3	354	62
Future Volume (veh/h)	486	4	178	0	11	25	96	495	0	3	354	62
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	528	4	193	0	12	27	104	538	0	3	385	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	608	864	732	3	102	153	182	841	375	8	662	295
Arrive On Green	0.34	0.46	0.46	0.00	0.05	0.05	0.05	0.24	0.00	0.00	0.19	0.19
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	528	4	193	0	12	27	104	538	0	3	385	67
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	14.7	0.1	4.0	0.0	0.3	0.5	1.6	7.2	0.0	0.0	5.3	1.9
Cycle Q Clear(g_c), s	14.7	0.1	4.0	0.0	0.3	0.5	1.6	7.2	0.0	0.0	5.3	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	608	864	732	3	102	153	182	841	375	8	662	295
V/C Ratio(X)	0.87	0.00	0.26	0.00	0.12	0.18	0.57	0.64	0.00	0.35	0.58	0.23
Avail Cap(c_a), veh/h	922	1900	1610	101	1197	1785	254	1745	778	195	1685	752
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	7.7	8.8	0.0	23.9	24.0	24.6	18.3	0.0	26.5	19.7	18.4
Incr Delay (d2), s/veh	5.9	0.0	0.2	0.0	0.5	0.5	2.8	0.8	0.0	23.4	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	1.1	0.0	0.1	0.2	0.7	2.7	0.0	0.0	2.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	7.7	9.0	0.0	24.4	24.5	27.4	19.1	0.0	49.9	20.5	18.8
LnGrp LOS	C	A	A	A	C	C	C	B	A	D	C	B
Approach Vol, veh/h	725			39			642			455		
Approach Delay, s/veh	18.6			24.5			20.4			20.5		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	19.0	0.0	30.5	6.3	16.3	21.6	8.9				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	26.1	3.0	54.0	3.9	25.2	27.5	34.0				
Max Q Clear Time (g_c+I1), s	2.0	9.2	0.0	6.0	3.6	7.3	16.7	2.5				
Green Ext Time (p_c), s	0.0	3.3	0.0	0.7	0.0	2.6	1.4	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	19.8											
HCM 6th LOS	B											
Notes												

HCM 6th Signalized Intersection Summary

2040 Cumulative Year Plus Project

9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↷		↰	↷			↷	↰
Traffic Volume (veh/h)	0	0	0	120	0	78	277	625	0	0	447	377
Future Volume (veh/h)	0	0	0	120	0	78	277	625	0	0	447	377
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				130	0	85	301	679	0	0	486	410
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				211	0	188	381	2449	0	0	693	584
Arrive On Green				0.12	0.00	0.12	0.21	0.69	0.00	0.00	0.38	0.38
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	1922	1541
Grp Volume(v), veh/h				130	0	85	301	679	0	0	472	424
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1593
Q Serve(g_s), s				3.2	0.0	2.3	7.5	3.4	0.0	0.0	10.5	10.5
Cycle Q Clear(g_c), s				3.2	0.0	2.3	7.5	3.4	0.0	0.0	10.5	10.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.97
Lane Grp Cap(c), veh/h				211	0	188	381	2449	0	0	674	604
V/C Ratio(X)				0.62	0.00	0.45	0.79	0.28	0.00	0.00	0.70	0.70
Avail Cap(c_a), veh/h				689	0	614	827	4020	0	0	1015	910
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.6	0.0	19.2	17.4	2.8	0.0	0.0	12.3	12.3
Incr Delay (d2), s/veh				2.9	0.0	1.7	3.7	0.1	0.0	0.0	1.3	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.9	3.0	0.5	0.0	0.0	3.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.5	0.0	20.9	21.1	2.9	0.0	0.0	13.6	13.8
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h				215			980				896	
Approach Delay, s/veh				21.9			8.5				13.7	
Approach LOS				C			A				B	
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	36.7			14.5	22.2		10.0					
Change Period (Y+Rc), s	4.5			4.5	4.5		4.5					
Max Green Setting (Gmax), s	52.9			21.7	26.7		18.1					
Max Q Clear Time (g_c+I1), s	5.4			9.5	12.5		5.2					
Green Ext Time (p_c), s	5.5			0.7	5.2		0.7					
Intersection Summary												
HCM 6th Ctrl Delay				12.1								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 12: Airport Road & Preserve Boulevard

2040 Cumulative Year Plus Project
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	49	10	8	1004	518	18
Future Volume (veh/h)	49	10	8	1004	518	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	11	9	1091	563	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	96	85	17	2020	1454	648
Arrive On Green	0.05	0.05	0.01	0.57	0.41	0.41
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	53	11	9	1091	563	20
Grp Sat Flow(s), veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	1.0	0.2	0.2	6.4	3.7	0.3
Cycle Q Clear(g_c), s	1.0	0.2	0.2	6.4	3.7	0.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	96	85	17	2020	1454	648
V/C Ratio(X)	0.55	0.13	0.53	0.54	0.39	0.03
Avail Cap(c_a), veh/h	684	608	427	5818	4433	1977
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	15.0	16.4	4.5	6.9	5.9
Incr Delay (d2), s/veh	4.9	0.7	22.9	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.2	0.9	0.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.3	15.7	39.3	4.7	7.1	5.9
LnGrp LOS	C	B	D	A	A	A
Approach Vol, veh/h	64			1100	583	
Approach Delay, s/veh	19.5			5.0	7.0	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	26.4			7.0	5.3	21.0
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	54.6			* 13	8.0	41.6
Max Q Clear Time (g_c+l1), s	8.4			3.0	2.2	5.7
Green Ext Time (p_c), s	10.6			0.1	0.0	4.4

Intersection Summary

HCM 6th Ctrl Delay 6.2
HCM 6th LOS A

Notes

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

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

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2040 Cumulative Year Plus Project
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	5	33	0	1	2	251	556	8	5	282	80
Future Volume (veh/h)	43	5	33	0	1	2	251	556	8	5	282	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	5	36	0	1	2	273	604	9	5	307	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	137	116	268	137	116	483	1332	594	10	854	381
Arrive On Green	0.07	0.07	0.07	0.00	0.07	0.07	0.14	0.37	0.37	0.01	0.24	0.24
Sat Flow, veh/h	1414	1870	1585	1366	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	47	5	36	0	1	2	273	604	9	5	307	87
Grp Sat Flow(s),veh/h/ln	1414	1870	1585	1366	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.9	0.1	0.6	0.0	0.0	0.0	2.0	3.4	0.1	0.1	1.9	1.2
Cycle Q Clear(g_c), s	0.9	0.1	0.6	0.0	0.0	0.0	2.0	3.4	0.1	0.1	1.9	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	137	116	268	137	116	483	1332	594	10	854	381
V/C Ratio(X)	0.13	0.04	0.31	0.00	0.01	0.02	0.56	0.45	0.02	0.51	0.36	0.23
Avail Cap(c_a), veh/h	1738	1947	1650	1599	1961	1661	1002	5059	2257	265	4557	2033
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	11.6	11.8	0.0	11.6	11.6	10.8	6.3	5.3	13.3	8.5	8.2
Incr Delay (d2), s/veh	0.2	0.1	1.5	0.0	0.0	0.1	1.0	0.2	0.0	36.4	0.3	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	0.2	0.0	0.2	0.0	0.0	0.0	0.6	0.7	0.0	0.1	0.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	11.7	13.3	0.0	11.6	11.6	11.8	6.6	5.3	49.7	8.8	8.5
LnGrp LOS	B	B	B	A	B	B	B	A	A	D	A	A
Approach Vol, veh/h	88			3			886			399		
Approach Delay, s/veh	12.6			11.6			8.2			9.2		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	16.1		7.2	7.3	12.5		7.2				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	38.3			28.0	7.8	34.5		* 28				
Max Q Clear Time (g_c+I_2), s	5.4			2.9	4.0	3.9		2.0				
Green Ext Time (p_c), s	0.0	4.6		0.2	0.3	2.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay 8.8
HCM 6th LOS A

Notes

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

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

HCM 6th TWSC
19: Aviation Drive & Northern Project Driveway

2040 Cumulative Year Plus Project
AM Peak Hour

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	46	23	9	24	12
Future Vol, veh/h	17	46	23	9	24	12
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	50	25	10	26	13
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	95	30	0	0	35	0
Stage 1	30	-	-	-	-	-
Stage 2	65	-	-	-	-	-
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	905	1044	-	-	1576	-
Stage 1	993	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	890	1044	-	-	1576	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.9	0		4.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 997		1576	-	
HCM Lane V/C Ratio	-	- 0.069		0.017	-	
HCM Control Delay (s)	-	- 8.9		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.2		0.1	-	

Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	23	9	17	12	17
Future Vol, veh/h	33	23	9	17	12	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	25	10	18	13	18
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	63	19	0	0	28	0
Stage 1	19	-	-	-	-	-
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	943	1059	-	-	1585	-
Stage 1	1004	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	935	1059	-	-	1585	-
Mov Cap-2 Maneuver	935	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.9	0	3			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	982	1585	-	
HCM Lane V/C Ratio	-	-	0.062	0.008	-	
HCM Control Delay (s)	-	-	8.9	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

SimTraffic Simulation Summary
PM Peak Hour

08/10/2021

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	7815	7908	7751	7738	7780	7766	7868
Vehs Exited	7822	7931	7711	7739	7803	7712	7876
Starting Vehs	379	441	380	385	411	364	395
Ending Vehs	372	418	420	384	388	418	387
Travel Distance (mi)	8882	9073	8810	8832	8902	9114	9054
Travel Time (hr)	400.4	420.0	403.3	406.4	407.7	413.0	410.2
Total Delay (hr)	89.2	100.7	94.0	96.5	94.6	92.9	92.8
Total Stops	9854	10664	10126	10337	10240	10094	10084
Fuel Used (gal)	296.7	308.0	297.7	299.1	301.6	305.5	305.6

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	7798	7877	7695	7795
Vehs Exited	7786	7877	7702	7794
Starting Vehs	388	407	401	390
Ending Vehs	400	407	394	388
Travel Distance (mi)	8842	9022	8751	8928
Travel Time (hr)	404.3	412.6	400.3	407.8
Total Delay (hr)	93.9	94.8	92.6	94.2
Total Stops	10026	10538	10035	10199
Fuel Used (gal)	298.7	305.9	297.5	301.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

SimTraffic Simulation Summary
PM Peak Hour

08/10/2021

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1980	1934	1977	1898	1963	1942	1941
Vehs Exited	1938	1983	1951	1901	1968	1922	1929
Starting Vehs	379	441	380	385	411	364	395
Ending Vehs	421	392	406	382	406	384	407
Travel Distance (mi)	2236	2221	2215	2222	2268	2262	2298
Travel Time (hr)	100.7	102.8	100.4	99.2	104.5	102.3	101.7
Total Delay (hr)	22.4	24.5	22.8	21.6	24.8	22.8	21.3
Total Stops	2493	2703	2540	2436	2675	2499	2386
Fuel Used (gal)	74.8	75.6	74.9	74.3	77.3	75.7	77.1

Interval #1 Information

Start Time 7:00
End Time 7:15
Total Time (min) 15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1997	1972	2011	1956
Vehs Exited	1963	1978	1999	1952
Starting Vehs	388	407	401	390
Ending Vehs	422	401	413	396
Travel Distance (mi)	2289	2278	2308	2260
Travel Time (hr)	105.6	104.2	107.4	102.9
Total Delay (hr)	25.0	23.7	26.5	23.5
Total Stops	2676	2683	2786	2586
Fuel Used (gal)	77.9	77.4	79.8	76.5

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1969	1998	1884	1998	1913	1989	1969
Vehs Exited	1988	1985	1897	1984	1924	1977	1958
Starting Vehs	421	392	406	382	406	384	407
Ending Vehs	402	405	393	396	395	396	418
Travel Distance (mi)	2325	2295	2164	2269	2194	2230	2246
Travel Time (hr)	104.7	106.4	98.6	106.3	99.3	101.3	102.4
Total Delay (hr)	23.3	25.2	22.6	26.7	22.0	23.1	23.8
Total Stops	2488	2700	2428	2779	2512	2584	2604
Fuel Used (gal)	77.3	78.0	72.6	77.5	73.9	75.5	75.1

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1880	2034	1880	0
Vehs Exited	1936	2003	1926	0
Starting Vehs	422	401	413	0
Ending Vehs	366	432	367	0
Travel Distance (mi)	2098	2293	2123	0
Travel Time (hr)	96.8	104.7	97.7	0.0
Total Delay (hr)	23.3	23.9	23.1	0.0
Total Stops	2444	2619	2337	0
Fuel Used (gal)	71.4	77.9	72.1	0.0

SimTraffic Simulation Summary
PM Peak Hour

08/10/2021

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1930	1963	1945	1899	1948	1895	2012
Vehs Exited	1949	1954	1984	1905	1928	1836	1992
Starting Vehs	402	405	393	396	395	396	418
Ending Vehs	383	414	354	390	415	455	438
Travel Distance (mi)	2193	2227	2205	2164	2164	2302	2281
Travel Time (hr)	98.5	102.9	102.4	99.9	100.5	104.3	105.4
Total Delay (hr)	21.6	24.8	24.9	23.8	24.3	23.3	25.1
Total Stops	2426	2566	2592	2554	2480	2491	2663
Fuel Used (gal)	73.1	75.7	75.0	73.0	73.7	76.9	78.2

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1940	1928	1886	0
Vehs Exited	1910	1959	1870	0
Starting Vehs	366	432	367	0
Ending Vehs	396	401	383	0
Travel Distance (mi)	2272	2246	2139	0
Travel Time (hr)	102.6	102.7	95.5	0.0
Total Delay (hr)	22.7	24.0	20.3	0.0
Total Stops	2453	2686	2348	0
Fuel Used (gal)	76.1	75.6	71.9	0.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1936	2013	1945	1943	1956	1940	1946
Vehs Exited	1947	2009	1879	1949	1983	1977	1997
Starting Vehs	383	414	354	390	415	455	438
Ending Vehs	372	418	420	384	388	418	387
Travel Distance (mi)	2127	2330	2226	2176	2277	2321	2228
Travel Time (hr)	96.6	107.9	102.0	100.9	103.4	105.1	100.7
Total Delay (hr)	21.9	26.1	23.7	24.5	23.4	23.7	22.5
Total Stops	2447	2695	2566	2568	2573	2520	2431
Fuel Used (gal)	71.5	78.6	75.2	74.3	76.7	77.4	75.2

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1981	1943	1918	0
Vehs Exited	1977	1937	1907	0
Starting Vehs	396	401	383	0
Ending Vehs	400	407	394	0
Travel Distance (mi)	2182	2205	2181	0
Travel Time (hr)	99.4	100.9	99.7	0.0
Total Delay (hr)	22.8	23.3	22.7	0.0
Total Stops	2453	2550	2564	0
Fuel Used (gal)	73.4	75.1	73.7	0.0

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Bonnyview Road Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	0.6	2.3	0.0	0.0	0.2	0.3	3.4	0.5
Total Delay (hr)	7.3	0.5	2.6	1.1	1.3	0.1	0.0	12.9
Total Del/Veh (s)	23.0	5.9	32.5	5.8	37.6	39.1	32.0	18.1
Stop Delay (hr)	5.1	0.5	2.4	0.6	1.2	0.1	0.0	9.8
Stop Del/Veh (s)	16.1	5.4	29.1	3.0	34.3	34.2	30.9	13.7

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & Bonnyview Road Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.7	3.3	0.4
Total Delay (hr)	5.6	1.1	5.1	1.1	2.3	0.4	1.6	17.2
Total Del/Veh (s)	37.8	4.6	20.6	11.6	31.9	32.3	19.2	19.1
Stop Delay (hr)	4.9	0.4	4.3	1.0	2.1	0.3	1.5	14.4
Stop Del/Veh (s)	33.0	1.5	17.2	10.8	28.7	28.0	17.2	16.0

3: Churn Creek Road & Bonnyview Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.8
Denied Del/Veh (s)	0.0	0.0	0.0	1.6	0.3	0.2	0.1	0.1	3.4	3.3	1.0
Total Delay (hr)	4.3	2.7	0.0	0.1	4.8	0.4	2.1	0.0	1.7	2.7	18.7
Total Del/Veh (s)	33.1	13.6	2.3	53.9	29.5	8.0	621.0	14.5	38.5	15.3	24.4
Stop Delay (hr)	3.9	2.1	0.0	0.1	4.3	0.3	2.1	0.0	1.6	2.5	16.9
Stop Del/Veh (s)	29.9	10.8	1.2	51.4	26.5	7.4	619.6	15.1	36.4	14.1	22.1

10: Airport Road & SR-44 EB Off-Ramp/SR-44 EB On-Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.5
Denied Del/Veh (s)	1.9	1.9	3.3	0.0	0.1	0.0	0.0	0.9
Total Delay (hr)	1.9	0.0	0.5	2.2	0.2	0.5	1.2	6.4
Total Del/Veh (s)	17.4	18.5	6.7	12.3	4.2	29.4	9.8	11.9
Stop Delay (hr)	1.5	0.0	0.4	1.6	0.1	0.4	0.7	4.7
Stop Del/Veh (s)	14.0	14.2	4.6	9.1	2.8	24.8	5.4	8.6

11: Airport Road & Hartnell Avenue Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.3	4.0	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.4	0.0	0.0	0.1	0.1	0.4	0.0	0.0	0.2	0.0	1.3
Total Del/Veh (s)	24.8	3.6	21.5	5.1	7.1	2.3	1.6	5.2	1.4	1.1	2.9
Stop Delay (hr)	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.5
Stop Del/Veh (s)	22.7	2.9	18.0	4.8	4.0	0.0	0.0	2.8	0.2	0.3	1.3

13: Airport Road & Electro Way Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.9	0.0	0.0	0.1
Total Delay (hr)	0.0	0.1	0.6	0.0	0.1	0.6	1.4
Total Del/Veh (s)	12.0	4.1	4.5	3.5	8.0	4.5	4.7
Stop Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.1	0.3
Stop Del/Veh (s)	10.4	3.7	0.4	0.3	2.9	0.9	0.9

14: Aviation Drive & Electro Way Performance by movement

Movement	EBL	EBT	EBR	WBT	NBL	NBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.8	0.5	0.3	0.0	4.3	0.2	1.7
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.2	0.2	0.1	0.0	2.6	0.1	0.9

15: Aviation Drive/Aviation & Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBT	EBR	NBL	NBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.1	0.1	0.2	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Total Del/Veh (s)	1.7	0.6	0.3	4.6	3.5	2.8	3.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.2	0.2	0.2	2.6	2.6	2.5	1.8

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.6	0.1	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.0	0.0	0.2	0.0	0.1	0.1	1.1	0.0	0.0	1.2	0.0
Total Del/Veh (s)	17.4	12.0	3.2	19.6	0.7	4.3	22.1	11.3	5.9	23.1	9.3	3.8
Stop Delay (hr)	0.1	0.0	0.0	0.2	0.0	0.1	0.1	0.5	0.0	0.0	0.6	0.0
Stop Del/Veh (s)	15.9	9.4	3.5	18.0	0.3	4.6	16.8	4.8	1.2	18.4	4.9	1.4

16: Airport Road & Shasta View Drive/Mill Lane/Shasta View Drive Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	2.8
Total Del/Veh (s)	10.2
Stop Delay (hr)	1.5
Stop Del/Veh (s)	5.5

Total Zone Performance

Denied Delay (hr)	2.1
Denied Del/Veh (s)	1.6
Total Delay (hr)	60.9
Total Del/Veh (s)	529.8
Stop Delay (hr)	48.2
Stop Del/Veh (s)	418.8

MOVEMENT SUMMARY

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 PM]**
Cumulative Year Plus Project (Site Folder: General)]

Churn Creek Road
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total	HV]	[Total	HV]				[Veh.	Dist]				
		veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: Churn Creek Road														
3	L2	98	2.0	107	2.0	0.311	9.0	LOS A	1.4	34.8	0.66	0.66	0.66	19.3
8	T1	19	2.0	21	2.0	0.311	9.0	LOS A	1.4	34.8	0.66	0.66	0.66	29.0
18	R2	83	2.0	90	2.0	0.311	9.0	LOS A	1.4	34.8	0.66	0.66	0.66	27.5
Approach		200	2.0	217	2.0	0.311	9.0	LOS A	1.4	34.8	0.66	0.66	0.66	23.4
East: Rancho Road														
1	L2	38	2.0	41	2.0	0.443	8.5	LOS A	2.6	66.4	0.56	0.44	0.56	29.7
6	T1	322	2.0	350	2.0	0.443	8.5	LOS A	2.6	66.4	0.56	0.44	0.56	26.9
16	R2	60	2.0	65	2.0	0.443	8.5	LOS A	2.6	66.4	0.56	0.44	0.56	28.8
Approach		420	2.0	457	2.0	0.443	8.5	LOS A	2.6	66.4	0.56	0.44	0.56	27.5
North: Victor Avenue														
7	L2	56	2.0	61	2.0	0.296	7.8	LOS A	1.4	34.5	0.61	0.58	0.61	29.7
4	T1	24	2.0	26	2.0	0.296	7.8	LOS A	1.4	34.5	0.61	0.58	0.61	30.2
14	R2	139	2.0	151	2.0	0.296	7.8	LOS A	1.4	34.5	0.61	0.58	0.61	26.6
Approach		219	2.0	238	2.0	0.296	7.8	LOS A	1.4	34.5	0.61	0.58	0.61	27.9
West: Churn Creek Road														
5	L2	123	2.0	134	2.0	0.640	11.5	LOS B	5.7	145.4	0.56	0.36	0.56	25.6
2	T1	403	2.0	438	2.0	0.640	11.5	LOS B	5.7	145.4	0.56	0.36	0.56	24.5
12	R2	171	2.0	186	2.0	0.640	11.5	LOS B	5.7	145.4	0.56	0.36	0.56	24.6
Approach		697	2.0	758	2.0	0.640	11.5	LOS B	5.7	145.4	0.56	0.36	0.56	24.7
All Vehicles		1536	2.0	1670	2.0	0.640	9.8	LOS A	5.7	145.4	0.58	0.45	0.58	25.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:06:26 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

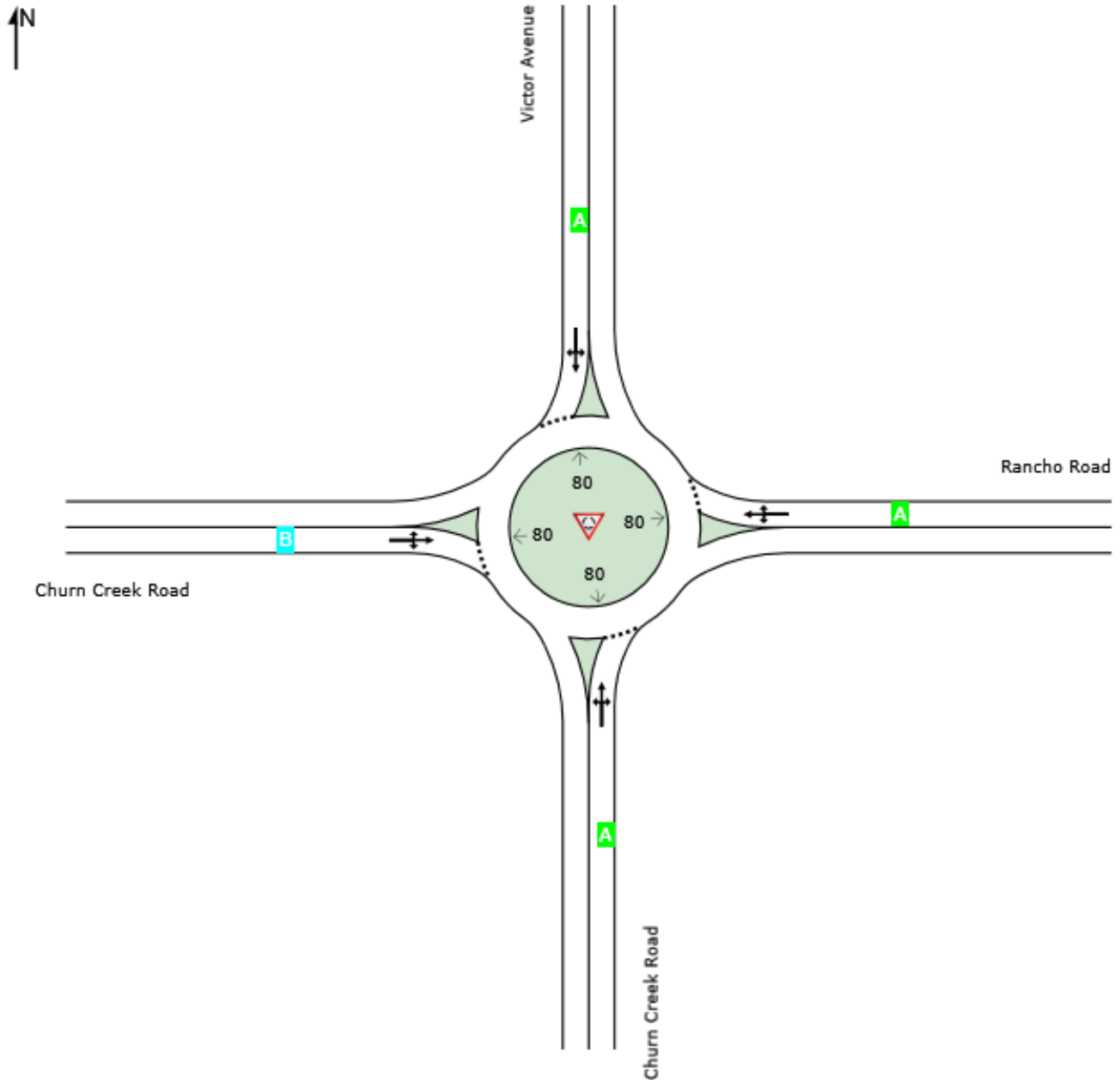
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 101 [Bonnyview Rd/Churn Creek Rd/Victor Ave - 2040 PM**
Cumulative Year Plus Project (Site Folder: General)]

Churn Creek Road
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: KIMLEY-HORN & ASSOCIATES INC | Licence: NETWORK / Enterprise | Processed: Tuesday, August 10, 2021 4:06:26 PM

Project: K:\SAC_TPTO\Redding Distribution Center LTA & VMT - 097401002\03 Analysis Files\Sidra Files\Bonnyview Rd & Churn Creek Rd & Victor Ave Roundabout.sip9

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	506	375	39	25	60
Future Vol, veh/h	74	506	375	39	25	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	550	408	42	27	65
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	450	0	-	0	1139	429
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	710	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1110	-	-	-	223	626
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	487	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1110	-	-	-	200	626
Mov Cap-2 Maneuver	-	-	-	-	200	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	487	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		17.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1110	-	-	-	385	
HCM Lane V/C Ratio	0.072	-	-	-	0.24	
HCM Control Delay (s)	8.5	0	-	-	17.3	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

HCM 6th TWSC
7: Shasta View Drive & Rancho Road

2040 Cumulative Year Plus Project
PM Peak Hour

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	283	13	12	368	55	12	5	6	46	5	87
Future Vol, veh/h	73	283	13	12	368	55	12	5	6	46	5	87
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	300	-	-	225	-	225	175	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	308	14	13	400	60	13	5	7	50	5	95
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	460	0	0	322	0	0	979	959	315	905	906	400
Stage 1	-	-	-	-	-	-	473	473	-	426	426	-
Stage 2	-	-	-	-	-	-	506	486	-	479	480	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1101	-	-	1238	-	-	229	257	725	257	276	650
Stage 1	-	-	-	-	-	-	572	558	-	606	586	-
Stage 2	-	-	-	-	-	-	549	551	-	568	554	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1101	-	-	1238	-	-	180	236	725	235	253	650
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	236	-	235	253	-
Stage 1	-	-	-	-	-	-	531	518	-	562	580	-
Stage 2	-	-	-	-	-	-	460	545	-	517	514	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.2			21.1			16.3		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1SBLn2			
Capacity (veh/h)	180 373		1101	-	-	1238	-	-	235 599			
HCM Lane V/C Ratio	0.072 0.032		0.072	-	-	0.011	-	-	0.213 0.167			
HCM Control Delay (s)	26.6 15		8.5	-	-	7.9	-	-	24.4 12.2			
HCM Lane LOS	D C		A	-	-	A	-	-	C B			
HCM 95th %tile Q(veh)	0.2 0.1		0.2	-	-	0	-	-	0.8 0.6			

HCM 6th Signalized Intersection Summary 8: Airport Road & Rancho Road

2040 Cumulative Year Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	6	104	6	14	22	134	379	4	7	404	285
Future Volume (veh/h)	202	6	104	6	14	22	134	379	4	7	404	285
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	220	7	113	7	15	24	146	412	4	8	439	310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	220	187	10	126	187	246	1269	566	22	1038	463
Arrive On Green	0.15	0.12	0.12	0.01	0.07	0.07	0.07	0.36	0.36	0.01	0.29	0.29
Sat Flow, veh/h	1781	1870	1585	1781	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	220	7	113	7	15	24	146	412	4	8	439	310
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.6	0.2	3.2	0.2	0.4	0.4	1.9	3.9	0.1	0.1	4.6	8.0
Cycle Q Clear(g_c), s	5.6	0.2	3.2	0.2	0.4	0.4	1.9	3.9	0.1	0.1	4.6	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	220	187	10	126	187	246	1269	566	22	1038	463
V/C Ratio(X)	0.81	0.03	0.61	0.70	0.12	0.13	0.59	0.32	0.01	0.37	0.42	0.67
Avail Cap(c_a), veh/h	287	1365	1157	115	1365	2036	297	1991	888	223	1915	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	18.2	19.5	23.1	20.4	20.4	21.0	10.9	9.6	23.0	13.3	14.5
Incr Delay (d2), s/veh	15.0	0.1	3.1	63.3	0.4	0.3	2.3	0.1	0.0	9.9	0.3	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.1	1.2	0.2	0.2	0.1	0.8	1.3	0.0	0.1	1.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	18.3	22.7	86.4	20.9	20.7	23.2	11.0	9.7	32.9	13.6	16.2
LnGrp LOS	C	B	C	F	C	C	C	B	A	C	B	B
Approach Vol, veh/h		340			46			562			757	
Approach Delay, s/veh		30.0			30.8			14.2			14.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.8	23.0	8.3	11.5	6.8	20.0	10.6	9.1				
Change Period (Y+Rc), s	3.5	6.4	8.0	6.0	3.5	6.4	3.5	6.0				
Max Green Setting (Gmax), s	3.0	26.1	3.0	34.0	4.0	25.1	7.5	34.0				
Max Q Clear Time (g_c+I1), s	2.1	5.9	2.2	5.2	3.9	10.0	7.6	2.4				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.4	0.0	3.6	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			18.1									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary

2040 Cumulative Year Plus Project

9: Airport Road & SR-44 WB On-Ramp/SR-44 WB Off-Ramp

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↱		↰	↱			↱	↰
Traffic Volume (veh/h)	0	0	0	68	0	48	284	713	0	0	433	311
Future Volume (veh/h)	0	0	0	68	0	48	284	713	0	0	433	311
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				74	0	52	309	775	0	0	471	338
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				164	0	146	398	2461	0	0	714	511
Arrive On Green				0.09	0.00	0.09	0.22	0.69	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1781	0	1585	1781	3647	0	0	2072	1415
Grp Volume(v), veh/h				74	0	52	309	775	0	0	423	386
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1781	1777	0	0	1777	1616
Q Serve(g_s), s				1.6	0.0	1.3	6.8	3.6	0.0	0.0	8.3	8.4
Cycle Q Clear(g_c), s				1.6	0.0	1.3	6.8	3.6	0.0	0.0	8.3	8.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.88
Lane Grp Cap(c), veh/h				164	0	146	398	2461	0	0	642	584
V/C Ratio(X)				0.45	0.00	0.36	0.78	0.31	0.00	0.00	0.66	0.66
Avail Cap(c_a), veh/h				772	0	687	994	4502	0	0	1068	971
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				18.0	0.0	17.8	15.2	2.5	0.0	0.0	11.2	11.2
Incr Delay (d2), s/veh				1.9	0.0	1.5	3.3	0.1	0.0	0.0	1.2	1.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.7	0.0	0.5	2.7	0.4	0.0	0.0	2.7	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.9	0.0	19.3	18.5	2.6	0.0	0.0	12.3	12.5
LnGrp LOS				B	A	B	B	A	A	A	B	B
Approach Vol, veh/h				126			1084				809	
Approach Delay, s/veh				19.6			7.1				12.4	
Approach LOS				B			A				B	
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	33.4			13.8	19.6		8.3					
Change Period (Y+Rc), s	4.5			4.5	4.5		4.5					
Max Green Setting (Gmax), s	52.9			23.3	25.1		18.1					
Max Q Clear Time (g_c+I1), s	5.6			8.8	10.4		3.6					
Green Ext Time (p_c), s	6.6			0.8	4.7		0.4					
Intersection Summary												
HCM 6th Ctrl Delay				10.0								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 12: Airport Road & Preserve Boulevard

2040 Cumulative Year Plus Project
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	10	18	668	635	43
Future Volume (veh/h)	15	10	18	668	635	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	11	20	726	690	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	48	42	36	2034	1396	623
Arrive On Green	0.03	0.03	0.02	0.57	0.39	0.39
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	16	11	20	726	690	47
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	0.3	0.2	0.3	3.5	4.6	0.6
Cycle Q Clear(g_c), s	0.3	0.2	0.3	3.5	4.6	0.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	48	42	36	2034	1396	623
V/C Ratio(X)	0.34	0.26	0.55	0.36	0.49	0.08
Avail Cap(c_a), veh/h	442	393	397	6739	5382	2400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	15.0	15.3	3.6	7.2	6.0
Incr Delay (d2), s/veh	4.1	3.2	12.4	0.1	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.4	1.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.1	18.2	27.6	3.7	7.5	6.0
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	27			746	737	
Approach Delay, s/veh	18.7			4.4	7.4	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	25.4			6.0	5.6	19.8
Change Period (Y+Rc), s	7.4			* 5.2	5.0	7.4
Max Green Setting (Gmax), s	59.6			* 7.8	7.0	47.6
Max Q Clear Time (g_c+l1), s	5.5			2.3	2.3	6.6
Green Ext Time (p_c), s	6.1			0.0	0.0	5.8
Intersection Summary						
HCM 6th Ctrl Delay			6.1			
HCM 6th LOS			A			

Notes

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

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

HCM 6th Signalized Intersection Summary

17: Airport Road & Knighton Road

2040 Cumulative Year Plus Project

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	17	141	11	22	6	59	243	6	44	479	46
Future Volume (veh/h)	70	17	141	11	22	6	59	243	6	44	479	46
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	76	18	153	12	24	7	64	264	7	48	521	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	442	307	260	420	307	260	189	1142	509	78	1103	492
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.05	0.32	0.32	0.04	0.31	0.31
Sat Flow, veh/h	1378	1870	1585	1214	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	76	18	153	12	24	7	64	264	7	48	521	50
Grp Sat Flow(s),veh/h/ln	1378	1870	1585	1214	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.5	0.3	2.8	0.3	0.3	0.1	0.6	1.7	0.1	0.8	3.7	0.7
Cycle Q Clear(g_c), s	1.9	0.3	2.8	0.5	0.3	0.1	0.6	1.7	0.1	0.8	3.7	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	442	307	260	420	307	260	189	1142	509	78	1103	492
V/C Ratio(X)	0.17	0.06	0.59	0.03	0.08	0.03	0.34	0.23	0.01	0.62	0.47	0.10
Avail Cap(c_a), veh/h	1487	1725	1462	1349	1737	1472	609	3870	1726	428	4098	1828
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	11.0	12.1	11.2	11.0	11.0	14.2	7.8	7.2	14.7	8.7	7.7
Incr Delay (d2), s/veh	0.2	0.1	2.1	0.0	0.1	0.0	1.1	0.1	0.0	7.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	0.9	0.1	0.1	0.0	0.2	0.4	0.0	0.4	1.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	11.1	14.2	11.3	11.2	11.0	15.3	7.9	7.2	22.4	9.0	7.8
LnGrp LOS	B	B	B	B	B	B	B	A	A	C	A	A
Approach Vol, veh/h	247			43			335			619		
Approach Delay, s/veh	13.3			11.2			9.3			10.0		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	16.0		10.3	5.2	15.7		10.3				
Change Period (Y+Rc), s	3.5	6.0		5.2	3.5	6.0		* 5.2				
Max Green Setting (Gmax), s	7.5	34.0		28.8	5.5	36.0		* 29				
Max Q Clear Time (g_c+I), s	12.8	3.7		4.8	2.6	5.7		2.5				
Green Ext Time (p_c), s	0.0	1.8		0.8	0.0	4.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay 10.5

HCM 6th LOS B

Notes

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

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

HCM 6th TWSC
19: Aviation Drive & Northern Project Driveway

2040 Cumulative Year Plus Project
PM Peak Hour

Intersection						
Int Delay, s/veh	5.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	20	10	7	18	9
Future Vol, veh/h	8	20	10	7	18	9
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	22	11	8	20	10
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	65	15	0	0	19	0
Stage 1	15	-	-	-	-	-
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	941	1065	-	-	1597	-
Stage 1	1008	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	929	1065	-	-	1597	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		4.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	1022	1597	-	
HCM Lane V/C Ratio	-	-	0.03	0.012	-	
HCM Control Delay (s)	-	-	8.6	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection						
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	10	7	13	9	8
Future Vol, veh/h	15	10	7	13	9	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	11	8	14	10	9
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	44	15	0	0	22	0
Stage 1	15	-	-	-	-	-
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	967	1065	-	-	1593	-
Stage 1	1008	-	-	-	-	-
Stage 2	994	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	961	1065	-	-	1593	-
Mov Cap-2 Maneuver	961	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		3.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1000		1593	-	
HCM Lane V/C Ratio	-	- 0.027		0.006	-	
HCM Control Delay (s)	-	- 8.7		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	

Appendix J

Roadway Segment Analysis Worksheets

Segment ID	Roadway	From	To	2021/22 Type ID	2040 Type ID	2021 Lane	2022 Lane	2040 Lane	2021 Volume	2021/Lane	2021 LOS	2021 V/C	2022 Volume	2022/Lane	2022 LOS	2022 V/C	2022PP Vol	2022PP/Lan	2022PP LO	2022PP V/C	2040 Volume	2040/Lane	2040 LOS	2040 V/C	2040PP Vol	2040PP/Lan	2040PP LO	2040PP V/C	0.04	Road Type	Road Type
1	Churn Creek Rd	S Bonnyview Rd	Victor Ave	4	4	2	2	2	1348	674	E	1.10	1448.5	724	E	1.19	1496.5	748	E	1.23	2305	1153	E	1.89	2353	1177	E	1.93	0.04	Road Type	Road Type
		Churn Creek Rd	Alta Mesa Dr	4	4	2	4	4	714.5	357	A	0.59	820.5	205	A	0.34	870.5	218	A	0.36	880	220	A	0.36	905	226	A	0.37	0.02	1	Expressway-High Access Control
2	Rancho Rd	Alta Mesa Dr	Shasta View Dr	4	4	2	4	4	687.5	344	A	0.56	807	202	A	0.33	859.5	215	A	0.35	1701	425	B	0.70	1753.5	438	B	0.72	0.02	2	Expressway-Moderate Access Control
		Shasta View Dr	Airport Rd	4	4	2	4	4	653	327	A	0.54	697.5	174	A	0.29	754	189	A	0.31	1680.5	420	B	0.69	1737	434	B	0.71	0.02	3	Divided Arterial (w/ LTL)
		SR-44 WB Ramp	SR-44 EB Ramp	4	3	2	4	4	1195	598	D	0.98	1226	307	A	0.50	1254.5	314	A	0.51	2585.5	646	C	0.88	2614	654	D	0.90	0.01	4	Undivided Arterial (no LTL)
		SR-44 EB Ramp	Hartnell Ave	4	3	2	4	4	1360.5	680	E	1.11	1396	349	A	0.57	1444.5	361	A	0.59	3990	998	E	1.37	4038.5	1010	E	1.38	0.02	5	Collector
3	Airport Rd	Hartnell Ave	Preserve Blvd	4	3	2	4	4	1294.5	647	E	1.06	1322.5	331	A	0.54	1370.5	343	A	0.56	3262	816	E	1.12	3310	828	E	1.13	0.02		
		Preserve Blvd	Electro Way	4	3	2	4	4	1067	534	C	0.88	1091	273	A	0.45	1166.5	292	A	0.48	2624.5	656	D	0.90	2700	675	D	0.92	0.03		
		Electro Way	Shasta View Dr	4	3	2	4	4	414.5	207	A	0.34	426.5	107	A	0.18	464	116	A	0.19	985	246	A	0.34	985	246	A	0.34	0.01		
		Shasta View Dr	Knighon Rd	4	3	2	4	4	8	4	A	0.01	1	0	A	0.00	89	22	A	0.04	1	0	A	0.00	90	23	A	0.03	0.04		

Segment ID	Roadway	From	To	2021/22 Type ID	2040 Type ID	2021Lanes	2022Lanes	2040Lanes	2021 Volume	2021/Lane	2021 LOS	2021 V/C	2022 Volume	2022/Lane	2022 LOS	2022 V/C	2022PP Vol	2022PP/Lan	2022PP LOS	2022PP V/C	2040 Volume	2040/Lane	2040 LOS	2040 V/C	2040PP Vol	2040PP/Lan	2040PP LOS	2040PP V/C	0.02	Road Type	Road Type
1	Churn Creek Rd	S Bonnyview Rd	Victor Ave	4	4	2	2	2	1572.5	786 E		1.29	1701.5	851 E		1.40	1727.5	864 E		1.42	2508.5	1254 E		2.06	2534.5	1267 E		2.08	0.02	Road Type	Road Type
		Churn Creek Rd	Alta Mesa Dr	4	4	2	4	4	742	371 A		0.61	881	220 A		0.36	909	227 A		0.37	924	231 A		0.38	938	235 A		0.39	0.01	1	Expressway-High Access Control
2	Rancho Rd	Alta Mesa Dr	Shasta View Dr	4	4	2	4	4	680.5	340 A		0.56	833	208 A		0.34	862	216 A		0.35	1722.5	431 B		0.71	1751.5	438 B		0.72	0.01	2	Expressway-Moderate Access Control
		Shasta View Dr	Airport Rd	4	4	2	4	4	629	315 A		0.52	683.5	171 A		0.28	714	179 A		0.29	1670.5	418 B		0.69	1701	425 B		0.70	0.01	3	Divided Arterial (w/ LTL)
		SR-44 WB Ramp	SR-44 EB Ramp	4	3	2	4	4	1195	598 D		0.98	1222.5	306 A		0.50	1238	310 A		0.51	3174.5	794 E		1.09	3190	798 E		1.09	0.01	4	Undivided Arterial (no LTL)
		SR-44 EB Ramp	Hartnell Ave	4	3	2	4	4	1360.5	680 E		1.11	1272	318 A		0.52	1299	325 A		0.53	3926.5	982 E		1.35	3953.5	988 E		1.35	0.01	5	Collector
3	Airport Rd	Hartnell Ave	Preserve Blvd	4	3	2	4	4	1182	591 D		0.97	1150	288 A		0.47	1176	294 A		0.48	3144.5	786 E		1.08	3170.5	793 E		1.09	0.01		
		Preserve Blvd	Electro Way	4	3	2	4	4	968	484 C		0.79	998	250 A		0.41	1039	260 A		0.43	2538.5	635 C		0.87	2579.5	645 C		0.88	0.02		
		Electro Way	Shasta View Dr	4	3	2	4	4	414.5	207 A		0.34	428	107 A		0.18	448.5	112 A		0.18	968	242 A		0.33	968	242 A		0.33	0.01		
		Shasta View Dr	Knighthon Rd	4	3	2	4	4	8	4 A		0.01	1	0 A		0.00	48.5	12 A		0.02	1	0 A		0.00	49.5	12 A		0.02	0.02		