

# Conceptual Drainage Study

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Lompa Ranch East

*Prepared for*

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## Acronyms and Abbreviations

BFE	base flood elevation
BMP	best management practice
CN	curve number
cfs	cubic feet per second
cu ft	cubic feet
FEMA	Flood Emergency Management Agency
FIRM	Flood Insurance Rate Map
fps	feet per second
ft	feet
H:V	horizontal to vertical slope
HEC-HMS	Hydrologic Engineering Center – Hydrologic Modeling System
HEC-RAS	Hydrologic Engineering Center – River Analysis System
mi <sup>2</sup>	square miles
NDOT	Nevada Department of Transportation
NOAA	National Oceanic and Atmospheric Administration
NRCS	National Resource Conservation Service
RCB	Reinforced Concrete Box
RCP	Reinforced Concrete Pipe
SCS	Soil Conservation Service
SFHA	Special Flood Hazard Area
SSA	Storm and Sanitary Analysis
Tc	Time of concentration
Terraphase	Terraphase Engineering Inc.
TDS	Technical Drainage Study
USDA	United States Department of Agriculture
USGS	United States Geological Survey



# Signatures

All engineering information, conclusions, and recommendations in this document have been prepared under the responsible charge of a Nevada Professional Engineer.



A handwritten signature in black ink, appearing to read "Mark W. Gookin".

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Mark Gookin, PE, Principal Engineer

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October 3, 2022

# Executive Summary

The Lompa Ranch Apartments Conceptual Drainage Study addresses drainage impacts for the Lompa Ranch Apartments project. This multi-family residential project is proposed on two properties (010-740-03 and 010-741-02). Both of these project properties are within Carson City jurisdiction. The contributing drainage areas generally drain in the south direction toward Kings Canyon Creek. The project is bounded on the east by Airport Road and on the west by Interstate 580. To the north is undeveloped land and to the south is an NDOT property with water quality basins. Most of the contributing drainage area is single- or multi-family residential development with some undeveloped land of desert shrub vegetation in fair condition.

## Complicating Drainage Issues

There is an existing ephemeral ditch onsite, considered to be waters of the United States, which collects runoff from adjacent developments. The ditch flows through the site, beginning north of the project and discharging to the south. The proposed project includes two road crossings which will require grading and improvements within the ditch. These improvements were granted Section 404 reverification in 2022.

## Conclusion

Peak flow impacts associated with the Lompa Ranch Apartments project are insignificant relative to the upstream watersheds which discharge to the same common confluence as the project. Floodplain impacts associated with the project can be mitigated based on hydraulically equivalent excavation within the floodplain.



# 1 Introduction

Terraphase has prepared this Conceptual Drainage Study in accordance with the Carson City Drainage Manual for submittal with the Lompa Ranch Apartments Special Use Permit application. The proposed project includes 306 multi-family units, a clubhouse/amenity area, open space, and off-street parking on 23.95 acres along Lompa Lane in Carson City, Nevada. The project affects the following Carson City Assessor parcels:

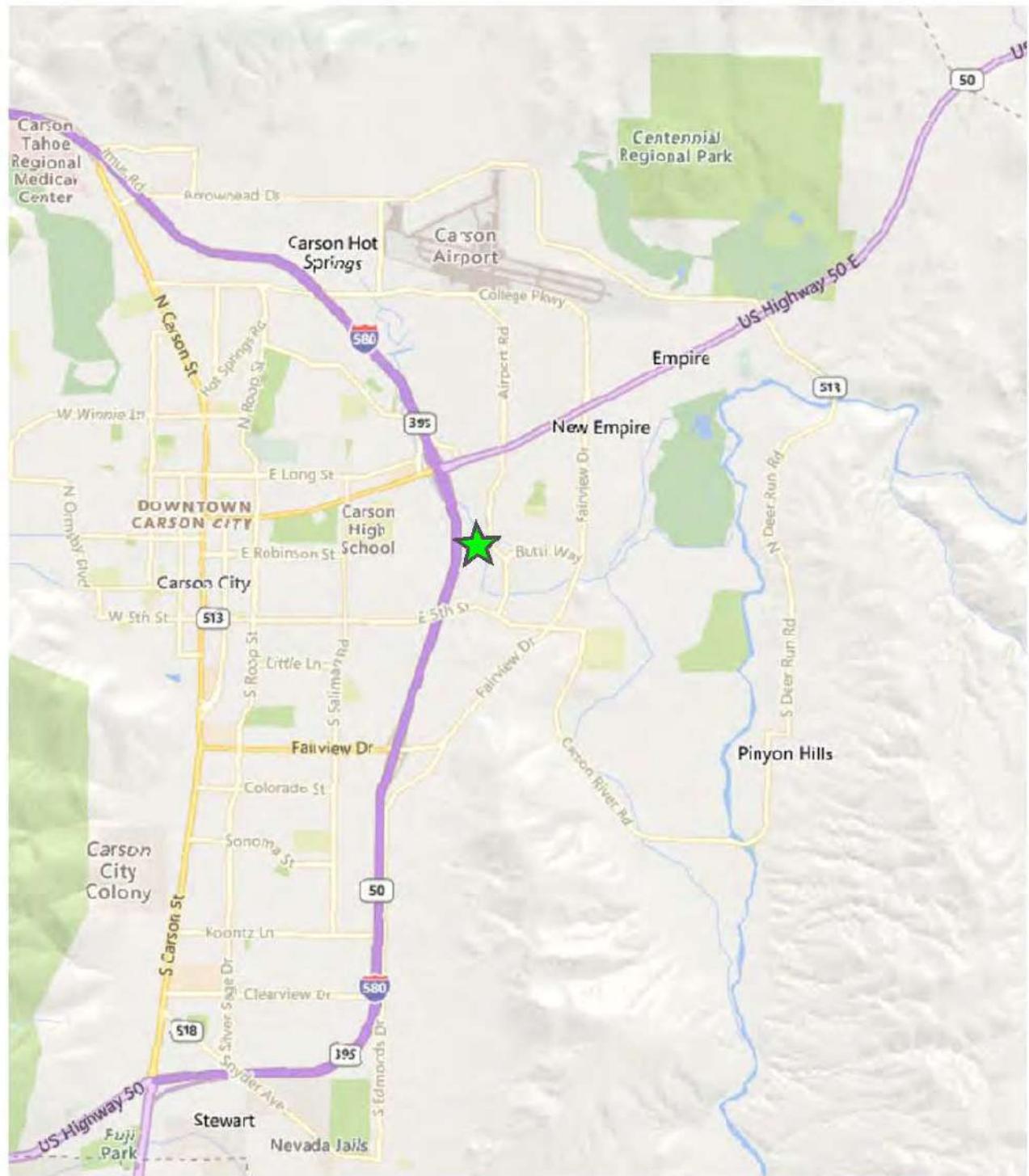
- 010-741-03
- 010-741-02

The project site is located within the New Empire, Nevada quadrangle within Sections 15 and 16, Township 15, Range 20. The site is bounded by improved and unimproved land as follows:

- North – vacant undeveloped land, multi-family development, commercial development, and highway 50
- East – single-family development
- South – multi-use trail, vacant undeveloped land, and NDOT water quality basins
- West – multi-use trail, interstate 580, and vacant undeveloped land

Figures 1 and 2 are Location and Vicinity Maps.





0 2,500 5,000 10,000  
1 inch = 5,000 feet



LEGEND



SITE LOCATION

SAFETY FIRST	CLIENT: TANAMERA CONSTRUCTION LLC	LOMPA RANCH APARTMENTS LOCATION MAP
PROJECT: LOMPA RANCH	PROJECT NUMBER: N014.001	FIGURE 1
terraphas engineering		



**SAFETY FIRST**

CLIENT:  
TANAMERA CONSTRUCTION LLC

LOMPA RANCH  
VICINITY MAP

PROJECT:  
LOMPA RANCH

PROJECT NUMBER:  
N014.001



FIGURE 2

## 1.1 Project Description

The proposed project is a 23.95-acre multi-family development. The development plan includes 360 multi-family units in 14 buildings, a clubhouse/amenity area, open space, and approximately 8.6 acres of new paving for streets and off-street parking. The total amount of new impervious surface is approximately 13.6 acres. Lompa Lane will be extended to the South on the west side of the site then to the east through the middle of the site with a connection to Desatoya Drive.

## 1.2 Site Description

The existing site is undeveloped with a predominant land cover of desert shrub in fair condition and slopes ranging from 0.1% to 6%, generally in the north to south direction toward Kings Canyon Creek. There is no existing storm drain network onsite. There is an existing ephemeral ditch which receives storm drain discharge from the adjacent multi-family and single-family developments. The site is bordered to the south by a multi-use trail which acts as a berm and three culverts which convey water from the site under the trail to the NDOT water quality basins.

# 2 Existing and Proposed Hydrology

The Carson City Drainage Manual requires that “downstream properties shall not be unreasonably burdened with increased flow rates, negative impacts, or unreasonable changes in the manner of flow from upstream properties”. However, “In certain circumstances, i.e., close to the drainage system’s point of discharge, it may be desirable not to detain stormwater runoff.”

Carson City Municipal Code requires that “whenever any portion of a floodplain is authorized for use, the space occupied by the authorized fill or structure below the base flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation.”

The following sections describe the methods and results used to determine the required drainage mitigation for this project which include peak flows, floodplain displacement, water quality, and impacts to waters of the United States.

## 2.1 Hydrologic Methodology

For determination of 100-year, 24-hour peak flows from offsite contributing drainage areas, the HEC-HMS computer simulation was employed. The following describes the required parameters employed in the model. Refer to Appendix A for the precipitation data, calculations of area, curve number, lag time, and model output.

The following methods and types were used:

- Loss Method for the subbasins: SCS Curve Number
- Transform Method for the subbasins: SCS Unit Hydrograph



- Baseflow Method for the subbasins: None
- Routing Method for the reaches: Lag
- Initial Type for the Reaches: Discharge = Inflow
- Precipitation Method for the Meteorologic Models: Frequency Storm

The following assumptions were made:

- The initial abstraction defines the amount of precipitation that must fall before surface runoff results. The initial abstraction input value was left blank and was automatically calculated as 0.2 times the potential retention, which is calculated from the curve number.
- The baseflow is the portion of the streamflow that is sustained between precipitation events and was assumed to be 0 cfs.
- The frequency storm data used in the model are NOAA Atlas 14 Precipitation-Depth-duration-Frequency curves.
- The intensity duration specifies the shortest time period of the storm and was assumed to be 5-min.
- The intensity position determines when in the storm the period of peak intensity will occur and was assumed to be 50%.
- The time interval in the control specification is the time interval used to perform calculations during a simulation and defined as 5-min.
- It is assumed that there is no additional run-on, and sources were not added to the basin model.

### ***Curve Number***

The curve number (CN) is a hydrologic parameter that characterizes the runoff properties for a particular soil and ground cover. The area of each subwatershed or watershed was divided into subareas based on the Hydrologic Soil Group and existing or proposed ground cover. Hydrologic Soil Groups were based on maps from the United States Department of Agriculture (USDA) Natural Resources Conservation Services Soil Survey. Existing ground cover was based on aerial photography and a site visit. Proposed ground cover was based on project improvement plans.

### ***Lag Time***

The lag time, TLAG, was calculated based time of concentration using the following relationship:

$$\mathbf{TLAG = 0.6t_c}$$

The time of concentration,  $t_c$ , was calculated using the following relationship:

$$\mathbf{t_c = t_i + t_t}$$

Where:  $t_i$  = initial overland time  
 $t_t$  = concentrated travel time

The initial overland time,  $t_i$ , was calculated using the following relationship, or a minimum of 10-min:

$$\mathbf{t_i = \{1.8(1.1-R)L_0^{1/2}\}/S^{1/3}}$$

Where:  $R = 0.0132CN - 0.39$   
 $L_0$  = overland length



**S** = slope in percentage

The concentrated travel time,  $t_t$ , was calculated using the following relationship:

$$t_t = L/V$$

Where: **L** = concentrated travel length  
**V** = velocity

The velocity, **V**, is in feet per second and was calculated using the following relationships:

$$V = 20.328 * S^{1/2} \text{ (for pavement and small upland gullies)}$$

$$V = 16.135 * S^{1/2} \text{ (for grassed waterways)}$$

Where: **S** = slope in ft/ft

## 2.2 Existing Drainage Characteristics

The project site is approximately 2,000-feet upstream of the confluence of Goni Canyon Creek and Kings Canyon Creek. Directly downstream of the project site are NDOT water quality basins. Carson City GIS layers for flowlines, storm drains, culverts, and channels were used to determine the contributing drainage area intercepted by the site. The contributing drainage area is 196 acres of commercial development, residential development, open space, and undeveloped land south of US-50, east of I-580, and north of the bike path, and within the Empire Area watershed. Refer to Figure 4, attached, for existing watershed map.

The lengths of Kings Canyon Creek and Goni Canyon Creek from their headwaters to their confluence downstream of the project site are at least 6-miles each, as shown in Figure 5, attached. The length of the contributing drainage area to the project is 6,540-feet, which is no more than 18% of the lengths of the larger watersheds and located no more than 5% upstream of their confluence. The timing of the Goni Canyon Creek peak flow in the downstream NDOT water quality basins and of the peak flow at the confluence will be significantly later than the timing of the peak flow from the existing or proposed conditions of the site. Therefore, including local detention of peak flows generated by the site would put the local flow peak more in sync with the larger Kings Canyon Creek and Goni Canyon Creek peak flows. In view of this geographic position close to the drainage system's point of discharge, local detention is not recommended for this project.

USDA NRCS Hydrologic Soil Groups of the contributing drainage area are shown in Figure 6 and are primarily type C or not rated. Surrounding soil types are also type C, so type C was used for unrated areas. Existing land use is shown in Figure 7.

## 2.3 Proposed Drainage Characteristics

The contributing drainage area boundary will not change with the proposed project. The proposed peak flows increase due to change in land use. Proposed land use is shown in Figure 8. Table 1 lists the existing and proposed peak flows from 10-year/24-hour and 100-year/24-hour storm events.



Table 1 Peak Flow Results

Condition	10-year, 24-hour Peak Flow (cfs)	100-year, 24-hour Peak Flow (cfs)
Existing	55	59
Proposed	126	131

## 2.4 Floodplain

The majority of the proposed project site is within a Federal Emergency Management Agency (FEMA) mapped Special Flood Hazard Area (SFHA), Zone AE. AE zones are within the 1% annual chance floodplain with established Base Flood Elevations (BFEs). The SFHAs on and adjacent to the project site are shown in Figure 3. The BFEs onsite range from 4628.5-ft to 4628.7-ft. The proposed finished floor elevation of all 14 buildings is 4630.7, all being at least two feet above the BFEs, which complies with Carson City Municipal code.

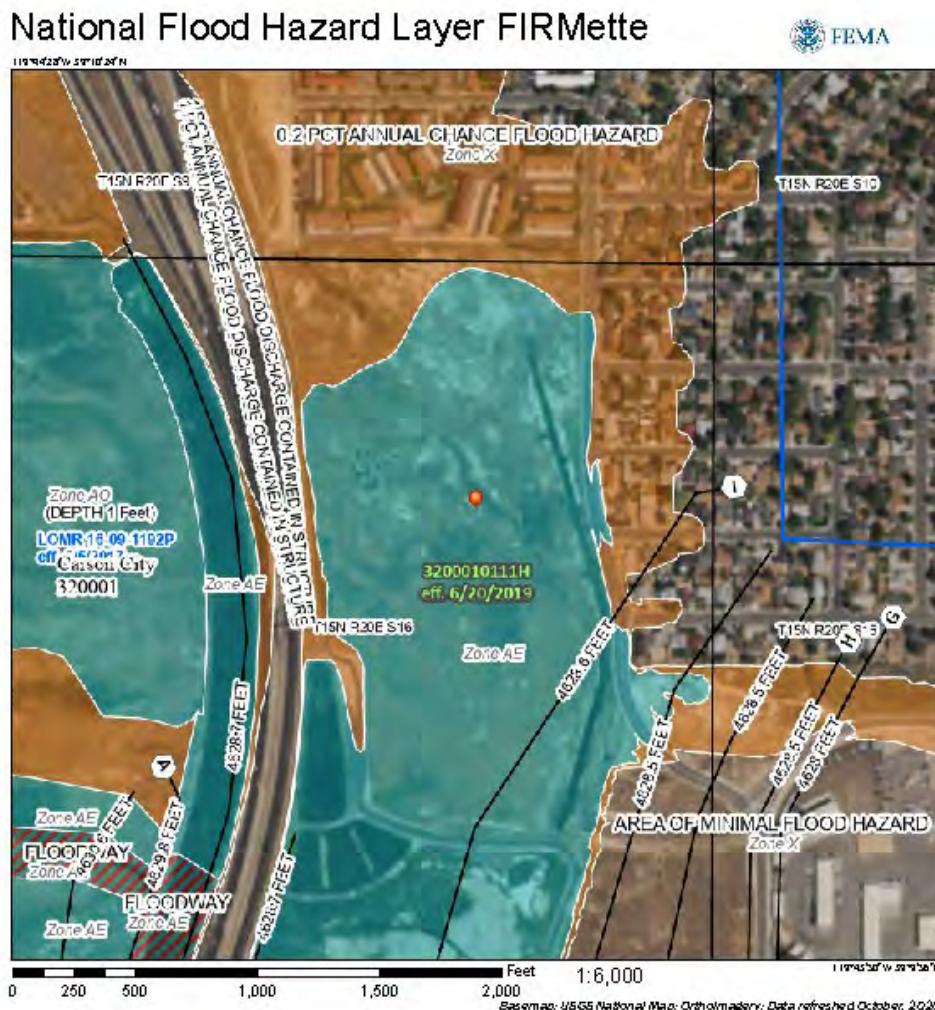


Figure 3: Lompa Ranch Apartments FIRMette

Carson City requires that proposed fill within the floodplain be mitigated by the same volume of excavation within the floodplain. Civil 3D volume surface analysis was used to determine the cut and fill volumes within the floodplain by subtracting the cut in the floodplain and the fill above the floodplain from the total project fill. The resulting required floodplain volume mitigation is 29.6-ac-ft. Various sites within the floodplain and watershed directly related to the project site are being considered for offsite floodplain volume mitigation. These include localized onsite depressions, the onsite park area, adjacent park sites, City owned properties, and NDOT owned properties.

## 2.5 Waters of the United States

The ephemeral ditch which runs from north to south on the east side of the project property is considered by the Army Corps of Engineers to be waters of the United States and subject to Section 404 of the Clean Water Act. The proposed project includes two road crossings, one at Desatoya Drive and another between parking for buildings 13 and 14 which will require placement of two 30-inch diameter concrete pipes, backfill, and riprap below the ordinary high-water mark. A previous version of the project was granted 404 approval and reverification was granted in 2022. These approvals require compliance with all terms and conditions of the Nationwide Permit Number (NWP) 29, Residential Developments.

The project is also subject to Section 401 of the Clean Water Act, requiring certification that the proposed work will not violate state water quality standards. A previous version of the project was granted 401 Water Quality Certification in 2018, which requires photo documentation and compliance with all conditions of the Temporary Authorization to Discharge (Working in Waterways permit).

# 3 Erosion and Sediment Control Measures

Carson City requires that development “control the quality of stormwater leaving the site to the maximum extent practicable” by implementing Low Impact Development (LID) Best Management Practices (BMPs) “in the site drainage plans to permanently control the quality of runoff from the developed or redeveloped site.” LID design considerations include minimizing directly connected impervious areas and lengthening drainage flow paths. The grading plan for the Special Use Permit application is preliminary. The existing site is relatively flat which will allow for straightforward incorporation of LID in final design.

According to the Carson City Drainage Manual, “flow based post-construction water quality controls shall be designed to capture and treat the flow rate for the 2-year runoff event from the drainage area connected to the BMP. Volume based post-construction water quality controls shall be designed to provide adequate storage to capture and treat 90 percent of the average annual stormwater runoff events.”

The final project design will include:

- Disconnected roof drains that direct flows to vegetated areas or dry wells
- Directing flows from the parking lot to stabilized vegetated areas
- Encouraging sheet flow through vegetated areas
- Increase and lengthen flow paths
- Maximize use of open swale systems.

## 4 Proposed Drainage Facilities

The proposed project does not include off-site drainage facilities. The onsite drainage facilities are described in this section.

### 4.1 Flow Routing

Offsite flow will be intercepted by the site in three locations. In the northwest corner of the site, runoff from existing North Lompa Lane will be collected in catch basins within proposed North Lompa Lane and conveyed through the site in storm drain which discharges onsite, south of building 11. Along the northern property line, runoff from the upstream undeveloped property which sheet flows toward the site will be collected in a cut-off ditch which discharges to the ephemeral ditch on the east side of the site. The ephemeral ditch will also continue to collect runoff from adjacent developments which discharge into the ditch. Onsite runoff will sheet flow toward designated low points where it will remain disconnected and be discharged to natural ground or be collected in catch basins and routed through storm drain. Refer to Figure 9, attached, for Proposed Drainage Map.

### 4.2 Drainage Facilities

The west side of the site will include a storm drain network which collects runoff from North Lompa Lane and the western parking bays. The storm drain network will discharge in the southwest corner of the site, downstream of all proposed development. The ephemeral ditch will remain unchanged with the exception of two road crossings which will require culverts.

### 4.3 Downstream Analysis

Directly downstream of the site are NDOT water quality basins serving Goni Creek. The NDOT basins outlet approximately 1,000 feet upstream of the confluence of Goni Creek and Kings Canyon Creek. Kings Canyon Creek then flows east for approximately 4,500 feet toward the Carson River. The capacity of Goni Creek, Kings Canyon Creek, and the Carson River are not likely to be affected by the 7% increase in peak flow from the proposed development produced by the proposed project, due in large part to the low location of the site in the Goni Creek and Kings Canyon Creek watersheds. The project peak flow will pass through the downstream areas earlier than the Goni Creek or Kings Canyon peak flows.

## 4.4 Stormwater Quantity and Quality Mitigation

Stormwater Quantity detention is not necessary for this project due to its relative position within the watershed. Stormwater quality mitigation will be achieved through LID BMPs designed during the building permit process.

## 4.5 Operation and Maintenance

Onsite drainage facilities will be maintained by the property owner. There are no offsite drainage facilities.

## 4.6 Floodplain Modifications

Floodplain displacement due to the proposed project fill will be offset by hydraulically equivalent excavation within the floodplain. This mitigation will ensure no floodplain modifications.

# 5 Conclusions

## 5.1 Compliance with Carson City Standards

The Lompa Ranch Apartments project complies with the Carson City Drainage Manual, Carson City Municipal Code, and Carson City Development Standards.

## 5.2 Compliance with FEMA

The Lompa Ranch Apartments project complies with FEMA standards.

## 5.3 Off-site Effects

The Lompa Ranch Apartments project will not cause any adverse effects to adjacent properties.

## 5.4 Necessary Implementation Measures

There are no necessary implementation measures for the Lompa Ranch Apartments project.

# Appendix A

## HEC-HMS Calculations





**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Carson City, Nevada, USA\***  
**Latitude: 39.1688°, Longitude: -119.736°**  
**Elevation: 4626.95 ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



### POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

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

#### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.094 (0.081-0.111)	0.117 (0.102-0.139)	0.157 (0.135-0.187)	0.195 (0.166-0.232)	0.258 (0.212-0.306)	0.315 (0.251-0.377)	0.383 (0.296-0.463)	0.465 (0.344-0.570)	0.594 (0.415-0.745)	0.710 (0.473-0.906)
10-min	0.144 (0.123-0.169)	0.179 (0.155-0.212)	0.239 (0.205-0.284)	0.297 (0.253-0.353)	0.392 (0.323-0.466)	0.479 (0.382-0.573)	0.583 (0.450-0.704)	0.707 (0.524-0.868)	0.904 (0.632-1.13)	1.08 (0.720-1.38)
15-min	0.178 (0.153-0.210)	0.222 (0.192-0.263)	0.296 (0.254-0.352)	0.368 (0.313-0.437)	0.486 (0.400-0.578)	0.594 (0.474-0.710)	0.723 (0.558-0.873)	0.877 (0.649-1.08)	1.12 (0.783-1.41)	1.34 (0.892-1.71)
30-min	0.240 (0.206-0.283)	0.299 (0.259-0.354)	0.399 (0.342-0.475)	0.496 (0.422-0.589)	0.654 (0.539-0.778)	0.800 (0.639-0.957)	0.974 (0.751-1.18)	1.18 (0.874-1.45)	1.51 (1.05-1.89)	1.81 (1.20-2.30)
60-min	0.297 (0.255-0.350)	0.370 (0.320-0.439)	0.494 (0.423-0.587)	0.613 (0.522-0.729)	0.810 (0.667-0.963)	0.990 (0.790-1.18)	1.21 (0.930-1.46)	1.46 (1.08-1.79)	1.87 (1.31-2.34)	2.23 (1.49-2.85)
2-hr	0.403 (0.358-0.462)	0.499 (0.443-0.573)	0.638 (0.562-0.730)	0.760 (0.663-0.870)	0.946 (0.803-1.09)	1.11 (0.922-1.29)	1.30 (1.05-1.52)	1.52 (1.19-1.81)	1.91 (1.43-2.37)	2.27 (1.64-2.88)
3-hr	0.481 (0.430-0.542)	0.599 (0.539-0.678)	0.754 (0.671-0.850)	0.879 (0.777-0.990)	1.06 (0.920-1.20)	1.21 (1.03-1.39)	1.38 (1.16-1.60)	1.60 (1.31-1.88)	1.96 (1.55-2.39)	2.30 (1.78-2.91)
6-hr	0.663 (0.594-0.741)	0.827 (0.743-0.929)	1.03 (0.919-1.15)	1.19 (1.06-1.33)	1.41 (1.23-1.58)	1.58 (1.36-1.79)	1.75 (1.49-2.01)	1.95 (1.63-2.26)	2.25 (1.82-2.65)	2.51 (1.99-3.01)
12-hr	0.870 (0.775-0.977)	1.09 (0.974-1.23)	1.38 (1.22-1.55)	1.60 (1.41-1.80)	1.90 (1.66-2.15)	2.13 (1.84-2.43)	2.37 (2.01-2.72)	2.61 (2.17-3.04)	2.94 (2.38-3.49)	3.20 (2.54-3.86)
24-hr	1.13 (1.03-1.25)	1.42 (1.29-1.57)	1.78 (1.63-1.97)	2.08 (1.89-2.30)	2.49 (2.25-2.76)	2.82 (2.52-3.11)	3.16 (2.81-3.50)	3.51 (3.09-3.91)	3.99 (3.46-4.47)	4.36 (3.74-4.94)
2-day	1.35 (1.21-1.51)	1.69 (1.52-1.90)	2.15 (1.93-2.40)	2.51 (2.25-2.81)	3.03 (2.69-3.40)	3.43 (3.03-3.87)	3.86 (3.38-4.37)	4.30 (3.74-4.91)	4.91 (4.20-5.66)	5.40 (4.55-6.29)
3-day	1.48 (1.32-1.66)	1.86 (1.66-2.09)	2.37 (2.12-2.67)	2.79 (2.49-3.14)	3.38 (2.99-3.81)	3.84 (3.38-4.35)	4.34 (3.78-4.93)	4.86 (4.18-5.55)	5.58 (4.72-6.44)	6.16 (5.14-7.18)
4-day	1.61 (1.43-1.81)	2.03 (1.81-2.28)	2.60 (2.31-2.94)	3.07 (2.72-3.46)	3.73 (3.28-4.22)	4.25 (3.72-4.83)	4.82 (4.17-5.49)	5.41 (4.63-6.19)	6.25 (5.25-7.21)	6.92 (5.73-8.07)
7-day	1.87 (1.67-2.11)	2.36 (2.10-2.66)	3.04 (2.71-3.43)	3.58 (3.19-4.04)	4.34 (3.84-4.91)	4.94 (4.34-5.60)	5.58 (4.85-6.34)	6.24 (5.38-7.12)	7.15 (6.07-8.25)	7.87 (6.59-9.17)
10-day	2.04 (1.82-2.30)	2.59 (2.31-2.92)	3.35 (2.98-3.78)	3.95 (3.50-4.44)	4.76 (4.19-5.36)	5.39 (4.72-6.09)	6.04 (5.25-6.84)	6.70 (5.77-7.63)	7.61 (6.47-8.75)	8.31 (6.99-9.64)
20-day	2.49 (2.22-2.78)	3.15 (2.82-3.53)	4.06 (3.64-4.53)	4.74 (4.24-5.29)	5.66 (5.03-6.32)	6.35 (5.61-7.10)	7.05 (6.19-7.92)	7.75 (6.76-8.74)	8.67 (7.47-9.87)	9.35 (7.98-10.7)
30-day	2.79 (2.51-3.11)	3.54 (3.18-3.94)	4.54 (4.08-5.05)	5.29 (4.75-5.88)	6.29 (5.62-7.00)	7.04 (6.25-7.85)	7.80 (6.87-8.73)	8.55 (7.47-9.62)	9.53 (8.24-10.8)	10.3 (8.80-11.7)
45-day	3.27 (2.95-3.63)	4.16 (3.74-4.60)	5.33 (4.80-5.88)	6.18 (5.56-6.82)	7.28 (6.52-8.04)	8.07 (7.21-8.94)	8.84 (7.87-9.80)	9.56 (8.49-10.6)	10.5 (9.21-11.7)	11.1 (9.70-12.5)
60-day	3.75 (3.37-4.16)	4.77 (4.29-5.29)	6.11 (5.49-6.75)	7.05 (6.34-7.79)	8.23 (7.38-9.09)	9.06 (8.11-10.0)	9.85 (8.78-10.9)	10.6 (9.40-11.8)	11.4 (10.1-12.8)	11.9 (10.6-13.4)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

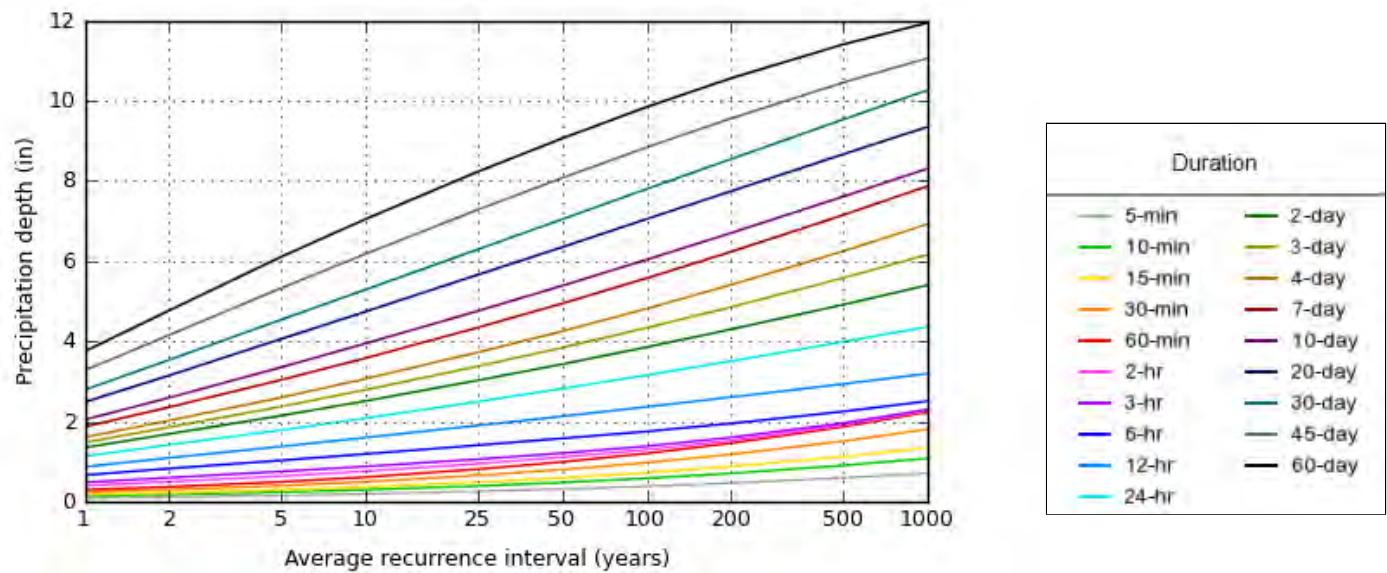
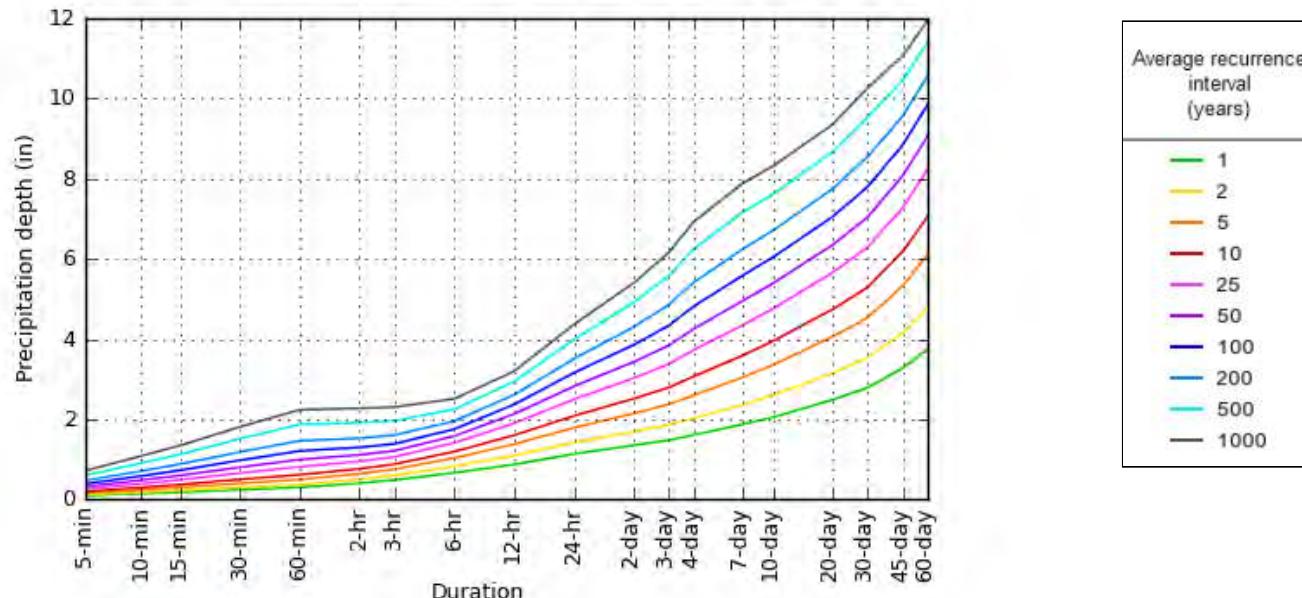
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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#### PF graphical

PDS-based depth-duration-frequency (DDF) curves  
Latitude: 39.1688°, Longitude: -119.7360°



NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Wed Jul 6 23:23:01 2022

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## Maps & aerials

[Small scale terrain](#)



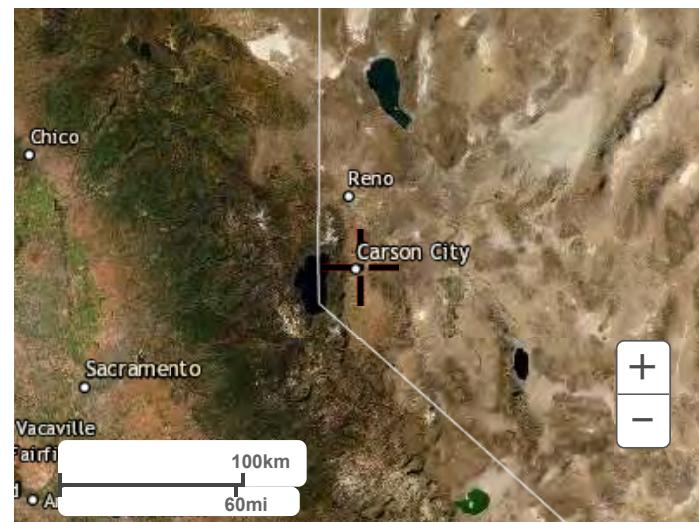
Large scale terrain



Large scale map



Large scale aerial



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Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

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## Inputs (Existing)

DRAINAGE AREA	
	ESHED01
Drainage Area (sf)	8,556,011
Drainage Area (ac)	196
Drainage Area (mi <sup>2</sup> )	0.307

## LOSS - SCS CURVE NUMBER

INITIAL ABSTRACTION	
	ESHED01
Initial abstraction (in) - default	0.27

Source: FEMA HEC-HMS Model

## HYDROLOGIC SOIL GROUP

	ESHED01
% HSG A	0.0%
% HSG B	0.0%
% HSG C	94.8%
% HSG D	5.2%

## LAND USE

	ESHED01
1/8 Acre Residential and Multifamily	5,304,608
%	62.0%
Commercial and Business	1,040,848
%	12.2%
Open Space - good condition	155,073
%	1.8%
Desert Shrub - fair condition	1,790,560
%	20.9%
Desert Shrub - poor condition	264,922
%	3.1%
Total %	100.0%

## CURVE NUMBER

	CN - HSG A	CN - HSG B	CN - HSG C	CN - HSG D
1/8 Acre Residential and Multifamily	77	85	90	92
Commercial and Business	89	92	94	95
Open Space - good condition	39	61	74	80
Desert Shrub - fair condition	55	72	81	86
Desert Shrub - poor condition	63	77	85	88

Source: Truckee Meadows Regional Drainage Manual Table 702

Source: USDA NRCS Earth Dams and Reservoirs TR-60

	ESHED 01
Curve Number	88.3

Cover Type and Hydrologic Condition	Aver. % Impervious Area <sup>2</sup>	Runoff Curve Numbers			
		Soil Comp A	Soil Comp B	Soil Comp C	Soil Comp D
<i>Fully developed urban area (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3</sup>					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50 to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>4</sup>		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious only, no vegetation) <sup>5</sup>		77	86	91	94
Idle lands (CNs are determined using cover types similar to those Table 702 - 3 of 4)					

<sup>1</sup>Average runoff condition, and  $I_a = 0.28$ <sup>2</sup>The average percent impervious area shown was used to develop the composite CNs. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CNs for other combinations of conditions may be computed using figure 2-3 or 2-4 in TR-55 (SCS, 1986).<sup>3</sup>CNs shown are equivalent to those of pasture. Composite CNs may be computed for other combinations of open space cover type.<sup>4</sup>Composite CNs for natural desert landscaping should be computed using figure 2-3 or 2-4 in TR-55 (SCS, 1986) based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CNs are assumed equivalent to desert shrub in poor hydrologic condition.<sup>5</sup>Composite CNs to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 in TR-55 (SCS, 1986) based on the degree of development (impervious area percentage) and the CNs for the newly graded pervious areas.

VERSION: April 30, 2009	REFERENCE: 210-VI-TR-55, Second Edition, June 1986	TABLE 702 1 of 4
WRC ENGINEERING, INC.		

RUNOFF CURVE NUMBERS FOR CULTIVATED AGRICULTURAL LANDS<sup>1</sup>

Cover type	Treatment <sup>2</sup>	Hydrologic condition <sup>3</sup>	Runoff Curve Numbers			
			Soil Comp A	Soil Comp B	Soil Comp C	Soil Comp D
Fallow	Bare soil	-	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T + CR	Poor	65	73	79	81
		Good	61	70	77	80
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
Close-seeded or broadcast legumes or rotation meadow	C&T + CR	Poor	60	71	78	81
		Good	58	69	77	80
	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
C&T		Good	55	69	78	83
		Poor	63	73	80	83
		Good	51	67	76	80

<sup>1</sup>Average runoff condition, and  $I_0 = 0.2S$ <sup>2</sup>*Crop residue cover* applies only if residue is on at least 5% of the surface throughout the year.<sup>3</sup>Hydrologic condition is based on combination of factors that affect infiltration and runoff, including: (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes in rotations, (d) percent of residue cover on the land surface (good  $\geq 20\%$ ), and (e) degree of surface roughness.*Poor:* Factors impair infiltration and tend to increase runoff.*Good:* Factors encourage average and better than average infiltration and tend to decrease runoff.

Cover Type	Hydrologic Condition	Runoff Curve Numbers			
		Soil Comp A	Soil Comp B	Soil Comp C	Soil Comp D
Pasture, grassland, or range – continuous forage for grazing <sup>2</sup>	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow – continuous grass, protected from grazing and generally mowed for hay	-	30	58	71	78
Brush – brush-weed-grass mixture with brush the major element <sup>3</sup>	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 <sup>4</sup>	48	65	73
Woods – grass combination (orchard or tree farm) <sup>5</sup>	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods <sup>6</sup>	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 <sup>4</sup>	55	70	77
Farmsteads – buildings, lanes, driveways, and surrounding lots	-	59	74	82	86

<sup>1</sup>Average runoff condition, and  $I_a = 0.2S$

<sup>2</sup>Poor: < 50% ground cover or heavily grazed with no mulch

Fair: 50 to 75% ground cover and not heavily grazed

Good: > 75% ground cover and lightly or only occasionally grazed

<sup>3</sup>Poor: < 50% ground cover

Fair: 50 to 75% ground cover

Good: >75% ground cover

<sup>4</sup>Actual curve number is less than 30; use CN = 30 for runoff computations.

<sup>5</sup>CNs shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CNs for woods and pasture.

<sup>6</sup>Poor: Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

Fair: Woods are grazed but not burned, and some forest litter covers the soil.

Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

RUNOFF CURVE NUMBERS FOR ARID AND SEMIARID RANGELANDS<sup>1</sup>

## Runoff Curve Numbers

Cover Description	Hydrologic Condition <sup>2</sup>	Soil Comp A <sup>3</sup>	Soil Comp B	Soil Comp C	Soil Comp D
Herbaceous – mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen – mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper – pinyon, juniper, or both; grass understory	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub – major plants include saltbrush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

<sup>1</sup>Average runoff condition, and  $I_a = 0.2S$ . For range in humid regions, use Table 702 - 3 of 4.

<sup>2</sup>Poor: <30% ground cover (litter, grass, and brush overstory)

Fair: 30 to 70% ground cover

Good: > 70% ground cover

<sup>3</sup>Curve numbers for group A have been developed only for desert shrub.

## TRANSFORM - SCS UNIT HYDROGRAPH

### LAG TIME

	ESHED01
Overland Length (ft)	50
Overland Slope (%)	0.7
R	0.78
Overland Time (min)	10
Concentrated Length 1 (ft)	4,880
Concentrated Slope 1 (ft/ft)	0.008
Concentrated Velocity 1 (fps)	1.84
Concentrated Time 1 (min)	44
Time of Concentration 1 (min)	44
Concentrated Length 2 (ft)	1,610
Concentrated Slope 2 (ft/ft)	0.002
Concentrated Velocity 2 (fps)	0.80
Concentrated Time 2 (min)	33
Time of Concentration 2 (min)	43
Sum Time of Concentration (min)	98
Lag Time (min)	59

For urban areas, the time of concentration consists of an inlet time or overland flow time ( $t_i$ ) plus the time of travel ( $t_t$ ) in the storm sewer, paved gutter, roadside drainage ditch, or drainage channel. For non-urban areas, the time of concentration consists of an overland flow time ( $t_i$ ) plus the time of travel in a combined form, such as a small swale, channel, or wash. The latter portion ( $t_t$ ) of the time of concentration can be estimated from the hydraulic properties of the storm sewer, gutter, swale, ditch, or wash. Inlet time, on the other hand, will vary with surface slope, depression storage, surface cover,

April 30, 2009

Storm Runoff

702

## TRUCKEE MEADOWS REGIONAL DRAINAGE MANUAL

antecedent rainfall, and infiltration capacity of the soil, as well as distance of surface flow. Thus, the time of concentration for both urban and non-urban areas shall be calculated as follows:

$$t_c = t_i + t_t \quad (701)$$

In which

$t_c$  = time of concentration (minutes)

$t_i$  = initial, inlet, or overland flow time (minutes)

$t_t$  = travel time in the ditch, channel, gutter, storm sewer, etc. (minutes)

The shape of the SCS Unit Hydrograph is based on studies of various natural unit hydrographs. The basic governing parameters of this curvilinear hydrograph are as follows:

1. The time-to-peak,  $T_p$ , of the unit hydrograph approximately equals 0.2 times the time-of-base,  $T_b$ .
2. The point of inflection of the falling leg of the unit hydrograph approximately equals 1.7 times  $T_p$ .

For ease of calculation, an equivalent triangular unit hydrograph was derived from the natural curvilinear unit hydrograph. From the triangular unit hydrograph, equations for the peak discharge,  $Q_p$ , time-to-peak,  $T_p$ , and the time of concentration,  $t_c$  were developed based on a single lag factor (TLAG). The discharge hydrograph is then determined for the SCS Unit Hydrograph method based on the storm excess precipitation applied to the unit hydrograph whose parameters are determined by TLAG. TLAG is defined and discussed in Section 705.3.

### 705.2 ASSUMPTIONS

The basic assumptions made when applying the SCS Unit Hydrograph method (and all other unit hydrograph methods) are as follows:

1. The effects of all physical characteristics of a given drainage basin are reflected in the shape of the storm runoff hydrograph for that basin.
2. At a given point on a stream, discharge ordinates of different unit graphs of the same unit time of rainfall excess are mutually proportional to respective volumes.
3. A hydrograph of storm discharge that would result from a series of bursts of excess rain or from continuous excess rain of variable intensity may be constructed from a series of overlapping unit graphs each resulting from a single increment of excess rain of unit duration.

### 705.3 LAG TIME

Input data for the Soil Conservation Service dimensionless unit hydrograph method (SCS, 1985) consists of a single parameter, TLAG, which is equal to the lag (in hours) between the center of mass of rainfall excess and the peak of the unit hydrograph. For small drainage basins (less than one square mile) and basin slopes less than ten percent the lag time may be related to the time of concentration,  $t_c$ , by the following empirical relationship:

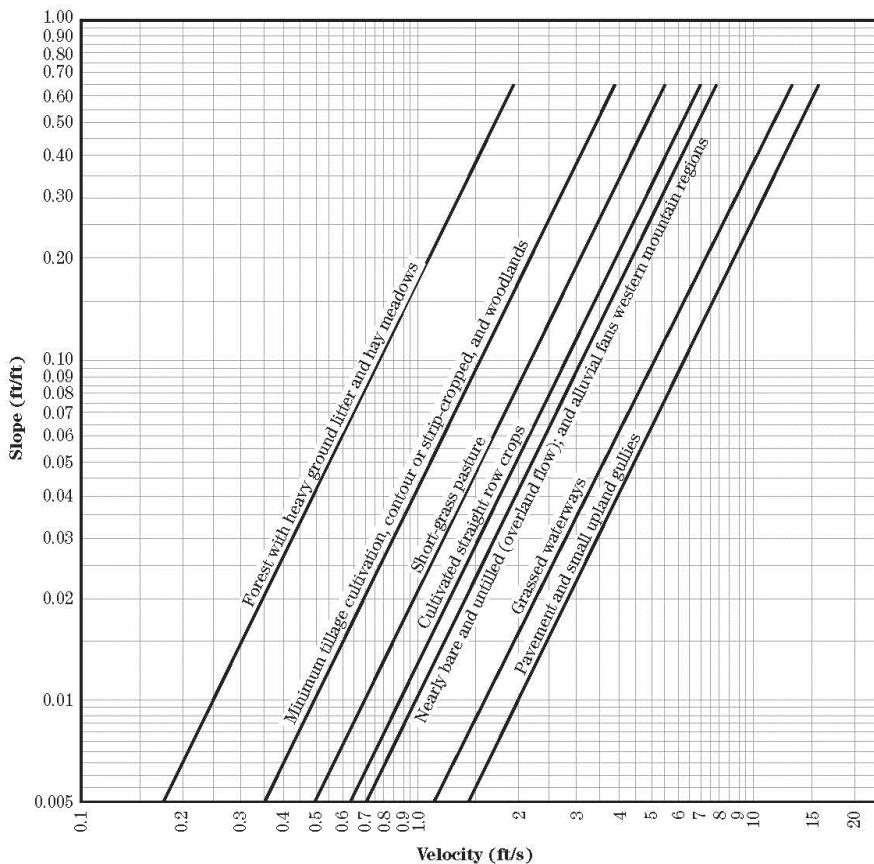
$$\text{TLAG} = 0.6 t_c \quad (709)$$

The  $t_c$  is computed as presented in Section 702.

For larger drainage basins (greater than one square mile) and basins with a basin slope equal to or greater than ten percent, the lag time (and  $t_c$ ) is generally governed mostly by the concentrated flow travel time, not the initial overland flow time. In addition, as the basin gets increasingly larger, the average flow velocity (and associated travel time) becomes more difficult to estimate. Therefore, for these basins, the following lag equation is recommended for use in computing TLAG:

$$\text{TLAG} = 22.1 K_n (L L_e / S)^{0.5} \quad (710)$$

where  $K_n$  = Roughness factor for the basin channels  
 $L$  = Length of longest watercourse (miles)

**Figure 15-4** Velocity versus slope for shallow concentrated flow**Table 15-3** Equations and assumptions developed from figure 15-4

Flow type	Depth (ft)	Manning's <i>n</i>	Velocity equation (ft/s)
Pavement and small upland gullies	0.2	0.025	$V=20.328(s)^{0.5}$
Grassed waterways	0.4	0.050	$V=16.135(s)^{0.5}$
Nearly bare and untilled (overland flow); and alluvial fans in western mountain regions	0.2	0.051	$V=9.965(s)^{0.5}$
Cultivated straight row crops	0.2	0.058	$V=8.762(s)^{0.5}$
Short-grass pasture	0.2	0.073	$V=6.962(s)^{0.5}$
Minimum tillage cultivation, contour or strip-cropped, and woodlands	0.2	0.101	$V=5.032(s)^{0.5}$
Forest with heavy ground litter and hay meadows	0.2	0.202	$V=2.516(s)^{0.5}$

Inputs (Proposed)

<b>DRAINAGE AREA</b>	
	<b>PSHED01</b>
Drainage Area (sf)	8,556,011
Drainage Area (ac)	196
Drainage Area (mi <sup>2</sup> )	0.307

<b>LOSS - SCS CURVE NUMBER</b>	
<u>INITIAL ABSTRACTION</u>	
	<b>PSHED01</b>
Initial abstraction (in) - default	0.24
<i>Source: FEMA HEC-HMS Model</i>	
<b>HYDROLOGIC SOIL GROUP</b>	
	<b>PSHED01</b>
% HSG A	0.0%
% HSG B	0.0%
% HSG C	94.8%
% HSG D	5.2%

<b>LAND USE</b>	
	<b>PSHED01</b>
1/8 Acre Residential and Multifamily	6,332,225
%	74.0%
Commercial and Business	1,040,848
%	12.2%
Open Space - good condition	155,073
%	1.8%
Desert Shrub - fair condition	762,943
%	8.9%
Desert Shrub - poor condition	264,922
%	3.1%
Total %	100.0%

<b>CURVE NUMBER</b>				
	<b>CN - HSG A</b>	<b>CN - HSG B</b>	<b>CN - HSG C</b>	<b>CN - HSG D</b>
1/8 Acre Residential and Multifamily	77	85	90	92
Commercial and Business	89	92	94	95
Open Space - good condition	39	61	74	80
Desert Shrub - fair condition	55	72	81	86
Desert Shrub - poor condition	63	77	85	88

*Source: Truckee Meadows Regional Drainage Manual Table 702*

*Source: USDA NRCS Earth Dams and Reservoirs TR-60*

	<b>PSHED01</b>
Curve Number	89.4

**TRANSFORM - SCS UNIT HYDROGRAPH****LAG TIME**

	PSHED01
Overland Length (ft)	50
Overland Slope (%)	0.7
R	0.79
Overland Time (min)	10
Concentrated Length 1 (ft)	4,880
Concentrated Slope 1 (ft/ft)	0.008
Concentrated Velocity 1 (fps)	1.84
Concentrated Time 1 (min)	44
Time of Concentration 1 (min)	44
Concentrated Length 2 (ft)	1,610
Concentrated Slope 2 (ft/ft)	0.002
Concentrated Velocity 2 (fps)	0.80
Concentrated Time 2 (min)	33
Time of Concentration 2 (min)	43
Sum Time of Concentration (min)	98
Lag Time (min)	59

## Output

Global Summary Results for Run "10yr, 24hr E&P"

Project: N014001 Offsite Hydrology    Simulation Run: 10yr, 24hr E&P

Start of Run: 01Jan2022, 00:00    Basin Model: Basin 1  
End of Run: 03Jan2022, 00:00    Meteorologic Model: 10yr  
Compute Time: DATA CHANGED, RECOMPUTE    Control Specifications: Control 1

Show Elements: All Elements    Volume Units:  IN  ACRE-FT    Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
ESHED01	0.307	54.7	01Jan2022, 13:05	17.2
PSHED01	0.307	58.7	01Jan2022, 13:05	18.4

Global Summary Results for Run "100yr, 24hr E&P"

Project: N014001 Offsite Hydrology    Simulation Run: 100yr, 24hr E&P

Start of Run: 01Jan2022, 00:00    Basin Model: Basin 1  
End of Run: 03Jan2022, 00:00    Meteorologic Model: 100yr  
Compute Time: DATA CHANGED, RECOMPUTE    Control Specifications: Control 1

Show Elements: All Elements    Volume Units:  IN  ACRE-FT    Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
ESHED01	0.307	125.6	01Jan2022, 13:05	32.5
PSHED01	0.307	131.2	01Jan2022, 13:05	34.0

## Appendix B

### Flood Insurance Rate Map

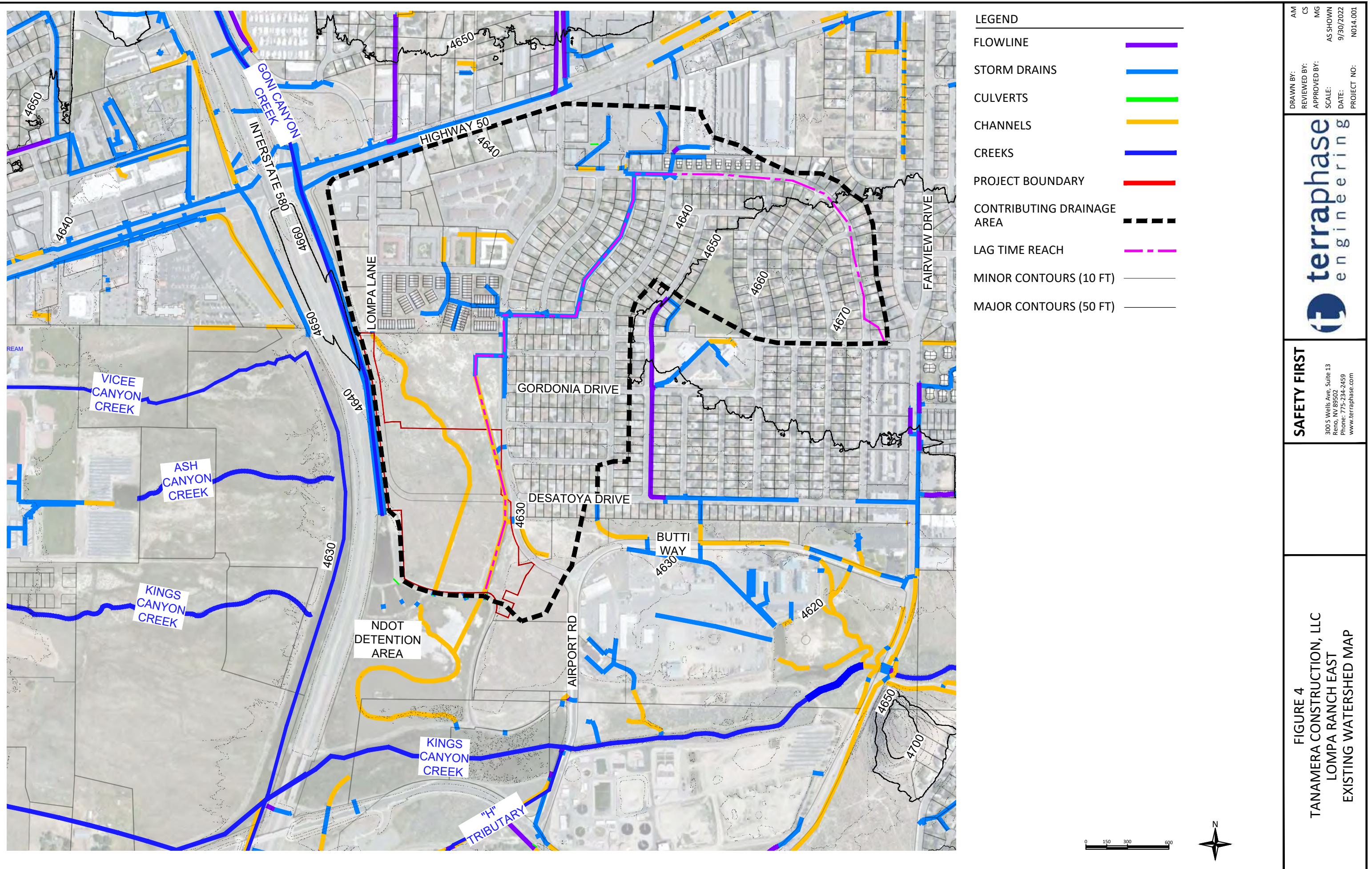


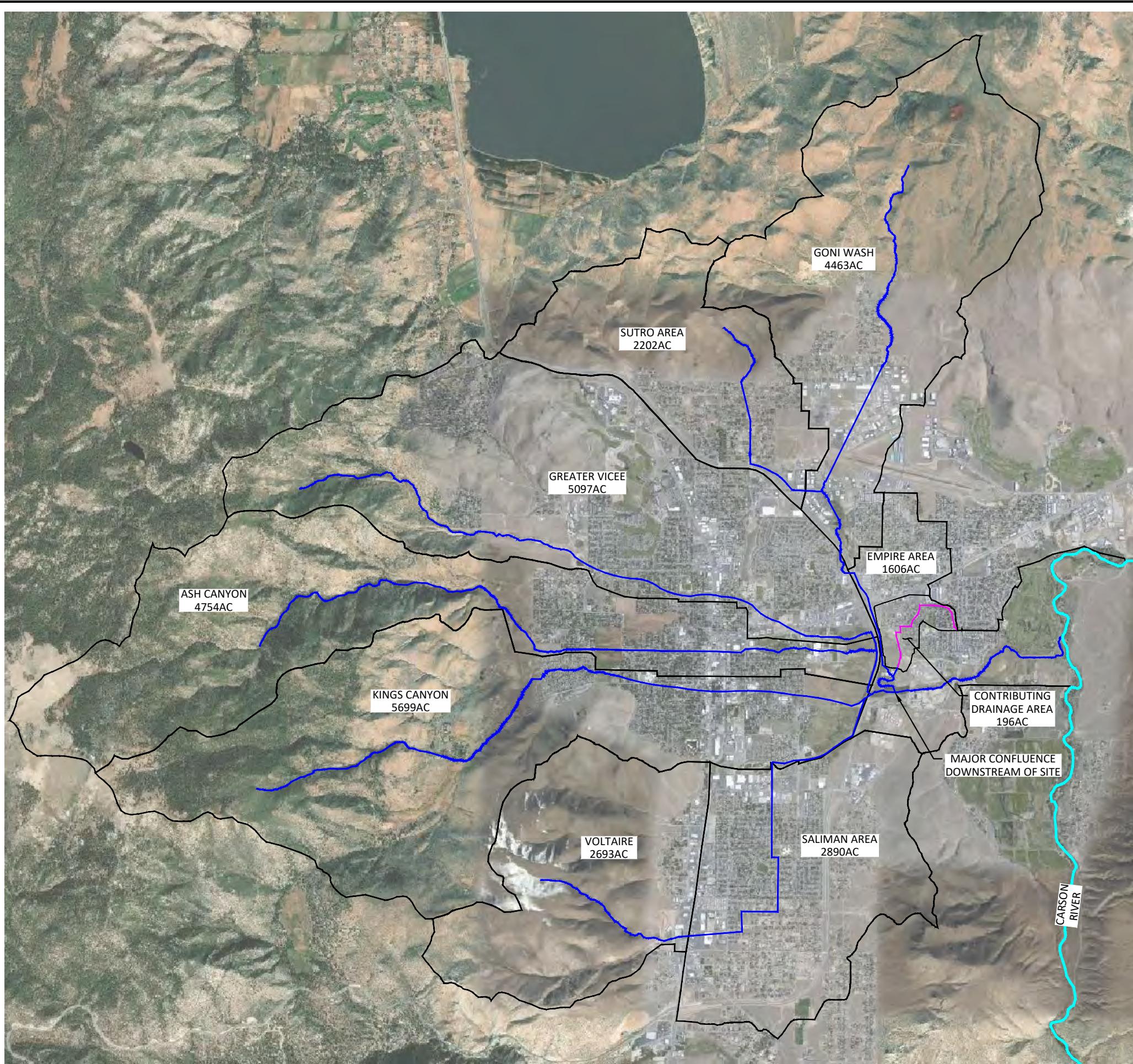


# Appendix C

## Drainage Maps







### LEGEND

CONFLUENCE UPSTREAM WATERSHEDS



PROJECT DRAINAGE AREA



MAJOR FLOW LINES



CARSON RIVER



PROJECT FLOW LINE



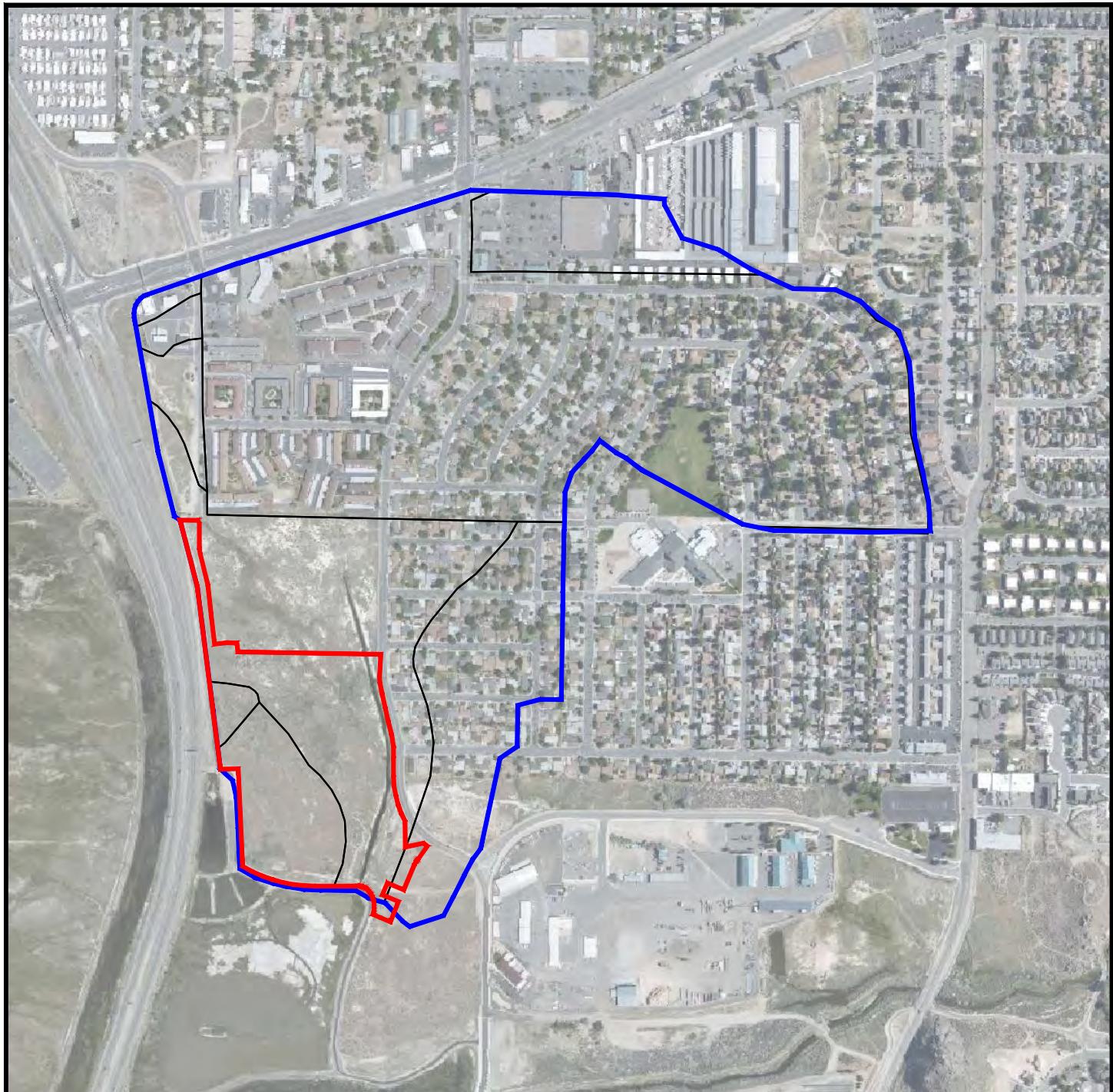
FIGURE 5  
TANAMERA CONSTRUCTION, LLC  
LOMPA RANCH EAST  
UPSTREAM WATERSHED MAP

SAFETY FIRST

300 S Wells Ave, Suite 13  
Reno, NV 89502  
Phone: 775-234-2459  
www.terraphase.com

**terraphase**  
engineering

DRAWN BY: WW  
REVIEWED BY: CS  
APPROVED BY: MG  
SCALE: AS SHOWN  
DATE: 9/30/2022  
PROJECT NO: N014.001



LEGEND

	SOIL NOT RATED		CONTRIBUTING DRAINAGE AREA
	SOIL GROUP C		PROJECT AREA
	SOIL GROUP C/D		

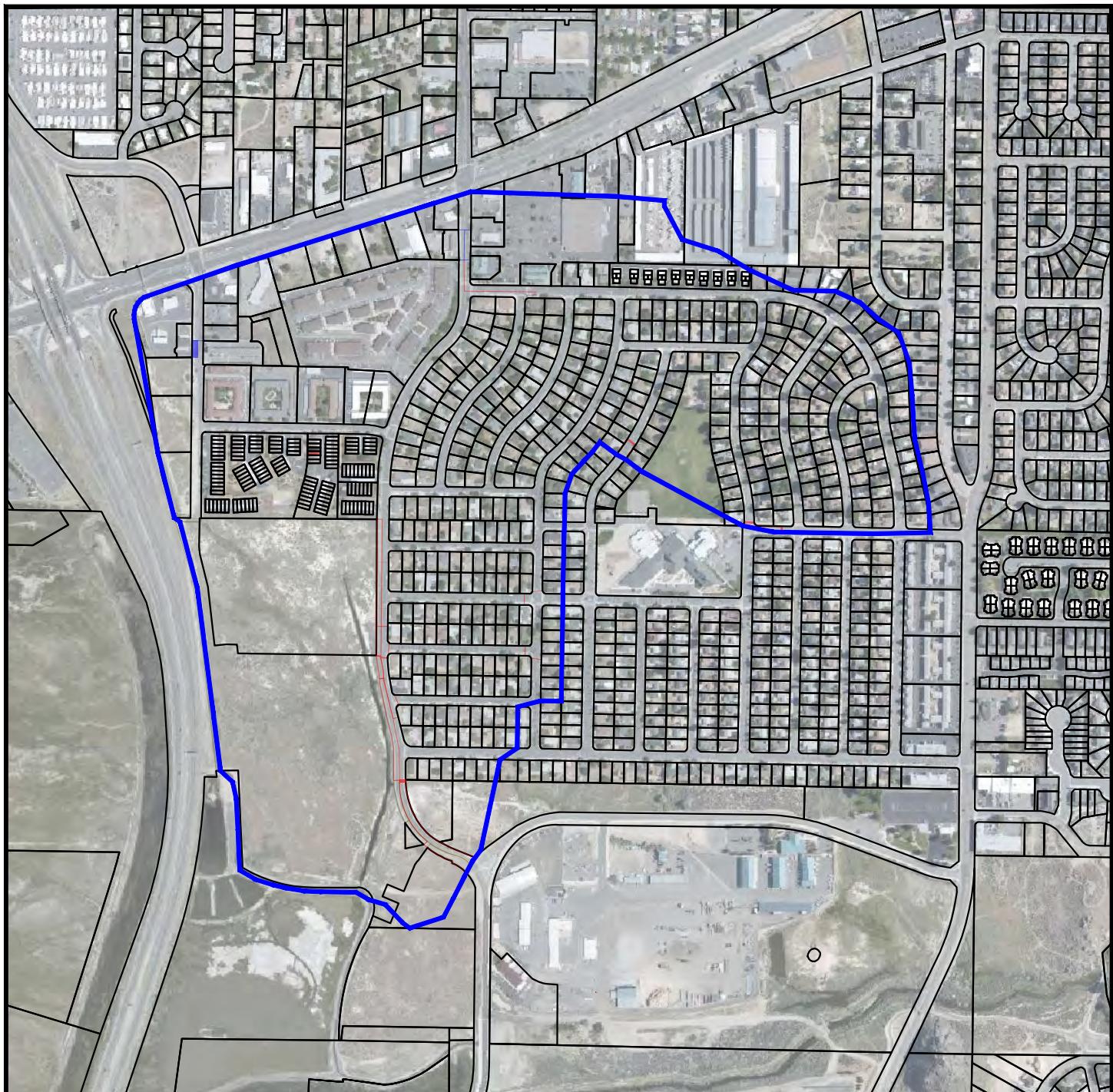
0 375 750 1500  
1 inch = 750 feet



CLIENT:  
Tanamera Construction, LLC  
PROJECT:  
Lompa Ranch East  
PROJECT NUMBER:  
N014.001

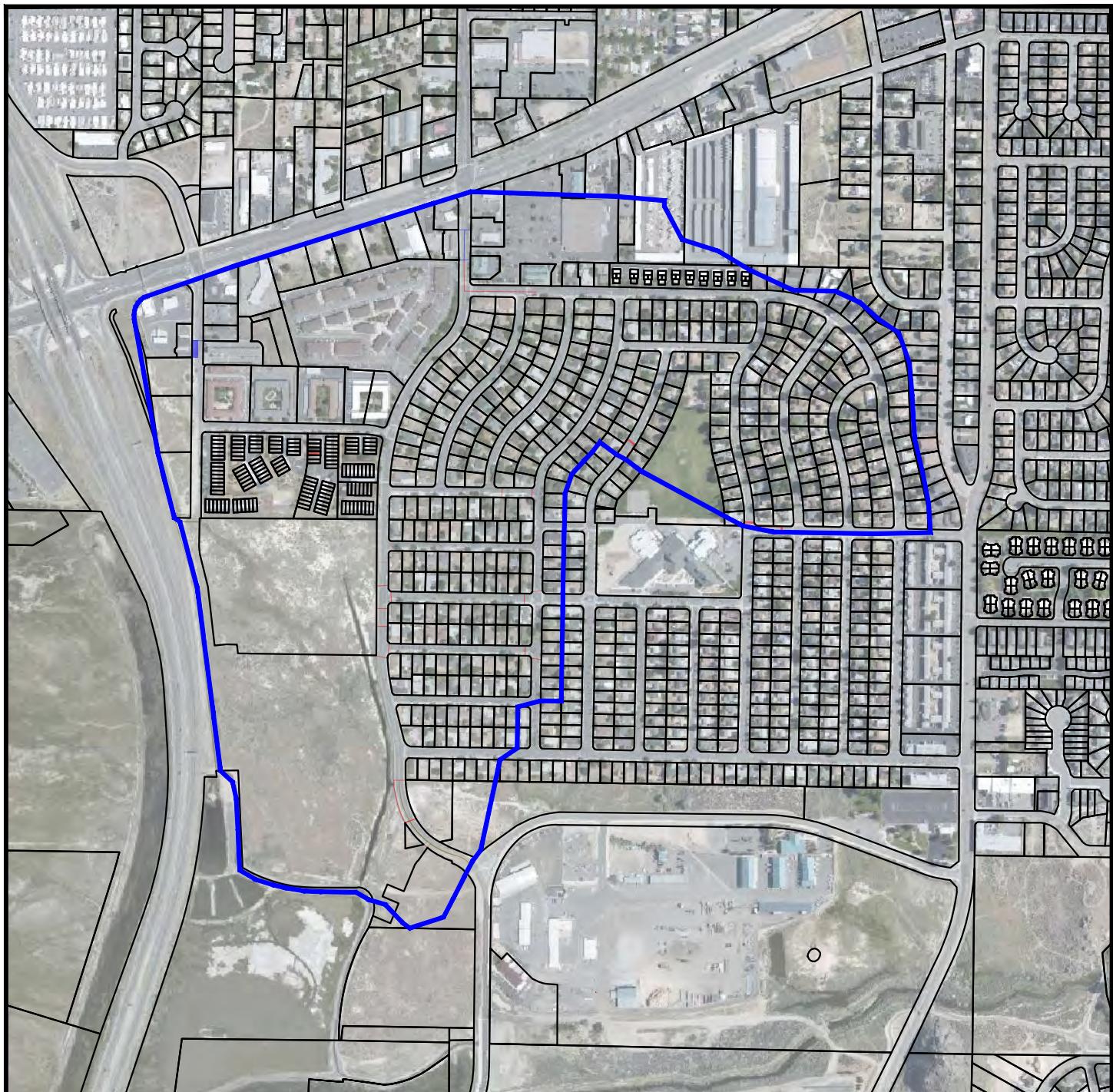
Lompa Ranch East  
Soil Map

Figure 6



LEGEND

$\frac{1}{8}$ Acre Residential and Multifamily	Desert Shrub - fair condition
Commercial and Business	Desert Shrub - poor condition
Open space - good condition	Contributing Drainage Area

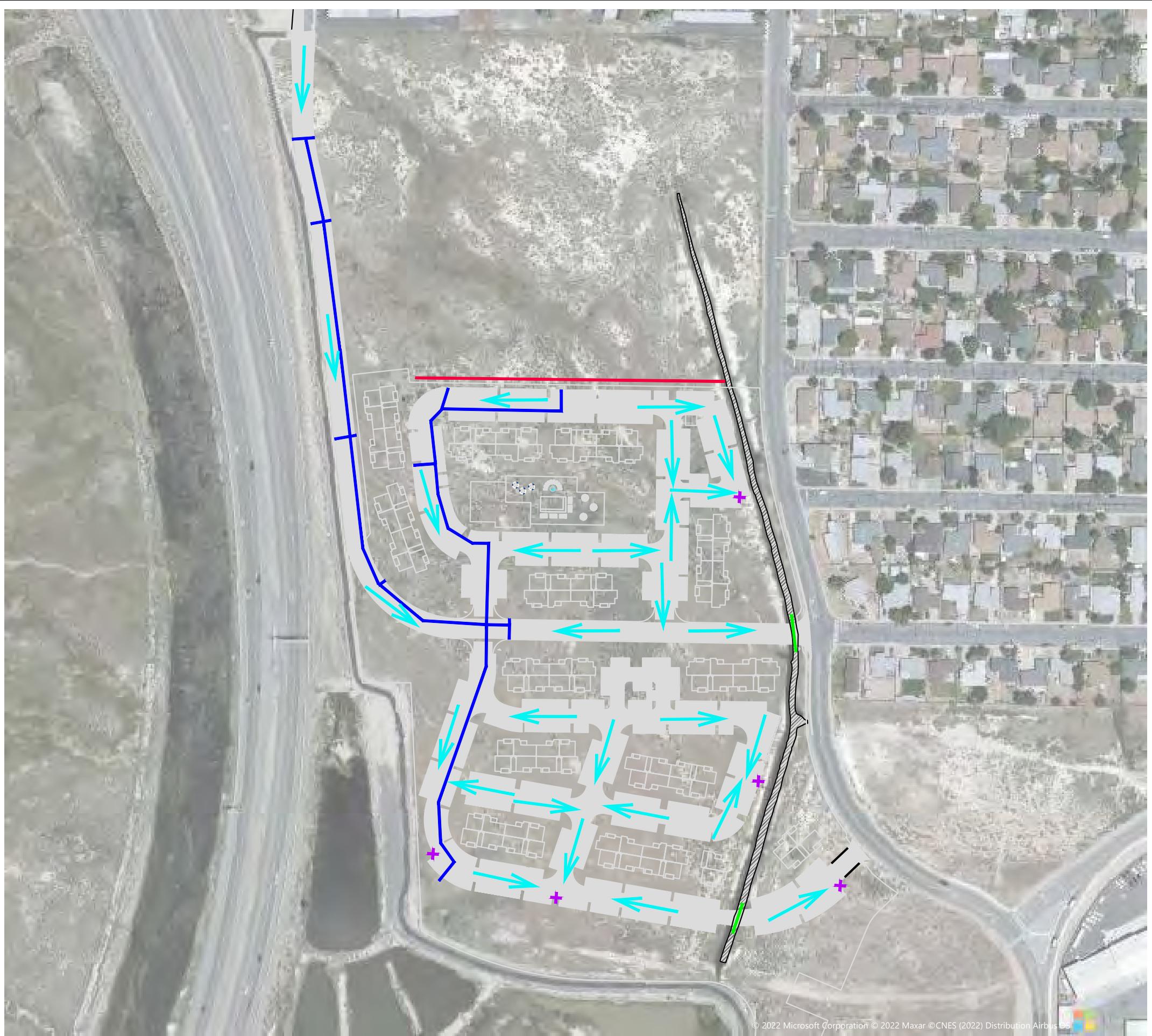


0 375 750 1500  
1 inch = 750 feet



LEGEND

$\frac{1}{8}$ Acre Residential and Multifamily	Desert Shrub - fair condition
Commercial and Business	Desert Shrub - poor condition
Open space - good condition	Contributing Drainage Area



#### LEGEND

(P) STORM DRAIN



(P) LOW POINT



(P) CUT-OFF DITCH



(P) CULVERT



(E) DITCH



SLOPE DIRECTION



SAFETY FIRST

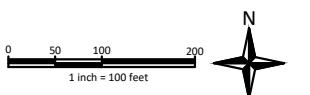
terraphas

engineering

FIGURE 9  
TANAMERA CONSTRUCTION, LLC  
LOMPA RANCH EAST  
PROPOSED DRAINAGE PLAN

300 S Wells Ave, Suite 13  
Reno, NV 89502  
Phone: 775-234-2459  
www.terraphas.com

DRAWN BY: CS  
REVIEWED BY: CS  
APPROVED BY: MG  
SCALE: AS SHOWN  
DATE: 9/30/2022  
PROJECT NO: N014.001



November 18, 2022

Ms. Heather Manzo, Associate Planner  
Carson City Community Development  
108 E. Proctor Street  
Carson City, NV 89701

**RE: RESPONSE TO TRAFFIC COMMENTS FOR LU-2022-0434 (LOMPA RANCH EAST)**

Dear Ms. Manzo,

This letter is in response to the traffic comments received on November 4, 2022 via email from Stephen Pottey:

1. Please provide a conceptual drawing/layout of the 'High T' intersection at 5<sup>th</sup> Street and Airport Rd.

Response: Please see Figure 8 in the revised Traffic Impact Study dated November 16, 2022.

2. The proposed bike lanes on N. Lompa Lane must meet city standards (5') and connect to the intersection of N. Lompa/Hwy 50. If the total width of the proposed thru lanes, two-way left-turn lane, and bike lanes on N. Lompa cannot be accommodated, a pro-rata share for the multi-use path adjacent to the freeway would be requested in lieu of bike lanes.

Response: The section for N. Lompa Lane will meet City standards for a 5 ft. bike lane, thru lanes, and two-way left-turn lane and connect to the intersection of N. Lompa Lane/Hwy 50. In the section with existing curb, gutter, and sidewalk (near Hwy 50), 11 ft. wide lanes are proposed.

3. It is understood of the queuing issue at N. Lompa/Hwy 50 and how it's not directly caused by the proposed development. Can the study reflect the causes/issues in this area, i.e. driveway access/spacing, signal timing/phasing (protected left turn), other? What benefit/mitigations could shared driveways, driveway reductions, or other measures have on the queuing issue, if any?

Response: Please see updated information on pg. 17 in the Traffic Impact Study dated November 16, 2022.

4. Please provide additional information on crash data in regards to safety at intersections in study, specifically N. Lompa/Hwy 50.

Response: Please see updated information on pg. 4 in the Traffic Impact Study dated November 16, 2022.

5. Does the stop warrant evaluation account for the volume of traffic redirected from Menlo to N. Lompa/Desatoya intersection?

Response: Please see updated information on pg. 16 in the Traffic Impact Study dated November 16, 2022.

# TRAFFIC IMPACT STUDY FOR Lompa Ranch East

November 16, 2022

PREPARED FOR:  
Tanamera Construction LLC

PREPARED BY:



## YOUR QUESTIONS ANSWERED QUICKLY

### **Why did you perform this study?**

This Traffic Impact Study evaluates the potential traffic impacts associated with the proposed Lompa Ranch East project in Carson City, Nevada. This study of potential transportation impacts was undertaken for planning purposes and to assist in determining what traffic controls or mitigations may be needed to reduce potential impacts, if any are found. A key aspect of this study was to collect new traffic counts and establish updated Baseline and Future Year conditions within the study area using the latest CAMPO Travel Demand Model.

### **What does the project consist of?**

The project consists of up to 306 multi-family dwelling units and an ancillary clubhouse for residents.

### **How much traffic will the project generate?**

The project is anticipated to generate approximately 2,062 Daily, 122 AM peak hour, and 156 PM peak hour trips to the external roadway network.

### **How will project traffic affect the roadway network?**

With addition of project traffic, the southbound left turn movement at the 5<sup>th</sup> Street / Airport Road intersection is anticipated to degrade from LOS "E" to LOS "F". All other study intersections and movements are anticipated to operate at acceptable levels of service with the addition of project traffic.

### **Are any improvements recommended?**

The project proposes to construct the following improvements:

- ▶ Half-street improvements on the west side of the existing N. Lompa Lane
- ▶ The remaining N. Lompa Lane roadway segment between Modoc Court and Airport Road with two-way left-turn lane (TWLTL) striping
- ▶ 5 foot wide bicycle Lanes on both sides of N. Lompa Lane and both sides of Airport Road along the property frontage

In addition, it is recommended that the project construct the following traffic mitigations:

- ▶ Northbound left turn pocket (100' pocket) at the Airport Road / Desatoya Drive intersection
- ▶ Restripe for a 115-foot northbound left turn pocket at the US 50 / N. Lompa Lane intersection and stripe a two-way left-turn lane (TWLTL) on N. Lompa Lane (William Street/US 50 to Airport Road).
- ▶ High-T configuration at the 5<sup>th</sup> Street / Airport Road intersection enabling two-stage southbound left turns



**LIST OF FIGURES**

1. Project Location
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- B. Baseline LOS Calculations
- C. Baseline Plus Project LOS Calculations
- D. Future Year LOS Calculations
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- F. NDOT Turn Lane Warrants



## INTRODUCTION

This report presents the findings of a Traffic Impact Study completed to assess the potential traffic impacts on local intersections associated with the Lompa Ranch East project in Carson City, Nevada. This traffic impact study has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, identify potential impacts, document findings, and make recommendations to mitigate impacts, if any are found. The location of the project is shown on **Figure 1** and the preliminary project site plan is shown on **Figure 2**.

### ***Study Area and Evaluated Scenarios***

The project consists of up to 306 multi-family dwelling units and an ancillary clubhouse for use by residents. The project is located in the eastern portion (east of I-580) of the Lompa Ranch North Specific Plan Area. The study intersections were identified based on prior traffic studies, and knowledge of the study area, and are shown on **Figure 1**. The following intersections are included in this study:

- ▶ US 50 / N. Lompa Lane
- ▶ US 50 / Airport Road
- ▶ Airport Road / Gordonia Drive
- ▶ Airport Road / Desatoya Drive
- ▶ Airport Road / South Project Access
- ▶ Airport Road / Butti Way
- ▶ Airport Road / 5<sup>th</sup> Street

This study includes analysis of both the weekday AM and PM peak hours as these are the periods of time in which peak traffic is anticipated to occur. It is anticipated that this project will be constructed as one phase. The evaluated development scenarios are:

- ▶ Baseline Conditions
- ▶ Baseline Plus Project Conditions
- ▶ Future Year Conditions (20 year horizon)
- ▶ Future Year Plus Project Conditions

## ANALYSIS METHODOLOGY

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term equates seconds of delay per vehicle at intersections to letter grades "A" through "F" with "A" representing optimum conditions and "F" representing breakdown or over capacity flows.



## ***Intersections***

The complete methodology for intersection level of service analysis is established in the *Highway Capacity Manual (HCM), 6th Edition* published by the Transportation Research Board (TRB). **Table 1** presents the delay thresholds for each level of service grade at signalized and unsignalized intersections.

**Table 1: Level of Service Definition for Intersections**

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles.	20 to 35	15 to 25
D	High density traffic conditions still with stable flow.	35 to 55	25 to 35
E	At or near capacity flows.	55 to 80	35 to 50
F	Over capacity conditions.	> 80	> 50

Source: *Highway Capacity Manual, 6th Edition*

Level of service calculations were performed for the study intersections using the Vistro 2020 software package with analysis and results reported in accordance with *HCM* methodology.

## ***Level of Service Policy***

### Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) *Traffic Impact Study Requirements* publication states:

*Level of service "C" will be the design objective for capacity and under no circumstances will less than level of service "D" be accepted for site and non-site traffic*

### Carson City

The Carson City Code of Ordinances Section 18.12.13 establishes Level of Service (LOS) "D" as the citywide level of service standard.

Hence, LOS "D" was used as the threshold criteria for this analysis.

The LOS policies are not specific to minor side-street approaches. Traffic engineering practitioners recognize that LOS E/F conditions for the side street approach, during the peak hour(s), does not necessarily indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and suburban areas and is manageable in most cases.



## BASELINE CONDITIONS

### Roadway Facilities

A brief description of the key roadways in the study area is provided below.

*US 50* is a five-lane roadway with two travel lanes in each direction and a center turn lane that runs generally in the east-west direction. It has a posted speed limit of 45 mph in the study area and is classified as an “Other Principal Arterial” by *NDOT*.

*N. Lompa Lane* is a two-lane roadway with one travel lane in each direction that generally runs in the north-south direction. There is no posted speed limit but has a prima-facie speed of 25 mph. It is classified as a “Minor Arterial” north of *US 50* and a “Minor Collector” south of *US 50* by *NDOT/Carson City*.

*Airport Road* is a two-lane roadway with one travel lane in each direction that generally runs in the north-south direction. It has a posted speed limit of 25 mph within the project vicinity. *Airport Road* is classified as a “Minor Collector” by *NDOT/Carson City*.

*5<sup>th</sup> Street* is a two-lane roadway with one travel lane in each direction that generally runs in the east-west direction. *5<sup>th</sup> Street* has a posted speed limit of 50 mph within the study area and is classified as a “Minor Arterial” by *NDOT/Carson City*.

### Bicycle & Pedestrian Facilities

Within the project vicinity, sidewalks are generally present on both sides of *US 50*, *N. Lompa Lane*, and *Airport Road*. Sidewalk does not exist on the west side of *Airport Road* between *Minonee Lane* and the *Carson City Parks and Recreation Office*. Dedicated bike lanes are provided on both sides of *US 50* and *Airport Road* between *Butti Way* and *5<sup>th</sup> Street*.

### Transit Facilities

*Carson City* provides fixed route bus service via *Jump Around Carson* (JAC). **Exhibit 1** shows the existing route within the project vicinity. Route 2A and 2B provide service along the project frontage on *Airport Road*. Weekday service is provided on one hour headways from 6:30 AM to 7:30 PM. Saturday service is provided from 8:30 AM to 1:30 PM.

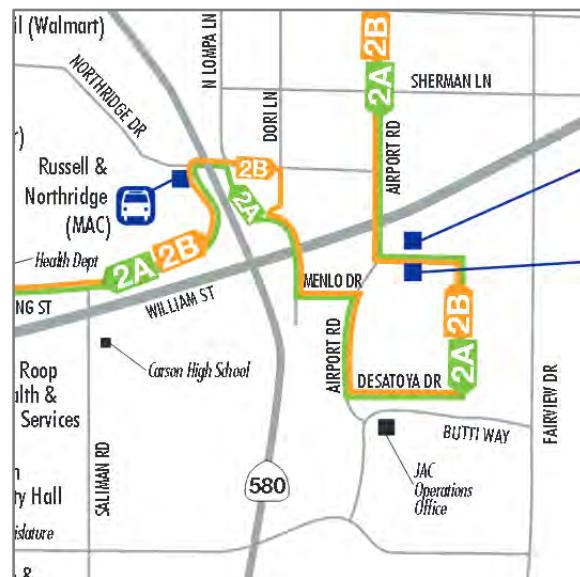


Exhibit 1: JAC Routes 2A & 2B



### ***Crash History***

Vehicle crash data along N. Lompa Lane and Airport Road was requested from NDOT for the latest three-year period available (January 2017 – January 2020). Of the reported crash data, the majority of crashes occur near US 50 and are classified as rear-end or angle type crashes. A minor number of crashes were reported intermittently along Airport Road. No fatalities were reported within the three-year period.

Additionally, crash data (January 2017 – January 2020) was requested from NDOT for the US 50 / N. Lompa Lane and US 50 / Airport Road intersections. A total of 52 and 46 total crashes were reported during the three-year period at the US 50 / N. Lompa Lane and US 50 / Airport Road intersections, respectively. A significant percentage (approximately 80%) of the reported crashes occurred with the primary vehicle (V1) travelling eastbound or westbound on mainline US 50. Angle (40%), rear-end (38%), and sideswipe (19%) were the most common reported crash types at the US 50 / N. Lompa Lane intersection. Rear-end (46%), angle (20%), and sideswipe (17%) were the most common reported crash types at the US 50 / Airport Road intersection.

Complete Crash data is provided in **Appendix A**.

### ***Traffic Volumes***

AM and PM peak hour traffic volumes were collected at the study intersections in February 2022 with Carson City School District in regular session. The collected AM and PM peak hour intersection turning movement volumes were compared to recent nearby traffic counts from previous traffic studies (2021/2022). The collected counts were found to be lower than the prior traffic counts. Therefore, the collected turning movement counts were adjusted higher as follows:

- ▶ US 50, west of N. Lompa Lane, + 16%
- ▶ US 50, east of Airport Road, + 16%
- ▶ Airport Road, south of US 50, + 9%
- ▶ Airport Road, north of 5<sup>th</sup> Street, + 6%
- ▶ 5<sup>th</sup> Street, east of Airport Road, + 9%
- ▶ 5<sup>th</sup> Street, west of Airport Road, + 10%

Numerous other development projects have been recently approved within the project vicinity. Project traffic generated by each project was added to the adjusted existing traffic volumes to develop a “Baseline” scenario. The projects included in Baseline Conditions are the following:

- ▶ Lompa Ranch West (proposed as of March 2022)
  - » Phase 1 Single Family – 189 d.u.
  - » Phase 2 Single Family – 204 d.u.



- » Ryder Multifamily – 360 d.u.
- » North Residential – 137 d.u.
- ▶ Little Lane Village – 151 d.u.
- ▶ Arby's – 2,400 sq. ft.
- ▶ Carson Lofts – 160 d.u.
- ▶ Eagle Valley Middle School Expansion project – 178 students

The Baseline Conditions traffic volumes, lane configurations, and controls are shown on **Figure 3**. As presented, the Baseline Conditions traffic volumes are very conservative and represent a comprehensive horizon scenario including all the known nearby developments.

### ***Intersection Level of Service Analysis***

**Table 2** shows the Baseline Conditions level of service results and the technical calculations are provided in **Appendix B**. Existing signal timing was obtained from Carson City and used in this analysis scenario.

**Table 2: Baseline Intersection Level of Service**

Int. ID	Intersection	Control	AM		PM	
			Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1	US 50 / N. Lompa Lane	Signal				
	Overall		21.1	C	22.9	C
2	US 50 / Airport Road	Signal				
	Overall		25.5	C	33.4	C
3	Airport Road / Gordonia Drive	All-Way Stop				
	Overall		9.2	A	9.2	A
4	Airport Road / Desatoya Drive	Side Street Stop				
	Overall		2.4	A	1.7	A
	Westbound Approach		12.4	B	11.6	B
	Southbound Left		7.7	A	7.9	A
6	Airport Road / Butti Way	Side Street Stop				
	Overall		3.2	A	2.3	A
	Westbound Left		15.1	C	13.0	B
	Westbound Right		9.7	A	10.0	B
	Southbound Left		7.7	A	7.8	A
7	5 <sup>th</sup> Street / Airport Road	Side Street Stop				
	Overall		7.4	A	6.0	A
	Southbound Left		38.6	E	41.6	E
	Southbound Right		17.6	C	11.7	B
	Eastbound Left		9.0	A	8.6	A

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.

Source: Headway Transportation, 2022



As shown in the table, all study intersections and movements operate overall within policy level of service thresholds under Baseline Conditions. The southbound left turn movement at the 5<sup>th</sup> Street / Airport Road intersection is projected to operate at LOS "E" without the project.

## PROJECT CONDITIONS

### ***Proposed Improvements***

The project proposes to construct the following improvements:

- ▶ Half-street improvements on the west side of the existing N. Lompa Lane
- ▶ The remaining N. Lompa Lane roadway segment between Modoc Court and Airport Road with two-way left-turn lane (TWLTL) striping
- ▶ 5 foot wide bicycle Lanes on both sides of N. Lompa Lane and both sides of Airport Road along the property frontage

### ***Trip Generation***

Trip generation rates from *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE) were used to develop trip generation estimates for the proposed project based on the Multifamily Housing rates. **Table 3** shows the Daily, AM peak hour, and PM peak hour trip generation estimates.

**Table 3: Trip Generation Estimates**

Land Use (ITE Code)	Size <sup>1</sup>	Trips <sup>2</sup>				
		Daily	AM	AM In/Out	PM	PM In/Out
Multifamily Housing (220)	306 du	2,062	122	29 / 93	156	98 / 58

Notes: 1. du = dwelling units

2. Trips were calculated based on the following rates per du: Daily – 6.74; AM – 0.4 (24% in / 76% out); PM – 0.51 (63% in / 37% out)

Source: Headway Transportation, 2022

As shown in the table, the project is expected to generate 2,062 Daily, 122 AM peak hour, and 156 PM peak hour trips. The project is anticipated to be constructed in a single phase.



### ***Trip Distribution***

Project trips were distributed to the adjacent roadway network based on existing traffic volumes, the locations of complimentary land uses, and anticipated travel patterns. Project trips were distributed based on the following:

- ▶ 40% to/from the north/west via US 50
- ▶ 25% to/from the south/west via 5th Street
- ▶ 20% to/from the east via US 50
- ▶ 10% to/from the south/east via 5th Street
- ▶ 5% to/from the north via Airport Road

**Figure 4** shows the project trip distribution and assignment.

### ***Project Access***

The project proposes to construct three full access driveways (single-lane approach, stop controlled), two accesses on N. Lompa Lane and one access on Airport Road between Desatoya Drive and Butti Way. The project will construct the west leg of the Airport Road / Desatoya Drive intersection and is proposed with separate eastbound left and thru/right turn lanes approaching Airport Road and side-street STOP control. The proposed driveways will meet Carson City's minimum driveway spacing of 185' feet.

AASHTO recommends an Intersection Sight Distance (ISD) of at least 280 feet on roadways with a 25 MPH posted speed limit. Both proposed project driveways will be constructed on the outside of the horizontal curves on Airport Road. **Exhibit 2** shows the existing sight lines from the approximate driveway locations.





**Exhibit 2. Sight Lines from Driveway Approaches**

As shown in the exhibit, it is anticipated that both proposed project driveways will have adequate sight lines on Airport Road. The project should not construct structures or vegetation impeding intersection sight distance (280 feet each direction with the driver's eye 15 feet back from the edge of travel lane). The project should also provide adequate intersection distance for each project driveway on N. Lompa Lane as shown in **Figure 2**.

## BASELINE PLUS PROJECT CONDITIONS

### ***Traffic Volumes***

Project trips (**Figure 4**) were added to the Baseline traffic volumes (**Figure 3**) to develop the Baseline Plus Project conditions traffic volumes, shown on **Figure 5**.

### ***Intersection Level of Service***

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Baseline Plus Project traffic volumes, lane configurations and controls (Figure 5). **Table 4** shows the level of service results and the technical calculations are provided in **Appendix C**. Existing signal timing was obtained from Carson City and used in this analysis scenario.

**Table 4: Baseline Plus Project Intersection Level of Service**

Int. ID	Intersection	Control	AM		PM	
			Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1	US 50 / N. Lompa Lane	Signal				
	Overall		22.2	C	24.3	C
2	US 50 / Airport Road	Signal				
	Overall		26.0	C	34.7	C
3	Airport Road / Gordonia Drive	All-Way Stop				
	Overall		9.4	A	9.5	A
4	Airport Road / Desatoya Drive	Side Street Stop				
	Overall		3.4	A	2.5	A
	Eastbound Approach		11.9	B	12.4	B
	Westbound Approach		14.1	B	12.9	B
	Northbound Left		7.8	A	7.8	A
	Southbound Left		7.8	A	7.9	A
5	Airport Road / South Project Dwy	Side Street Stop				
	Overall		0.3	A	0.3	A
	Eastbound Approach		11.7	B	10.7	B
	Northbound Left		8.1	A	7.8	A
6	Airport Road / Butti Way	Side Street Stop				
	Overall		3.1	A	2.1	A
	Westbound Left		16.2	C	13.8	B
	Westbound Right		9.7	A	10.3	B
	Southbound Left		7.7	A	7.9	A
7	5 <sup>th</sup> Street / Airport Road	Side Street Stop				
	Overall		8.8	A	7.2	A
	Southbound Left		45.1	E	54.2	F
	Southbound Right		19.1	C	12.0	B
	Eastbound Left		9.1	A	8.8	A

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.

Source: Headway Transportation, 2022

With addition of project traffic, the study intersections and driveways are expected to operate at acceptable overall levels of service. The southbound left movement at the 5<sup>th</sup> Street / Airport Road intersection is anticipated to degrade to LOS "F". Improvements to mitigate the increased delay are discussed later in this report.



## FUTURE YEAR CONDITIONS

The Future Year analysis estimates operating conditions for the 20 year horizon. As stated previously, the Baseline Conditions scenario is very comprehensive including recent anticipated/approved projects within the project vicinity. It is important to note that the most recent CAMPO travel demand model estimates a minor amount of growth (0.5% to 1% per year) on most roadway segments. This subject project is included in the most recent travel demand model as the Red Ltd Development.

### ***Traffic Volume Forecasts***

Due to the comprehensive Baseline Conditions scenario, the existing traffic volumes were factored higher by approximately 0.5% per year on US 50 and 0.25% per year on all other roadways for 20 years (1.1 and 1.05 growth rate factor, respectively). To be conservative, but not to double count the project traffic, the aforementioned approved/anticipated development projects were then added to the factored volumes. Additionally, project traffic generated by the anticipated apartment development (312 d.u.) immediately north of the project site was also included in the Future Year scenario. **Figure 6** shows the Future Year (No Project) traffic volumes, lane configurations, and controls at the study intersections.

### ***Intersection Level of Service***

**Table 5** shows the Future Year conditions level of service results and the technical calculations are provided in **Appendix D**. Existing signal timing was obtained from Carson City. Minor timing adjustments were made at the US 50 / N. Lompa Lane intersection during the AM peak hour to account for future growth south of US 50. The overall cycle length and green times on mainline US 50 were unchanged.



**Table 5: Future Year Intersection Level of Service**

Int. ID	Intersection	Control	AM		PM	
			Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1	US 50 / N. Lompa Lane	Signal				
	Overall		25.3	C	25.7	C
2	US 50 / Airport Road	Signal				
	Overall		28.3	C	37.3	D
3	Airport Road / Gordonia Drive	All-Way Stop				
	Overall		9.7	A	9.9	A
4	Airport Road / Desatoya Drive	Side Street Stop				
	Overall		2.3	A	1.7	A
	Westbound Approach		12.9	B	12.4	B
	Southbound Left		7.8	A	8.1	A
6	Airport Road / Butti Way	Side Street Stop				
	Overall		3.1	A	2.1	A
	Westbound Left		15.9	C	13.9	B
	Westbound Right		9.7	A	10.3	B
	Southbound Left		7.7	A	7.9	A
7	5 <sup>th</sup> Street / Airport Road	Side Street Stop				
	Overall		8.8	A	6.9	A
	Southbound Left		45.2	E	49.7	E
	Southbound Right		18.9	C	11.9	B
	Eastbound Left		9.1	A	8.8	A

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.

Source: Headway Transportation, 2022

As shown in the table, all study intersections and movements operate overall within policy level of service thresholds under the Future Year scenario. The southbound left turn movement at the 5<sup>th</sup> Street / Airport Road intersection is anticipated to function at LOS "F" without the project.

## FUTURE YEAR PLUS PROJECT CONDITIONS

### **Traffic Volumes**

Project trips (**Figure 4**) were added to the Future Year traffic volumes (**Figure 6**) to develop the Future Year Plus Project conditions traffic volumes, shown on **Figure 7**. To confirm consistency with the CAMPO Travel demand model, a comparison was conducted between existing traffic volumes and the Future Year Plus Project traffic volumes as shown in **Table 6**.



**Table 6. Future Year Forecast Comparison**

<b>Location →</b>	<b>US 50</b>	<b>US 50</b>	<b>US 50</b>	<b>Airport Rd</b>	<b>Airport Rd</b>	<b>Airport Rd</b>	<b>5th St</b>	<b>5th St</b>
	<i>W/O N. Lompa</i>	<i>W/O Airport</i>	<i>E/O Airport</i>	<i>S/O US 50</i>	<i>N/O Butti</i>	<i>N/O 5th</i>	<i>W/O Airport</i>	<i>E/O Airport</i>
<b>1. CAMPO Demand Model Volumes</b>								
2020 CAMPO ADT	39,535	37,160	28,431	6,838	1,675	2,081	5,273	4,609
2050 CAMPO ADT	45,598	41,334	32,220	8,014	2,660	3,172	6,792	4,855
Model Difference 2050-2020	6,063	4,174	3,789	1,176	985	1,091	1,519	246
30 Years % Change	15%	11%	13%	17%	59%	52%	29%	5%
% per year	0.5%	0.4%	0.4%	0.6%	2.0%	1.7%	1.0%	0.2%
<b>20 years growth factor</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>1.4</b>	<b>1.3</b>	<b>1.2</b>	<b>1.0</b>
<b>2. Studied Peak Hour Segment Volumes</b>								
Existing AM	2,765	2,302	2,014	480	384	419	806	737
Existing PM	3,416	2,950	2,481	668	333	346	765	611
2040 AM	3283	2660	2402	643	567	589	1046	919
2040 PM	4069	3415	2973	916	597	591	1001	704
AM Growth Rate	1.2	1.2	1.2	1.3	1.5	1.4	1.3	1.2
PM Growth Rate	1.2	1.2	1.2	1.4	1.8	1.7	1.3	1.2
<b>Resultant Growth Rate</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.4</b>	<b>1.6</b>	<b>1.6</b>	<b>1.3</b>	<b>1.2</b>

As shown in the table, the Future Year peak hour segment volumes and projected growth rates within this study are just slightly higher than what is anticipated with the CAMPO travel demand model.

### ***Intersection Level of Service***

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Future Year Plus Project traffic volumes, lane configurations, and controls. **Table 7** shows the level of service results and the technical calculations are provided in **Appendix E**. Existing signal timing was obtained from Carson City. Minor timing adjustments were made at the US 50 / N. Lompa Lane intersection during the AM peak hour to account for future growth south of US 50. The overall cycle length and green times on mainline US 50 were unchanged.



**Table 7: Future Year Plus Project Intersection Level of Service**

Int. ID	Intersection	Control	AM		PM	
			Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1	US 50 / N. Lompa Lane	Signal				
	Overall		28.7	C	28.1	C
2	US 50 / Airport Road	Signal				
	Overall		28.9	C	38.7	D
3	Airport Road / Gordonia Drive	All-Way Stop				
	Overall		10.0	B	10.4	B
4	Airport Road / Desatoya Drive	Side Street Stop				
	Overall		3.3	A	2.4	A
	Eastbound Approach		12.3	B	13.3	B
	Westbound Approach		14.8	B	14.0	B
	Northbound Left		7.9	A	7.9	A
	Southbound Left		7.8	A	8.1	A
5	Airport Road / South Project Dwy	Side Street Stop				
	Overall		0.3	A	0.2	A
	Eastbound Approach		12.0	B	11.2	B
	Northbound Left		8.1	A	7.9	A
6	Airport Road / Butti Way	Side Street Stop				
	Overall		3.0	A	2.0	A
	Westbound Left		17.0	C	14.8	B
	Westbound Right		9.8	A	10.6	B
	Southbound Left		7.7	A	8.0	A
7	5 <sup>th</sup> Street / Airport Road	Side Street Stop				
	Overall		10.2	B	8.3	B
	Southbound Left		51.6	F	66.9	F
	Southbound Right		20.8	C	12.2	B
	Eastbound Left		9.1	A	8.9	A

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.

Source: Headway Transportation, 2022

With addition of project traffic, the southbound left turn movement at the 5<sup>th</sup> Street / Airport Road intersection is anticipated to degrade from LOS "E" to LOS "F". All other study intersections and movements operate within overall level of service policy.

### ***Intersection Mitigations***

As noted, the southbound left turn movement at the 5<sup>th</sup> Street / Airport Road intersection is anticipated to degrade from LOS "E" to LOS "F" with addition of project traffic. It does not appear that the southbound left turn movement will trigger warrants for installing a traffic signal. Additionally, this location may not be ideal for all-way stop control as 5<sup>th</sup> Street carries a notably higher volume of traffic than Airport Road. Therefore, it is recommended that the project construct a High-T configuration at the 5<sup>th</sup> Street / Airport



Road intersection to allow for two-stage left turns from Airport Road. A preliminary High-T concept is included in **Figure 8**, attached. **Table 8** shows the mitigated level of service results for the 5<sup>th</sup> Street / Airport Road intersection with this improvement.

**Table 8: Future Year Plus Project Mitigated Intersection Level of Service**

Int. ID	Intersection	Control	AM		PM	
			Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
7	5 <sup>th</sup> Street / Airport Road	Side Street Stop (High-T)				
	Overall		6.9	A	5.7	A
	Southbound Left		18.3	C	25.9	D
	Southbound Right		20.8	C	12.2	B
	Eastbound Left		9.1	A	8.9	A

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.

Source: Headway Transportation, 2022

As shown in the table, the 5<sup>th</sup> Street / Airport Road southbound left turn movement is anticipated to operate at LOS "D" under the Future Year Plus Project scenario with a High-T configuration.

#### **Dedicated Turn Pocket Evaluation**

Turning movements at both accesses on Airport Road were evaluated to determine if dedicated right turn or left turn pockets would be required. NDOT's *2017 Access Management System and Standards (Attachment F)* provide turn lane warrants for unsignalized urban roadways and can be an applicable guide for Carson City lacking other standards. **Table 9** provides an evaluation of each turn lane warrant along Airport Road during the PM peak hour.

**Table 9. Turn Lane Warrants on Airport Road**

Intersection	Movement	Turn Volume	Approach Volume	Is Warrant Met?
Airport Road / Desatoya Drive	Southbound Right	19	305	No
	Northbound Left	27	325	Yes
Airport Road / South Project Access	Southbound Right	6	268	No
	Northbound Left	7	330	No

As shown in the table, only the northbound left turn at the Airport Road / Desatoya Drive intersection is anticipated to meet turn lane warrants. Therefore, it is recommended that the project construct a northbound left turn lane (100' pocket) at the Airport Road / Desatoya Drive intersection.

It is anticipated that the approach/through volumes on North Lompa Lane will not be high enough to trigger right-turn lane warrants. It is recommended that the project stripe a two-way left turn lane turn lane (TWLTL) on N. Lompa Lane between Airport Road and William Street/US 50.



***Multi-Way STOP Warrant Evaluation***

A preliminary multi-way stop warrant evaluation was conducted at the Airport Road / Desatoya Drive intersection under Future Plus Project Conditions. In order to determine that all-way stop controls are installed only where appropriate, warrants have been developed by the Federal Highway Administration published in the *Manual on Uniform Traffic Control Devices (MUTCD)*. Section 2B.07 Multi-Way Stop Applications of the *MUTCD* provides the following criteria to be considered in an engineering study for an all-way stop control installation:

***Warrant A*** - *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*

**Warrant A Evaluation:** This intersection is not intended to be signalized. Therefore, this warrant is not applicable.

**Warrant A Met? NO**

***Warrant B*** - *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*

**Warrant B Evaluation:** Only one crash was reported at the intersection in the most recent 3-year period of available data.

**Warrant B Met? NO**

***Warrant C - Minimum volumes:***

*C1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and*

*C2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour, but*

*C3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 % of the above values.*

**Warrant C Evaluation:** As shown on Figure 7, it is anticipated that the minor street peak hour volume entering the intersection will be less than 200 vehicles per hour.

**Warrant C Met? NO**



Warrant D - Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Warrant D Evaluation: Criteria B, C.1, and C.2 are not satisfied to 80 percent of the minimum values.

#### Warrant D Met? NO

In conclusion, none of the all-way stop warrants are met based on MUTCD evaluation. Minor street traffic volumes (eastbound approach) at the Airport Road / Desatoya Drive intersection were developed by assigning build-out traffic volumes of the proposed project. Minor diversion in traffic may occur from Menlo Drive. Note that N. Lompa Lane and Airport Road currently carry approximately 400 – 500 total vehicles (200 – 300 in each direction) during the peak hours. Traffic diversion from Menlo Drive is anticipated to be significantly less than the overall roadway volumes. Thus, it is not anticipated that minor street volumes, including diversion, would exceed 200 vehicles per hour for eight hours of the day. Therefore, an All-Way Stop is not appropriate at the Airport Road / Desatoya Drive intersection even under future traffic volumes.

#### **Queuing Analysis**

A Queuing Analysis was conducted to identify the appropriate size of turn pockets under Future Plus Project conditions with the proposed mitigations. **Table 10** summarizes the queuing analysis results.

**Table 10. Future Plus Project (with Mitigations) Queuing Analysis**

Intersection	Movement	Existing Storage Length (ft)	95 <sup>th</sup> Percentile AM Queue (ft)	95 <sup>th</sup> Percentile PM Queue (ft)	Design Pocket Length (ft)
US 50 / N. Lompa Lane	NBL	100	<b>311</b>	<b>282</b>	<b>115 + TWLTL</b>
	SBL	125	52	86	Existing
	EBL	175	55	169	Existing
	WBL	200	23	63	Existing
US 50 / Airport Road	NBL	150	<b>224</b>	<b>250</b>	Existing
	SBL	200	46	114	Existing
	EBL	150+	60	<b>274</b>	Existing
	EBR	150	35	155	Existing
	WBL	250	63	167	Existing
	WBR	150	11	20	Existing
Airport Road / Gordonia Drive	NB Approach	N/A	41	50	N/A
	SB Approach	N/A	42	55	N/A
	EB Approach	N/A	9	5	N/A
	WB Approach	N/A	10	3	N/A
Airport Road / Desatoya Dr	NBL	N/A	1	2	<b>100 Minimum</b>
	SBL	75	2	4	<b>75 Minimum</b>
	EBL	N/A	5	4	<b>100 Minimum</b>
	WB Approach	N/A	22	10	N/A



Intersection	Movement	Existing Storage Length (ft)	95 <sup>th</sup> Percentile AM Queue (ft)	95 <sup>th</sup> Percentile PM Queue (ft)	Design Pocket Length (ft)
Airport Road / South Project Access	NB Approach	N/A	1	1	N/A
	SB Approach	N/A	0	0	N/A
	EB Approach	N/A	3	2	N/A
Airport Road / Butti Way	SBL	100	2	3	Existing
	WBL	100	24	9	Existing
5th Street / Airport	SBL	140	41	36	Existing
	SBR	N/A	95	34	Existing
	EBL	125	9	24	Existing

As shown in the table, it is anticipated that the northbound left turn movement at the US 50 / N. Lompa Lane intersection and the northbound and eastbound left turn movements at the US 50 / Airport Road intersection are anticipated to queue beyond the existing storage length during peak hours.

Note that the existing northbound left turn pocket at the US 50 / N. Lompa Lane intersection is short at 100 feet. The length of the current turn pocket is limited to provide access to the commercial driveways immediately south of the intersection. Queuing could be reduced, but not completely mitigated, on N. Lompa Lane by either implementing signal timing adjustments or constructing signal improvements to allow for protected left-turn movements from N. Lompa Lane. Protected left turns from N. Lompa lane would require the signal to serve additional minor street phases (left-turn plus through) instead of only the signal permissive phase operating today. Both improvement options would require that additional time be dedicated to N. Lompa Lane and less time allocated to mainline US 50. Since mainline US 50 carries significant regional traffic within this segment, it is recommended that mainline phase timings should be preserved. It is recommended that the project restripe the northbound left turn pocket at the US 50 / N. Lompa Lane intersection as a 115-foot turn lane followed by a two-way left-turn lane (TWLTL). The proposed TWLTL serves as flexible vehicle storage during peak commute hours when higher traffic volumes and longer queues are anticipated. The project should continue the TWLTL on N. Lompa Lane south to Airport Road. The proposed lane configuration on N. Lompa Lane will include 3 travel lanes, one lane in each direction and a TWLTL, and 5 foot wide bike lanes on both sides. Parking would be prohibited on both sides on N. Lompa Lane and travel lanes will be slightly narrower (11 feet) near US 50.

Note that the proposed project does not add any traffic to the eastbound left turn movement at the US 50 / Airport Road intersection and that vehicles can queue into the center two-way left turn lane (TWLTL) which is a manageable condition. Extending the existing northbound left turn pocket at the US 50 / Airport Road intersection would cause access restrictions to the existing commercial businesses and shopping center which is not recommended. The existing configuration is deemed appropriate.

The proposed project will construct the Airport Road / Desatoya Drive intersection with the turn pocket recommendations listed in **Table 10**.



## CONCLUSIONS

The following is a list of our key findings and recommendations:

- ▶ The proposed project includes up to 306 multifamily housing units and is anticipated to generate approximately 2,062 Daily, 122 AM peak hour, and 156 PM peak hour trips on the external roadway network.
- ▶ Under Baseline and Future Year conditions, the study intersections are expected to operate within overall policy level of service thresholds. The southbound left turn at the 5<sup>th</sup> Street / Airport Road intersection is anticipated to operate at poor levels of service (LOS "E").
- ▶ Under Baseline Plus Project and Future Plus Project conditions, the study intersections are expected to operate within overall policy level of service thresholds. The southbound left turn at the 5<sup>th</sup> Street / Airport Road intersection is anticipated to operate at poor levels of service (LOS "E"/"F") unless improved.
- ▶ The proposed project driveways and accesses meet Carson City's minimum driveway spacing requirements.
- ▶ The project should provide adequate Intersection Sight Distance (ISD) of at least 280 feet at all project driveways.
- ▶ The project proposes to construct the following improvements:
  - » Half-street improvements on the west side of the existing N. Lompa Lane
  - » The remaining N. Lompa Lane roadway segment between Modoc Court and Airport Road with two-way left-turn lane (TWLTL) striping
  - » 5 foot wide bicycle Lanes on both sides of N. Lompa Lane and both sides of Airport Road along the property frontage
- ▶ It is recommended that the project construct a northbound left turn pocket (100' pocket) at the Airport Road / Desatoya Drive intersection.
- ▶ It is recommended that the project stripe a 115 northbound left turn pocket at the US 50 / N. Lompa Lane intersection and stripe a two-way left-turn lane south to Airport Road.
- ▶ It is recommended that the project construct a High-T configuration at the 5<sup>th</sup> Street / Airport Road intersection enabling two-stage southbound left turns.



## Study Locations

- 1 US 50 / N. Lompa Ln
- 2 US 50 / Airport Rd
- 3 Airport Rd / Gordonia Dr
- 4 Airport Rd / Desatoya Dr / N. Lompa Ln
- 5 Airport Rd / S. Project Access
- 6 Airport Rd / Butti Way
- 7 5th St / Airport Rd

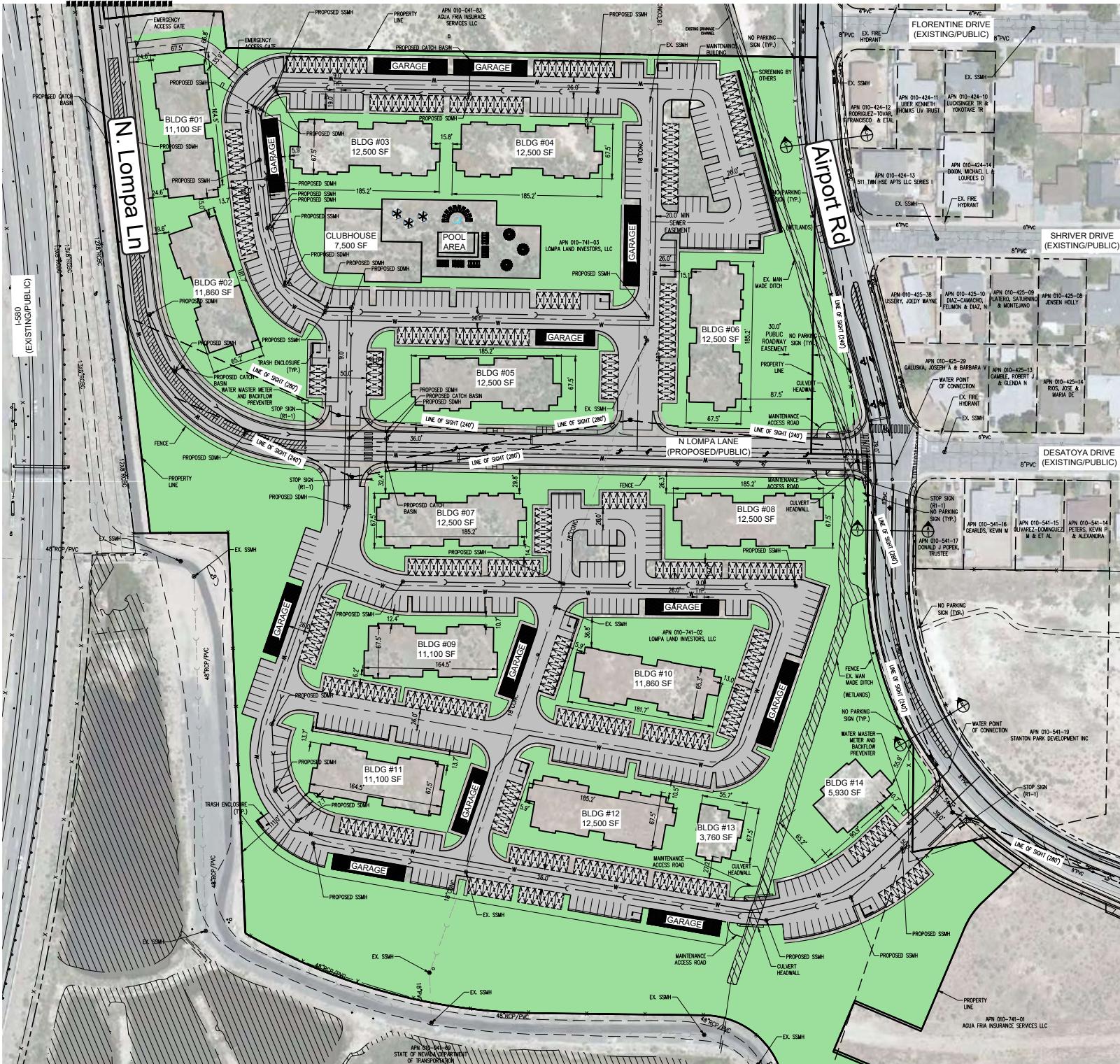


 - Project Site  
 - Study Intersections

Figure 1

Lompa Ranch East  
Traffic Impact Study  
Project Location

MATCHLINE  
SEE SHEET 4

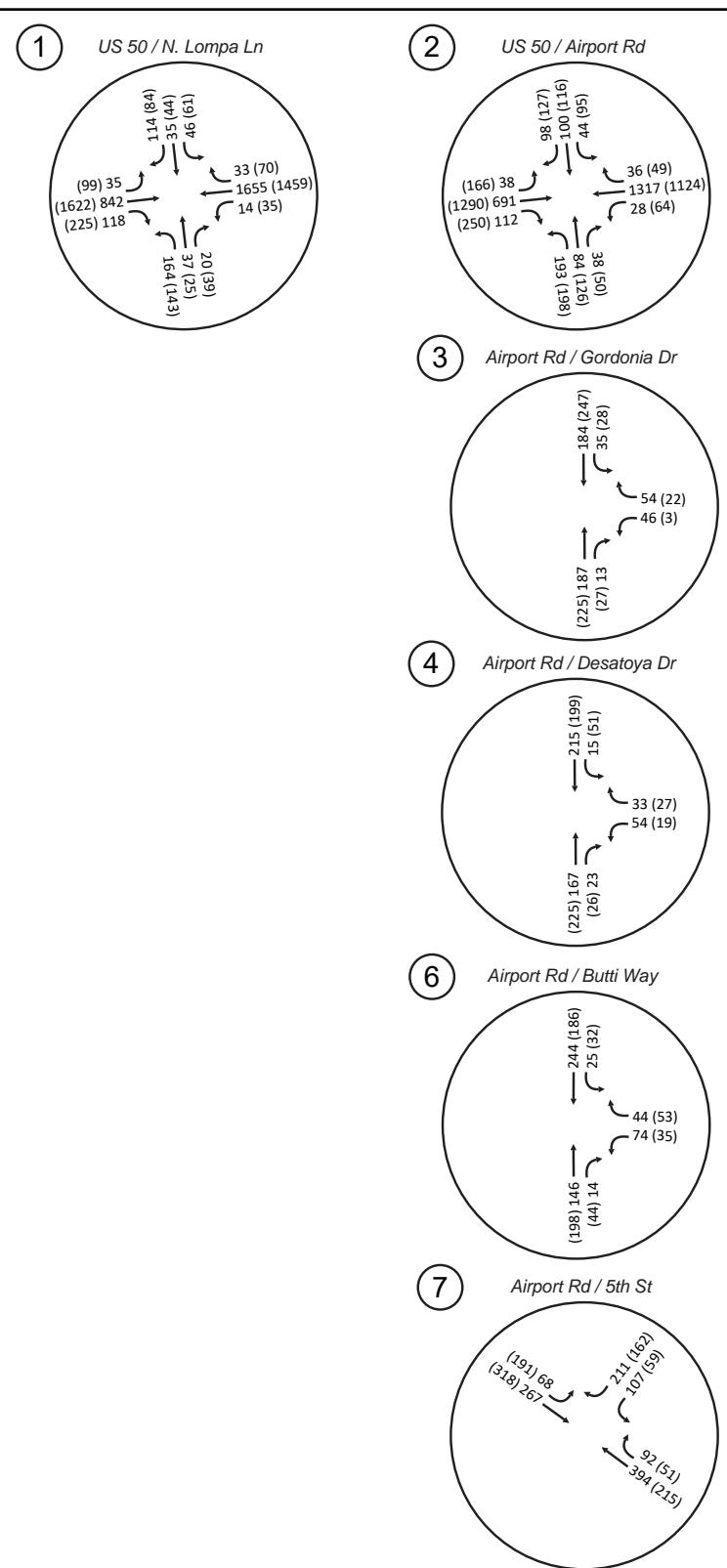
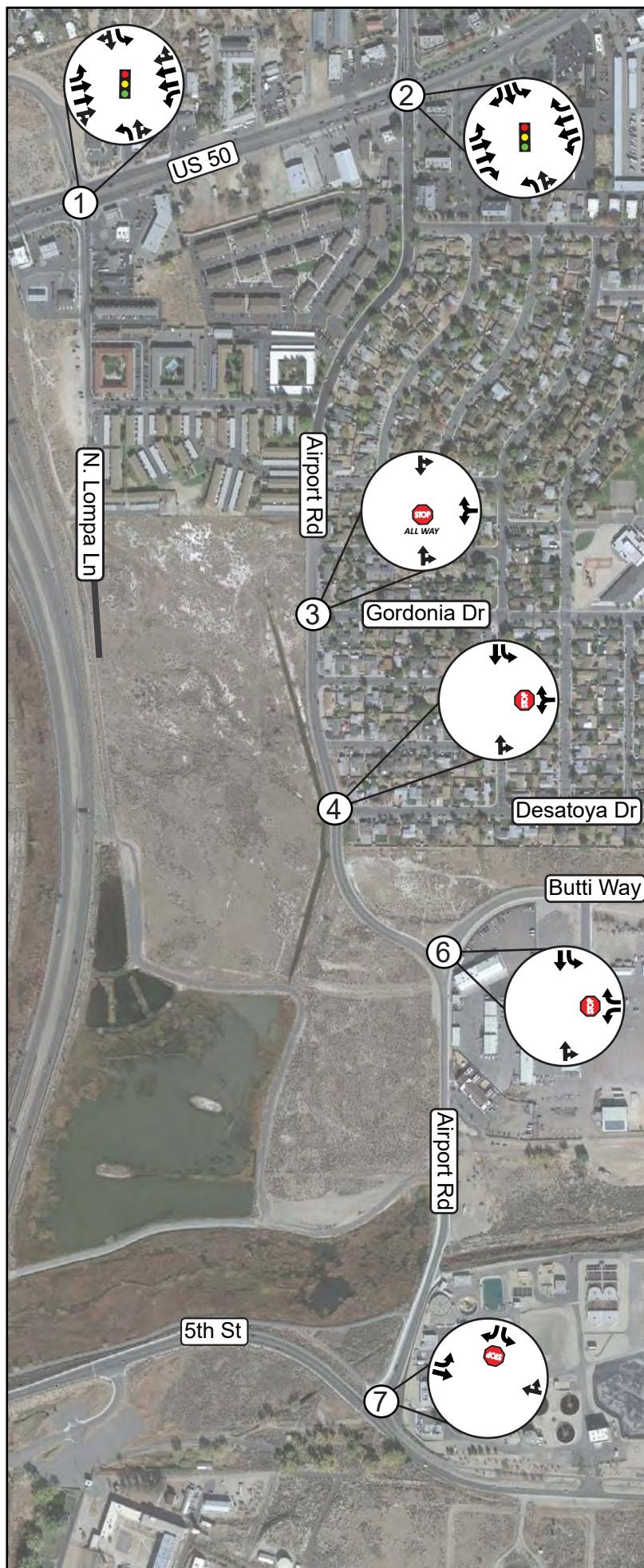


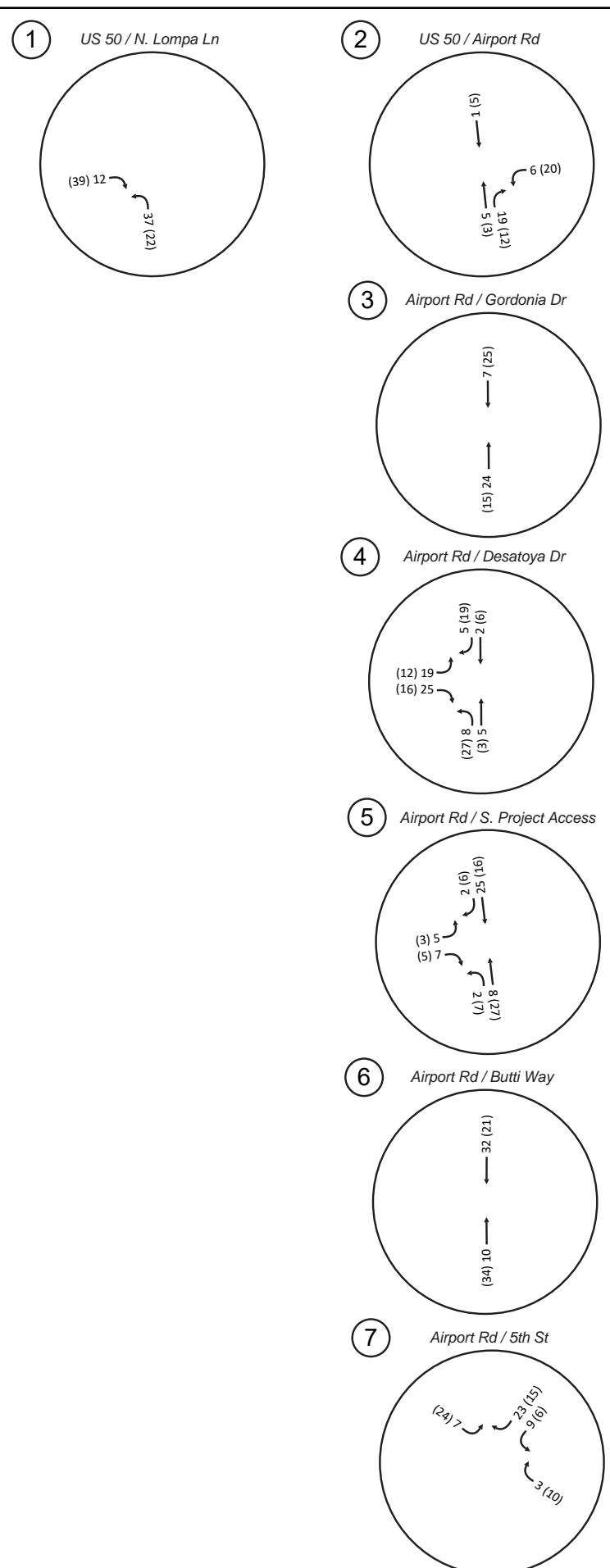
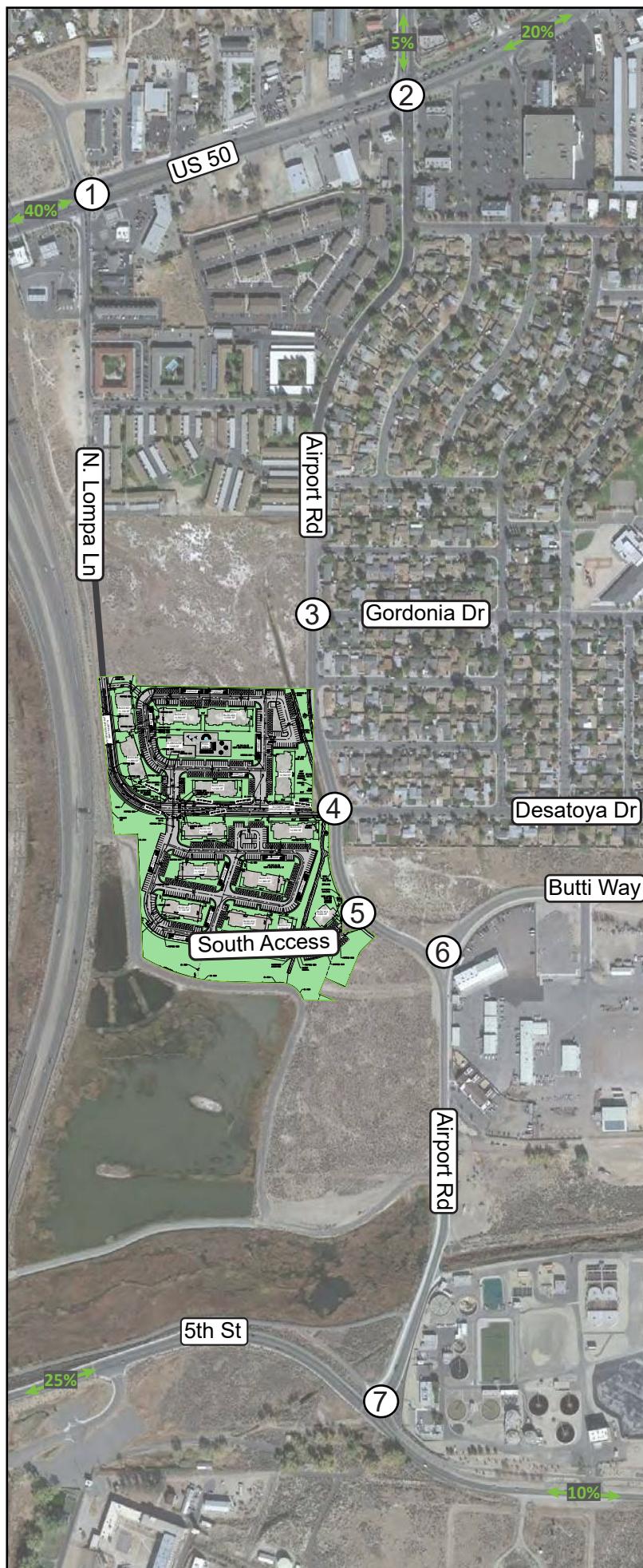
- Project Site

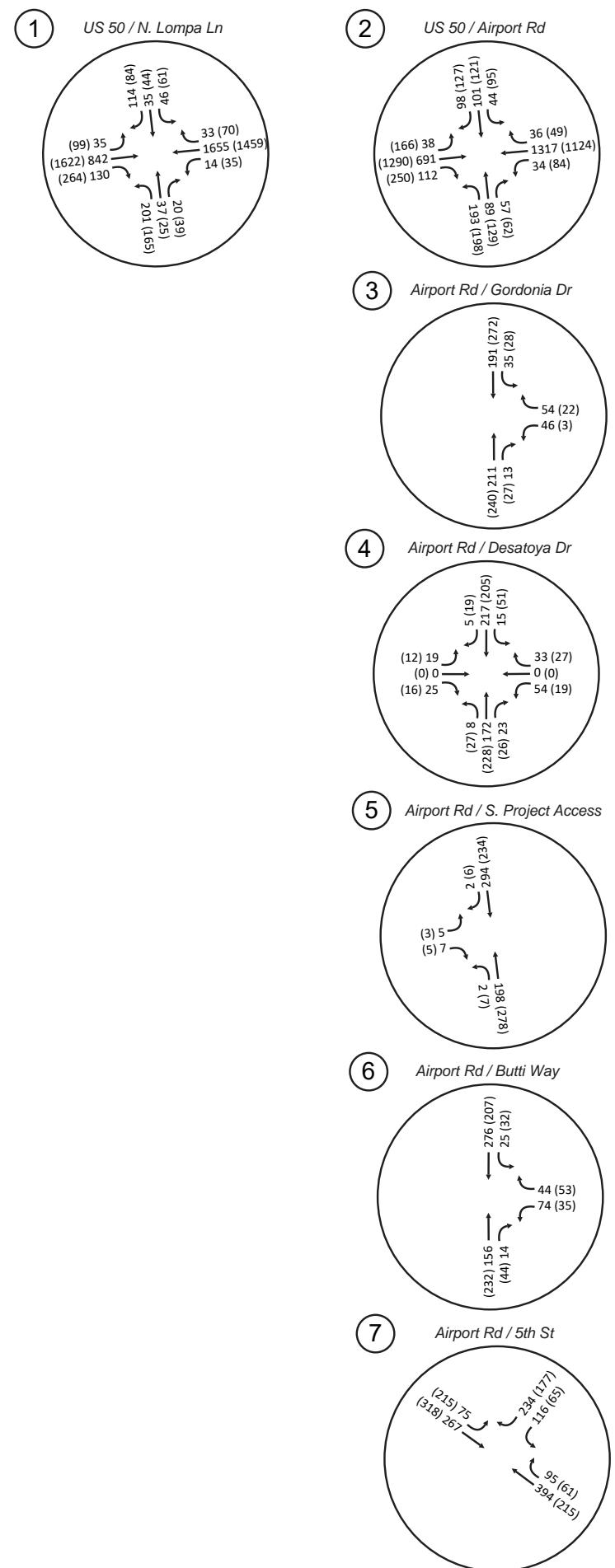
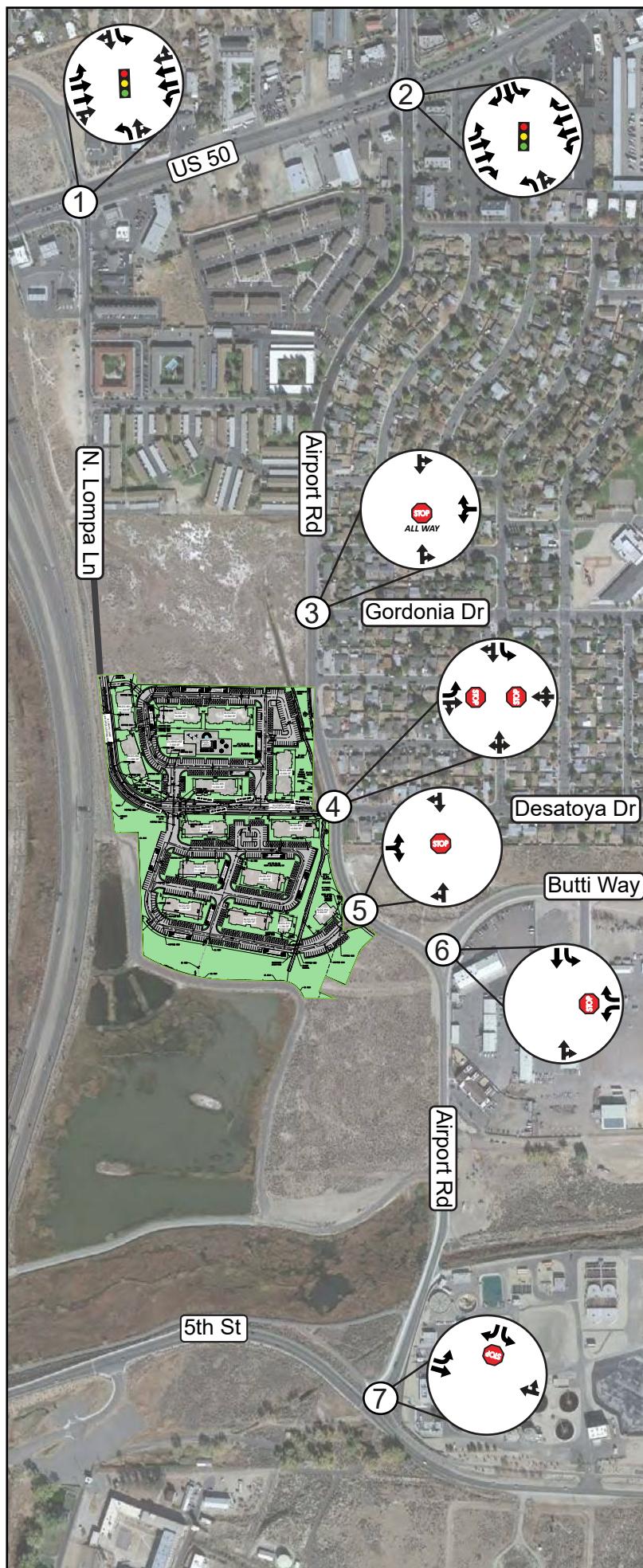
- Study Intersections

Figure 12

Lompa Ranch East  
Traffic Impact Study  
Preliminary Site Plan







Baseline Plus Project Traffic Volumes, Lane Configurations, and Controls

Lompa Ranch East  
Traffic Impact Study

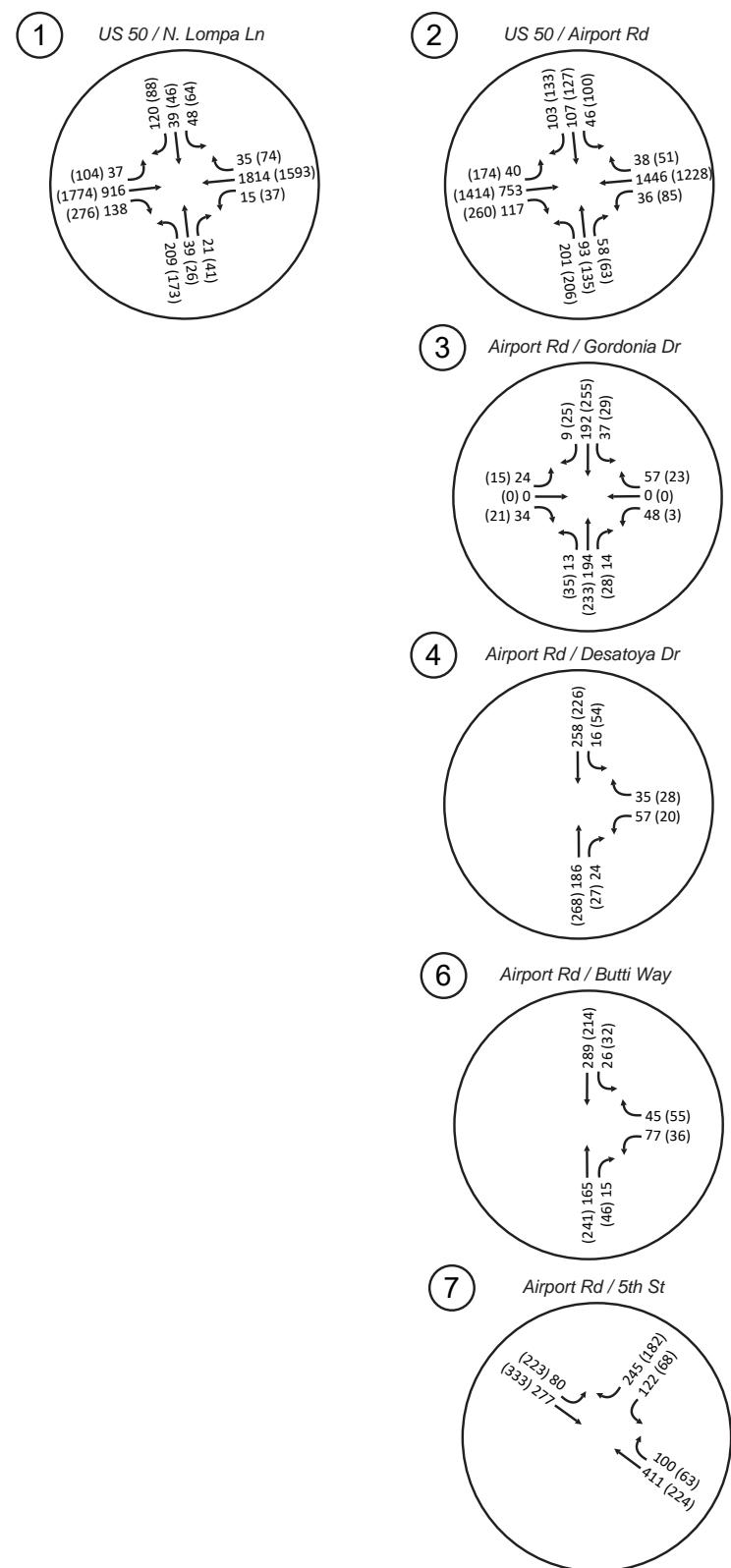
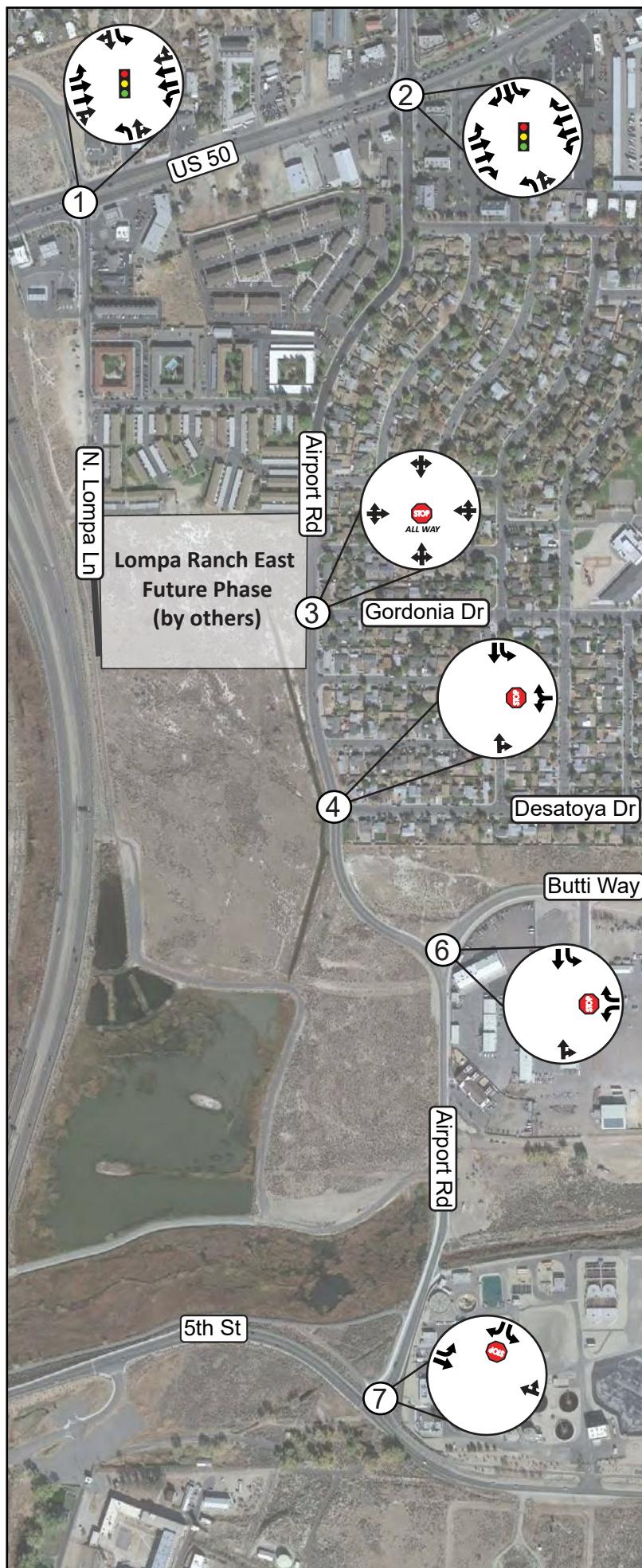
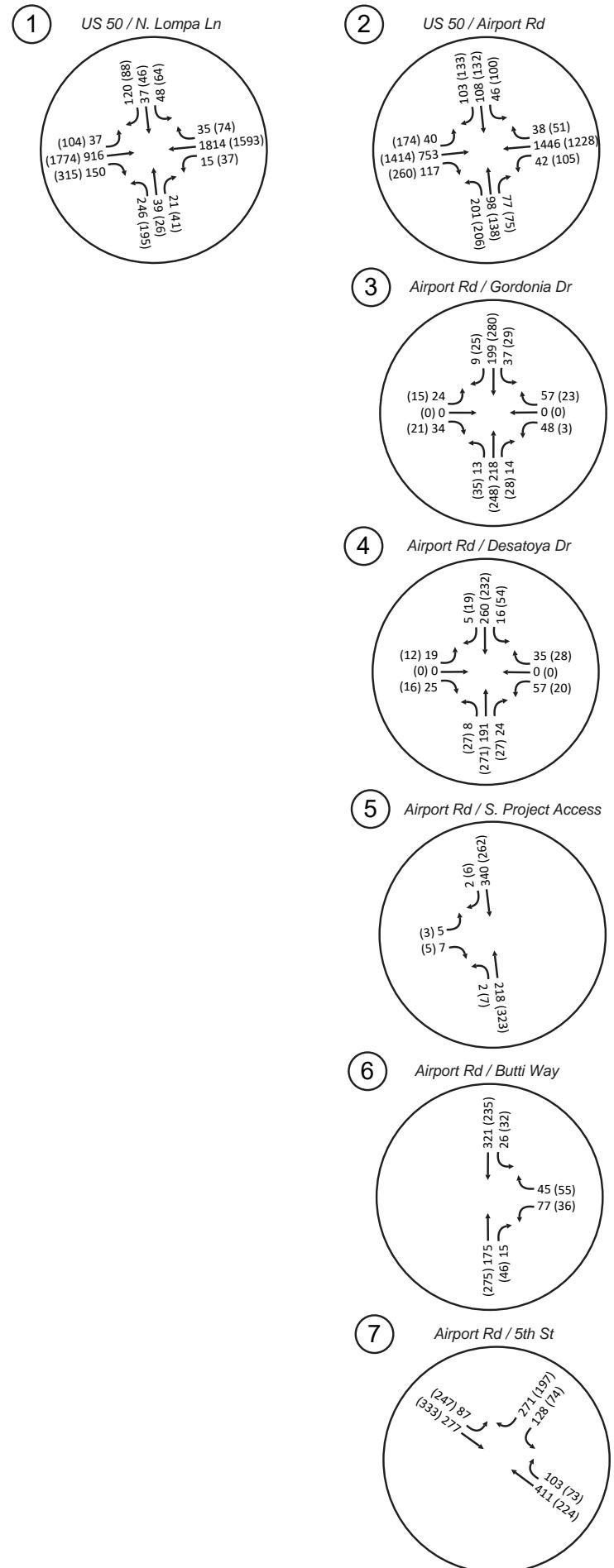
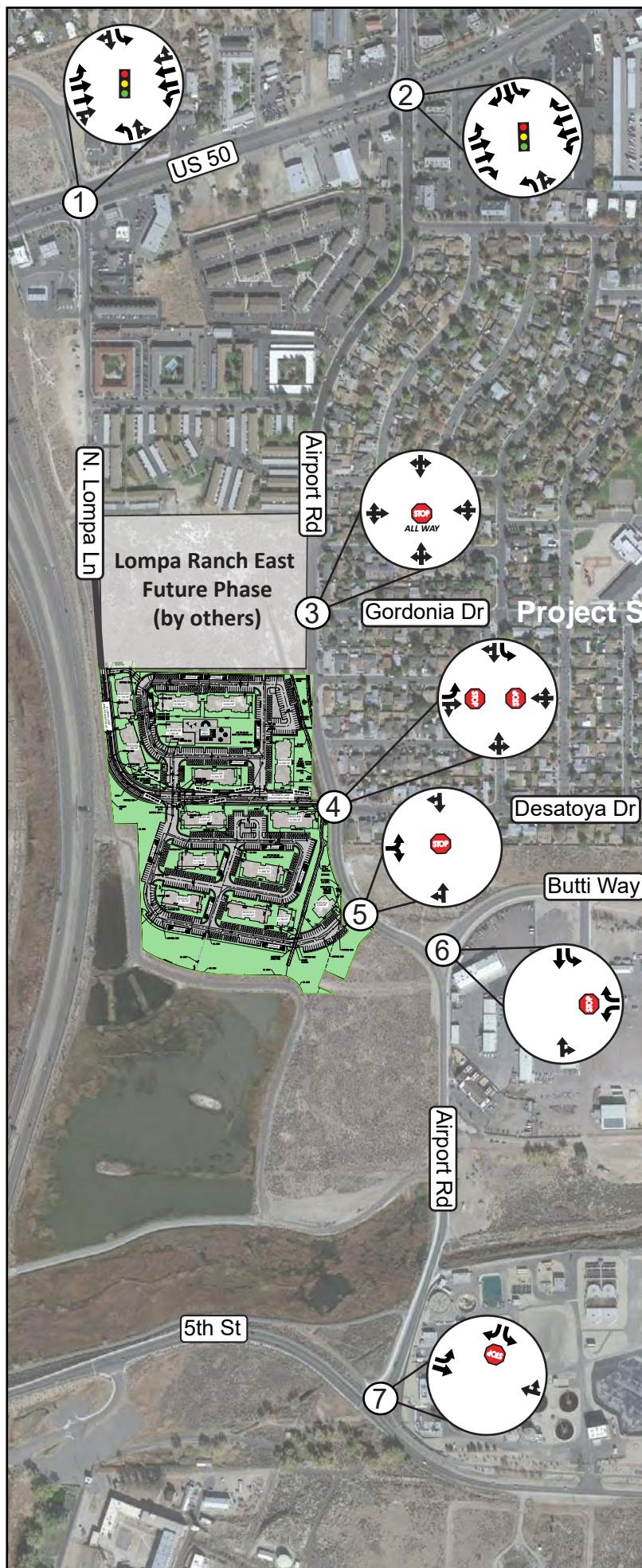


Figure 6  
Lompa Ranch East  
Traffic Impact Study  
Future Year Traffic Volumes, Lane Configurations, and Controls



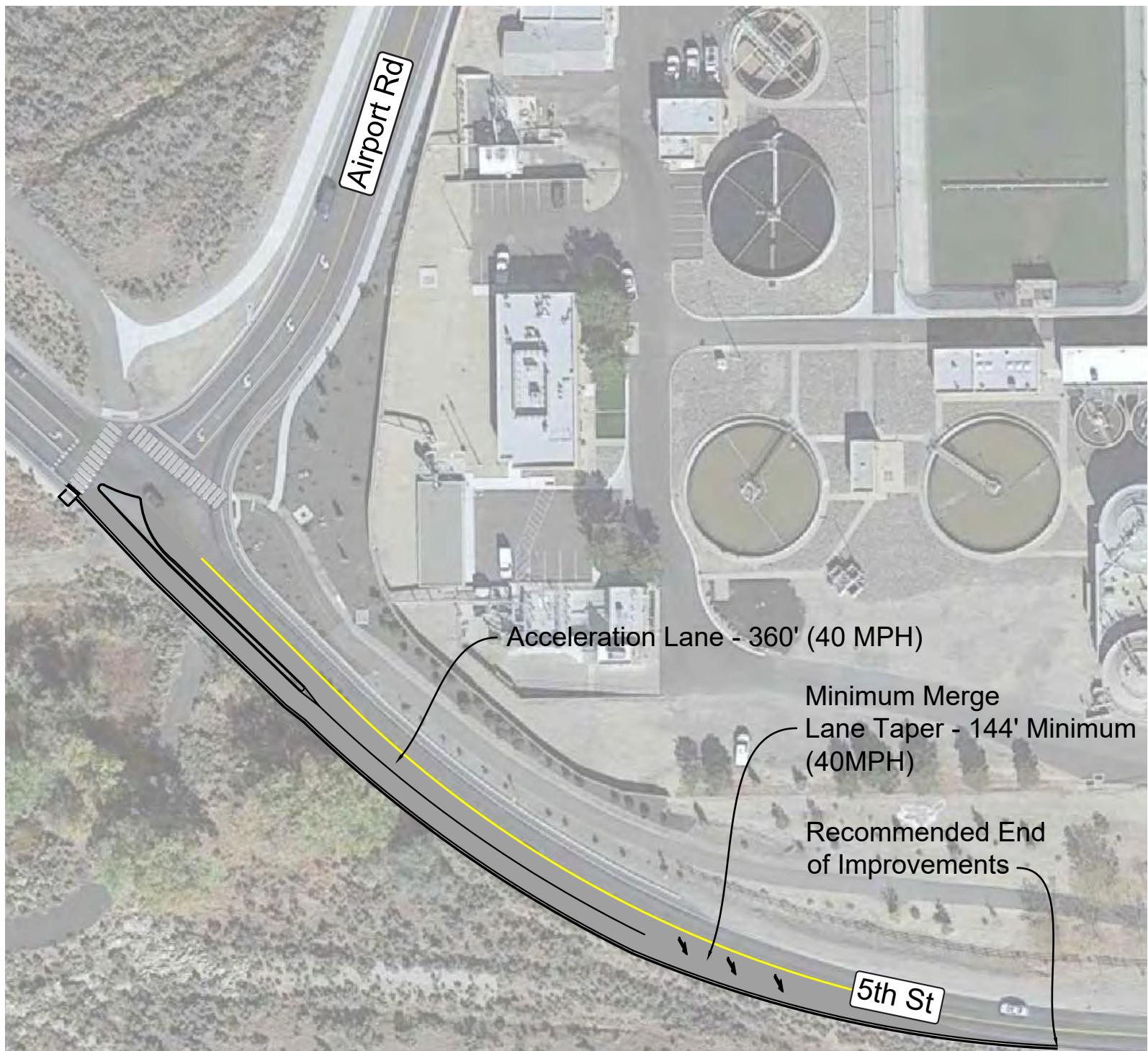


Figure 18

Lompa Ranch East  
Traffic Impact Study  
Preliminary High-T Concept

# **Appendix A**

## **NDOT Crash Data History**



ROAD SEGMENT  
N LOMPA LN SEG US 50 TO MODOC CT  
01 JAN 17 - 01 JAN 20

**COUNTY: CARSON**

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Adj. Mile Marker	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir	V1 Driver Age	V1 Lane Num
PROPERTY DAMAGE ONLY	7-Nov-2017	2017	01:02 PM	N LOMPA LN	195	S	US50E	0.20	CLEAR			PDO		SIDESWIPE, OVERTAKING	2	HATCHBACK, 4 DOOR	S		
INJURY ACCIDENT	1-Dec-2017	2017	02:26 PM	N LOMPA LN	100	S	US50E	0.22	CLEAR	1		PDO	C	ANGLE	2	SEDAN	W	74	1
PROPERTY DAMAGE ONLY	10-Feb-2018	2018	08:31 PM	N LOMPA LN			AT INT	US50E	0.24	CLEAR		PDO	C	ANGLE	2	PICKUP	N	22	
INJURY ACCIDENT	6-Apr-2019	2019	05:17 PM	N LOMPA LN			AT INT	US50E	0.24	CLEAR	1	PDO	C	REAR-END	1				1
INJURY ACCIDENT	11-Nov-2019	2019	04:25 PM	N LOMPA LN	60	N	US50E	0.25	CLEAR	1		PDO	C	REAR-END	2	SEDAN, 4 DOOR	N	24	1
PROPERTY DAMAGE ONLY	7-Jun-2019	2019	06:15 PM	N LOMPA LN	100	N	US50E	0.26	CLEAR			PDO		ANGLE	2	CARRY-ALL	N	1	
PROPERTY DAMAGE ONLY	5-Dec-2017	2017	01:18 PM	N LOMPA LN	371	N	US50E	0.31	CLEAR			PDO		SIDESWIPE, OVERTAKING	2	VANETTE	N		

V1 Action	V1 Driver Factors	V1 Driver Distracted	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action
PASSING OTHER VEHICLE	OTHER IMPROPER DRIVING		UNSAFE LANE CHANGE			VAN	S			TURNING LEFT
NOT REPORTED	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY			SEDAN	S	20	1	GOING STRAIGHT
TURNING LEFT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY			CARRY-ALL	S	20		GOING STRAIGHT
TURNING RIGHT			HIT AND RUN							
GOING STRAIGHT	DRUG INVOLVEMENT		FOLLOWED TOO CLOSELY	MOTOR VEHICLE IN TRANSPORT		CARRY-ALL	N	34	1	STOPPED
GOING STRAIGHT	APPARENTLY NORMAL		OTHER	MOTOR VEHICLE IN TRANSPORT		PICKUP	N		1	TURNING LEFT
MAKING U-TURN	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY		SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	N			GOING STRAIGHT

V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
APPARENTLY NORMAL				SLOW/STOPPED VEHICLE						CCSO	2404705
APPARENTLY NORMAL							DRY	DAYLIGHT	NONE	NHP	2416409
APPARENTLY NORMAL							DRY	DARK - CONTINUOUS LIGHTING	NONE	NHP	2420641
APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT	FAILURE TO YIELD RIGHT OF WAY	DRY	DAYLIGHT	NONE	CCSO	3122145	
APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT	MOTOR VEHICLE IN TRANSPORT	MOTOR VEHICLE IN TRANSPORT	DRY	DAYLIGHT	NONE	CCSO	3020131	
APPARENTLY NORMAL		MADE AN IMPROPER TURN	MOTOR VEHICLE IN TRANSPORT							CCSO	3014788
APPARENTLY NORMAL										CCSO	2404729

ROAD SEGMENT  
AIRPORT RD SEG E 5TH ST TO US 50  
01 JAN 17 - 01 JAN 20

County:	Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Adj. Mile Marker	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir
PROPERTY DAMAGE ONLY	2-Feb-2017	2017	06:49 PM	AIRPORT RD				US50	1.08	CLEAR			PDO	REAR-END	2	SEDAN, 4 DOOR	N	
INJURY ACCIDENT	20-Jul-2017	2017	07:36 AM	AIRPORT RD				DESATOYA DR	0.51	CLEAR	1		C	SIDESWIPE, MEETING	2	SEDAN, 4 DOOR	W	
PROPERTY DAMAGE ONLY	25-Jul-2017	2017	06:50 PM	AIRPORT RD				DOUGLAS LN	0.77	CLEAR			PDO	ANGLE	2	SEDAN, 4 DOOR	S	
PROPERTY DAMAGE ONLY	22-Aug-2017	2017	07:23 AM	AIRPORT RD	400	S		BUTTI WAY	0.28	CLEAR			PDO	REAR-END	2	PICKUP	S	
INJURY ACCIDENT	25-Nov-2017	2017	02:45 PM	AIRPORT RD	200	S		WOODSIDE DR	0.94	CLEAR	1		A	NON-COLLISION	1	MOTORCYCLE	N	
PROPERTY DAMAGE ONLY	13-Apr-2019	2019	09:56 AM	AIRPORT RD				US50E	1.08	CLEAR			PDO	REAR-END	2	VAN		
PROPERTY DAMAGE ONLY	11-May-2019	2019	09:34 PM	AIRPORT RD				WOODSIDE DR	0.98	CLEAR			PDO	NON-COLLISION	1	HARDTOP, 4 DOOR	E	
PROPERTY DAMAGE ONLY	30-Aug-2019	2019	09:12 PM	AIRPORT RD				US50E	1.08	CLEAR			PDO	NON-COLLISION	1	SEDAN, 4 DOOR	S	
PROPERTY DAMAGE ONLY	5-Sep-2019	2019	04:00 PM	AIRPORT RD				US50E	1.08	CLOUDY			PDO	SIDESWIPE, MEETING	2	SEDAN, 4 DOOR	N	
PROPERTY DAMAGE ONLY	25-Oct-2019	2019	09:36 PM	AIRPORT RD				US50E	1.08	CLEAR			PDO	ANGLE	2	HARDTOP, 4 DOOR	W	
PROPERTY DAMAGE ONLY	15-Dec-2019	2019	03:06 PM	AIRPORT RD				US50E	1.08	CLEAR			PDO	REAR-END	2	HARDTOP, 2 DOOR	W	
PROPERTY DAMAGE ONLY	28-Dec-2019	2019	06:46 PM	AIRPORT RD	391	N	E 5TH ST		0.07	CLEAR			PDO	HEAD-ON	2	HATCHBACK, 2 DOOR	N	
										Sum: 0	Sum: 2	Count: 10						
										Count: 0	Count: 2							
										Total:	12							

V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracted	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num
		GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY		SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	N		
37	2	TURNING LEFT	APPARENTLY NORMAL		DISREGARDED TRAFFIC SIGNS, SIGNALS, ROAD MARKINGS			HATCHBACK, 4 DOOR	N	28	2
24		TURNING LEFT	APPARENTLY NORMAL		DOVE LEFT OF CENTER		SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	W	41	
35	1	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY			SEDAN, 4 DOOR	S	25	1
25	1	GOING STRAIGHT	OTHER IMPROPER DRIVING				OTHER NON-COLLISION				
	2	GOING STRAIGHT	INATTENTION/DISTRACTED	UNKNOWN	FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT		HATCHBACK, 4 DOOR	S		2
1		LEAVING LANE	HAD BEEN DRINKING		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD	DITCH	RAN OFF ROAD LEFT: DITCH				
26	L1	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT					
60	L1	TURNING LEFT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT		SEDAN, 4 DOOR	S	27	R1
18	1	ENTERING LANE	APPARENTLY NORMAL		UNSAFE LANE CHANGE	MOTOR VEHICLE IN TRANSPORT		HARDTOP, 4 DOOR	W	26	
72	2	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	MOTOR VEHICLE IN TRANSPORT		VAN	W	40	2
1		GOING STRAIGHT	HAD BEEN DRINKING		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD	MOTOR VEHICLE IN TRANSPORT		PICKUP	S		1

V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
STOPPED	APPARENTLY NORMAL										CCSO	2361566
GOING STRAIGHT	APPARENTLY NORMAL						DRY	DAYLIGHT	NONE	CCSO	2387362	
GOING STRAIGHT	APPARENTLY NORMAL				SLOW/STOPPED VEHICLE		DRY	DAYLIGHT	NONE	CCSO	2387365	
STOPPED	APPARENTLY NORMAL						DRY	DAYLIGHT	NONE	CCSO	2387465	
STOPPED	APPARENTLY NORMAL		OTHER	MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	2416008	
						MOTOR VEHICLE IN TRANSPORT				CCSO	3123986	
										CCSO	3014763	
TURNING RIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT		MOTOR VEHICLE IN TRANSPORT	DRY	DAYLIGHT	NONE	NHP	3151207	
ENTERING LANE	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT		MOTOR VEHICLE IN TRANSPORT	DRY	DARK - CONTINUOUS LIGHTING	NONE	CCSO	3020108	
STOPPED	APPARENTLY NORMAL			CARGO/EQUIPMENT LOSS OR SHIFT	CARGO/EQUIPMENT LOSS OR SHIFT	MOTOR VEHICLE IN TRANSPORT	DRY	DAYLIGHT	NONE	CCSO	3041192	
GOING STRAIGHT	APPARENTLY NORMAL		OTHER	MOTOR VEHICLE IN TRANSPORT						CCSO	3043248	

INTERSECTION DETAIL  
US50E @ N LOMPA LN  
01 JAN 16 - 01 JAN 21

COUNTY: CARSON CITY

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type
INJURY ACCIDENT	2-Feb-2017	2017	05:44 PM	US50E			AT INT	N LOMPA LN	CLEAR	1		C	REAR-END	2	
INJURY ACCIDENT	8-May-2017	2017	06:25 AM	US50E			AT INT	N LOMPA LN	CLOUDY	2		B	ANGLE	2	CARRY-ALL
PROPERTY DAMAGE ONLY	14-May-2017	2017	08:53 PM	US50E			AT INT	N LOMPA LN	CLOUDY			PDO	REAR-END	2	SEDAN, 4 DOOR
PROPERTY DAMAGE ONLY	8-Jul-2017	2017	06:32 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	ANGLE	2	PICKUP
PROPERTY DAMAGE ONLY	22-Jul-2017	2017	09:28 AM	US50E	125	E	N LOMPA LN	CLEAR				PDO	REAR-END	2	CARRY-ALL
PROPERTY DAMAGE ONLY	5-Oct-2017	2017	02:45 PM	US50E	200	E	N LOMPA LN	CLEAR				PDO	ANGLE	2	UTILITY
PROPERTY DAMAGE ONLY	24-Oct-2017	2017	04:03 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	SIDESWIPE, OVERTAKING	2	CARRY-ALL
PROPERTY DAMAGE ONLY	26-Oct-2017	2017	05:10 PM	US50E	200	W	N LOMPA LN	CLEAR				PDO	SIDESWIPE, MEETING	2	HARDTOP, 4 DOOR
PROPERTY DAMAGE ONLY	7-Nov-2017	2017	01:02 PM	N LOMPA LN	195	S	US50E	CLEAR				PDO	SIDESWIPE, OVERTAKING	2	HATCHBACK, 4 DOOR
PROPERTY DAMAGE ONLY	27-Nov-2017	2017	04:22 PM	US50E	452	E	N LOMPA LN	CLEAR				PDO	ANGLE	2	SEDAN
INJURY ACCIDENT	1-Dec-2017	2017	02:26 PM	N LOMPA LN	100	S	US50E	CLEAR		1		C	ANGLE	2	SEDAN
PROPERTY DAMAGE ONLY	5-Dec-2017	2017	01:18 PM	N LOMPA LN	371	N	US50E	CLEAR				PDO	SIDESWIPE, OVERTAKING	2	VANETTE
PROPERTY DAMAGE ONLY	21-Dec-2017	2017	04:46 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	REAR-END	2	FLATBED OR PLATFORM
INJURY ACCIDENT	2-Jan-2018	2018	12:00 PM	US50E			AT INT	N LOMPA LN	CLOUDY	1		C	REAR-END	3	HATCHBACK, 4 DOOR
PROPERTY DAMAGE ONLY	11-Jan-2018	2018	07:31 AM	US50E	50	W	N LOMPA LN	CLOUDY				PDO	REAR-END	3	PICKUP
PROPERTY DAMAGE ONLY	30-Jan-2018	2018	06:08 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	REAR-END	2	CARRY-ALL
PROPERTY DAMAGE ONLY	10-Feb-2018	2018	08:31 PM	N LOMPA LN			AT INT	US50E	CLEAR			PDO	ANGLE	2	PICKUP
INJURY ACCIDENT	13-Feb-2018	2018	01:04 PM	US50E	75	E	N LOMPA LN	CLEAR		2		B	REAR-END	3	SEDAN, 4 DOOR
PROPERTY DAMAGE ONLY	12-Mar-2018	2018	03:49 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	ANGLE	2	SEDAN, 4 DOOR
PROPERTY DAMAGE ONLY	20-Mar-2018	2018	04:20 PM	US50E	500	W	N LOMPA LN	RAIN				PDO	SIDESWIPE, OVERTAKING	2	PICKUP
PROPERTY DAMAGE ONLY	22-Mar-2018	2018	05:37 PM	US50E			AT INT	N LOMPA LN	RAIN			PDO	ANGLE	2	CARRY-ALL
INJURY ACCIDENT	25-Apr-2018	2018	01:40 PM	US50E	150	E	N LOMPA LN	CLEAR		1		C	REAR-END	3	HATCHBACK, 4 DOOR
PROPERTY DAMAGE ONLY	30-May-2018	2018	05:44 PM	US50E	50	E	N LOMPA LN	CLEAR				PDO	REAR-END	5	PICKUP
PROPERTY DAMAGE ONLY	21-Jun-2018	2018	02:16 PM	US50E	20	W	N LOMPA LN	CLEAR				PDO	SIDESWIPE, OVERTAKING	2	SEDAN
PROPERTY DAMAGE ONLY	26-Jun-2018	2018	12:10 PM	US50E	300	E	N LOMPA LN	CLEAR				PDO	SIDESWIPE, MEETING	2	CARRY-ALL
PROPERTY DAMAGE ONLY	27-Jul-2018	2018	05:30 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	REAR-END	3	PICKUP
INJURY ACCIDENT	22-Sep-2018	2018	09:43 AM	US50E	50	E	N LOMPA LN	CLEAR		1		C	REAR-END	2	UTILITY
PROPERTY DAMAGE ONLY	2-Nov-2018	2018	02:11 PM	US50E	300	W	N LOMPA LN	CLEAR				PDO	REAR-END	2	STATION WAGON
PROPERTY DAMAGE ONLY	7-Dec-2018	2018	04:22 PM	US50E	250	W	N LOMPA LN	CLOUDY				PDO	SIDESWIPE, MEETING	2	PICKUP
PROPERTY DAMAGE ONLY	8-Dec-2018	2018	05:45 PM	US50E			AT INT	N LOMPA LN	CLOUDY			PDO	ANGLE	2	CARRY-ALL
INJURY ACCIDENT	13-Dec-2018	2018	05:30 PM	US50E	500	E	N LOMPA LN	CLEAR		1		C	REAR-END	3	UTILITY
PROPERTY DAMAGE ONLY	29-Dec-2018	2018	12:40 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	REAR-END	2	PICKUP
PROPERTY DAMAGE ONLY	2-Jan-2019	2019	06:46 AM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	ANGLE	2	SEDAN
INJURY ACCIDENT	9-Jan-2019	2019	11:48 AM	US50E			AT INT	N LOMPA LN	CLOUDY	1		C	ANGLE	3	VAN
PROPERTY DAMAGE ONLY	6-Feb-2019	2019	07:06 PM	US50E			AT INT	N LOMPA LN	CLOUDY			PDO	ANGLE	2	SEDAN
PROPERTY DAMAGE ONLY	23-Feb-2019	2019	10:28 AM	US50E	50	E	N LOMPA LN	CLOUDY				PDO	REAR-END	2	SEDAN, 4 DOOR
PROPERTY DAMAGE ONLY	5-Mar-2019	2019	11:20 AM	US50E	10	E	N LOMPA LN	CLOUDY				PDO	BACKING	2	CARRY-ALL
INJURY ACCIDENT	8-Mar-2019	2019	04:55 PM	US50E	5	W	N LOMPA LN	CLOUDY		1		C	REAR-END	2	PICKUP
INJURY ACCIDENT	6-Apr-2019	2019	05:17 PM	N LOMPA LN			AT INT	US50E	CLEAR			C	REAR-END	1	
PROPERTY DAMAGE ONLY	12-Apr-2019	2019	11:12 AM	US50E	150	E	N LOMPA LN	CLOUDY				PDO	ANGLE	2	PICKUP
PROPERTY DAMAGE ONLY	5-Jun-2019	2019	07:00 AM	US50E	100	E	N LOMPA LN	CLEAR				PDO	ANGLE	2	SEDAN
PROPERTY DAMAGE ONLY	7-Jun-2019	2019	06:15 PM	N LOMPA LN	100	N	US50E	CLEAR				PDO	ANGLE	2	CARRY-ALL
PROPERTY DAMAGE ONLY	30-Jun-2019	2019	01:00 PM	US50E	300	E	N LOMPA LN	CLEAR				PDO	ANGLE	2	COUPE
PROPERTY DAMAGE ONLY	9-Jul-2019	2019	04:40 PM	US50E			AT INT	N LOMPA LN	CLOUDY			PDO	ANGLE	2	SEDAN, 4 DOOR
INJURY ACCIDENT	25-Jul-2019	2019	08:13 AM	US50E			AT INT	N LOMPA LN	CLEAR	5		C	ANGLE	2	UTILITY
PROPERTY DAMAGE ONLY	2-Aug-2019	2019	01:58 PM	US50E	350	E	N LOMPA LN	CLOUDY				PDO	ANGLE	2	PICKUP
PROPERTY DAMAGE ONLY	11-Sep-2019	2019	09:10 PM	US50E			AT INT	N LOMPA LN	CLEAR			PDO	ANGLE	2	PICKUP
PROPERTY DAMAGE ONLY	1-Oct-2019	2019	08:48 AM	US50E	12	W	N LOMPA LN	CLEAR				PDO	REAR-END	3	SEDAN, 4 DOOR
PROPERTY DAMAGE ONLY	19-Oct-2019	2019	04:03 PM	US50E	500	E	N LOMPA LN	CLEAR				PDO	SIDESWIPE, MEETING	2	SEDAN, 4 DOOR
INJURY ACCIDENT	11-Nov-2019	2019	04:25 PM	N LOMPA LN	60	N	US50E	CLEAR		1		C	REAR-END	2	SEDAN, 4 DOOR
INJURY ACCIDENT	17-Dec-2019	2019	12:05 PM	US50E			AT INT	N LOMPA LN	CLEAR	2		C	ANGLE	3	SEDAN, 4 DOOR
PROPERTY DAMAGE ONLY	17-Dec-2019	2019	12:59 PM	US50E	50	E	N LOMPA LN	CLEAR				PDO	SIDESWIPE, OVERTAKING	2	TOW TRUCK/WRECKER

Sum: 0 Count: 21 Count: 38

Count: 0 Count: 14 Total: 52

V1 Dir	V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracted	V1 Vehicle Factors	V1 Most Harmful Event
		3	GOING STRAIGHT				
W	48	1	GOING STRAIGHT	INATTENTION/DISTRACTED	RADIO/CD PLAYER	DISREGARDED TRAFFIC SIGNS, SIGNALS, ROAD MARKINGS	
E	54	1	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	
E	49	1	GOING STRAIGHT	APPARENTLY NORMAL		DISREGARDED TRAFFIC SIGNS, SIGNALS, ROAD MARKINGS	
W	26	2	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	
E	71	2	TURNING RIGHT	APPARENTLY NORMAL		OTHER IMPROPER DRIVING	
W			PASSING OTHER VEHICLE	APPARENTLY NORMAL		OPERATING VEHICLE IN ERRATIC, RECKLESS, CARELESS, NEGIGENT OR AGGRESSIVE MANNER	
W			CHANGING LANES	APPARENTLY NORMAL		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD: UNSAFE LANE CHANG	
S			PASSING OTHER VEHICLE	OTHER IMPROPER DRIVING		UNSAFE LANE CHANGE	
S	41		TURNING LEFT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	
W	74	1	NOT REPORTED	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	
N			MAKING U-TURN	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	
S	37		GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	
W	26		GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	
W	27	1	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	
W	52	3	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	
N	22		TURNING LEFT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	
W	76	1	GOING STRAIGHT	HAD BEEN DRINKING		DRIVING TOO FAST FOR CONDITIONS: HIT AND RUN	
E	83		TURNING RIGHT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	
E	59	1	CHANGING LANES	APPARENTLY NORMAL		UNSAFE LANE CHANGE	
E			GOING STRAIGHT	APPARENTLY NORMAL		DISREGARDED TRAFFIC SIGNS, SIGNALS, ROAD MARKINGS	
E	52	1	GOING STRAIGHT	APPARENTLY NORMAL		OTHER IMPROPER DRIVING	SLOW/STOPPED VEHICLE
E	28	2	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
E	28	2	LEAVING LANE	APPARENTLY NORMAL		UNSAFE LANE CHANGE	SLOW/STOPPED VEHICLE
E	76	1	GOING STRAIGHT	APPARENTLY NORMAL		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD	MOTOR VEHICLE IN TRANSPORT
E	30	2	GOING STRAIGHT	UNKNOWN		UNKNOWN	SLOW/STOPPED VEHICLE
W	45	1	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
W	37	1	GOING STRAIGHT	APPARENTLY NORMAL		OTHER IMPROPER DRIVING	MOTOR VEHICLE IN TRANSPORT
E	63	1	LEAVING LANE	APPARENTLY NORMAL		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD	MOTOR VEHICLE IN TRANSPORT
N	1		TURNING LEFT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
E	37	2	GOING STRAIGHT	APPARENTLY NORMAL		OTHER	SLOW/STOPPED VEHICLE
E	32	1	GOING STRAIGHT	APPARENTLY NORMAL		OTHER IMPROPER DRIVING	SLOW/STOPPED VEHICLE
W	59	2	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
E	44	3	GOING STRAIGHT	DRUG INVOLVEMENT		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
W	71	1	TRAVELING WRONG WAY	APPARENTLY NORMAL		RODE LEFT OF CENTER	MOTOR VEHICLE IN TRANSPORT
W	24	1	GOING STRAIGHT	APPARENTLY NORMAL		OTHER	SLOW/STOPPED VEHICLE
W	50	3	BACKING UP	OTHER IMPROPER DRIVING		OTHER IMPROPER DRIVING	SLOW/STOPPED VEHICLE
W	33	3	TURNING RIGHT	APPARENTLY NORMAL		UNSAFE LANE CHANGE	SLOW/STOPPED VEHICLE
S	1		TURNING RIGHT			HIT AND RUN	
W	33	2	ENTERING LANE	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
E	24	1	GOING STRAIGHT	FELL ASLEEP, FAINTED, FATIGUED, ETC.		UNSAFE LANE CHANGE	MOTOR VEHICLE IN TRANSPORT
N	1		GOING STRAIGHT	APPARENTLY NORMAL		OTHER	MOTOR VEHICLE IN TRANSPORT
E	19	CL	TURNING LEFT	OTHER IMPROPER DRIVING		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
N	70	1	GOING STRAIGHT	INATTENTION/DISTRACTED	UNKNOWN	FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
E	28	2	CHANGING LANES	APPARENTLY NORMAL		UNSAFE LANE CHANGE	MOTOR VEHICLE IN TRANSPORT
E	33	CL	TURNING LEFT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
W	50	2	GOING STRAIGHT	INATTENTION/DISTRACTED	UNKNOWN	DISREGARDED TRAFFIC SIGNS, SIGNALS, ROAD MARKINGS	MOTOR VEHICLE IN TRANSPORT
W	26	1	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
E	69	2	TURNING LEFT	APPARENTLY NORMAL		UNSAFE LANE CHANGE	MOTOR VEHICLE IN TRANSPORT
N	24	1	GOING STRAIGHT	DRUG INVOLVEMENT		FOLLOWED TOO CLOSELY	MOTOR VEHICLE IN TRANSPORT
E	82	2	GOING STRAIGHT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
E	27	1	CHANGING LANES	APPARENTLY NORMAL		UNSAFE LANE CHANGE	SLOW/STOPPED VEHICLE

V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event
	CARRY-ALL	W	23	3	GOING STRAIGHT	APPARENTLY NORMAL		HIT AND RUN	
	PICKUP	S	34		GOING STRAIGHT	APPARENTLY NORMAL			
SLOW/STOPPED VEHICLE	UTILITY	E	45	1	STOPPED	APPARENTLY NORMAL			
	CARRY-ALL	S	50		TURNING LEFT	APPARENTLY NORMAL			
SLOW/STOPPED VEHICLE	CARRY-ALL	W	59	2	TURNING RIGHT	APPARENTLY NORMAL		OTHER IMPROPER DRIVING	
	PICKUP	W	49	2	STOPPED	APPARENTLY NORMAL			
	CARRY-ALL	W			GOING STRAIGHT	APPARENTLY NORMAL			
	HARDTOP, 4 DOOR	W			GOING STRAIGHT	APPARENTLY NORMAL			
	VAN	S			TURNING LEFT	APPARENTLY NORMAL			
SLOW/STOPPED VEHICLE	SEDAN	N	27		GOING STRAIGHT	APPARENTLY NORMAL		OTHER IMPROPER DRIVING	
	SEDAN	S	20	1	GOING STRAIGHT	APPARENTLY NORMAL			
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	N			GOING STRAIGHT	APPARENTLY NORMAL			
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	S	26		STOPPED	APPARENTLY NORMAL			
NOT REPORTED	SEDAN, 4 DOOR	W	31		STOPPED	APPARENTLY NORMAL			
NOT REPORTED	UTILITY	W	18	1	GOING STRAIGHT	APPARENTLY NORMAL		UNKNOWN	
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	W	42	3	STOPPED	APPARENTLY NORMAL			
	CARRY-ALL	S	20		GOING STRAIGHT	APPARENTLY NORMAL			
	CARRY-ALL	W	43	1	GOING STRAIGHT	APPARENTLY NORMAL			
NOT REPORTED	SEDAN, 4 DOOR	S	28		GOING STRAIGHT	APPARENTLY NORMAL			
NOT REPORTED	SEDAN	E	57	1	GOING STRAIGHT	APPARENTLY NORMAL			
NOT REPORTED	CARRY-ALL	N			TURNING LEFT	APPARENTLY NORMAL			
SLOW/STOPPED VEHICLE	PICKUP	E	45	1	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	UTILITY	E	48	2	GOING STRAIGHT	APPARENTLY NORMAL			SLOW/STOPPED VEHICLE
SLOW/STOPPED VEHICLE	CARRY-ALL	E	47	3	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	SEDAN	E	52	2	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	VAN	E	67	2	STOPPED	UNKNOWN			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	UTILITY	W	34	1	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	HATCHBACK, 4 DOOR	W	44	1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	PICKUP	E	31	2	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	S		1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	UTILITY	E	57	2	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	SEDAN, 4 DOOR	E	63	1	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	SEDAN, 4 DOOR	E	71	L1	TURNING LEFT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
CROSS MEDIAN/CENTERLINE	SEDAN	W	44	1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	W	54	1	TURNING LEFT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	CARRY-ALL	W	36	1	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	PICKUP	W	61	3	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
		W	67	3	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	UTILITY	W	30	2	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	HATCHBACK, 4 DOOR	E	51	1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	PICKUP	N		1	TURNING LEFT	APPARENTLY NORMAL		MADE AN IMPROPER TURN	MOTOR VEHICLE IN TRANSPORT
	UTILITY	W	23	2	GOING STRAIGHT	APPARENTLY NORMAL		OBJECT AVOIDANCE	MOTOR VEHICLE IN TRANSPORT
	SEDAN, 4 DOOR	W	24	1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	SEDAN, 4 DOOR	E	28	1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	CONVERTIBLE	W	18	2	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	SEDAN, 4 DOOR	S	44	1	TURNING LEFT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	W	19	1	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
	UTILITY	E	72	2	GOING STRAIGHT	APPARENTLY NORMAL		OTHER	MOTOR VEHICLE IN TRANSPORT
	CARRY-ALL	N	34	1	STOPPED	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	HATCHBACK, 4 DOOR	S	58	1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	PICKUP	E	77	1	GOING STRAIGHT	APPARENTLY NORMAL			MOTOR VEHICLE IN TRANSPORT

V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
			DRY	DARK - SPOT LIGHTING	NONE	NHP	2364914
			DRY	DAYLIGHT	NONE	NHP	2381147
SLOW/STOPPED VEHICLE			DRY	DARK - SPOT LIGHTING	NONE	NHP	2381525
			DRY	DAYLIGHT	OTHER HIGHWAY	NHP	2384512
			DRY	DAYLIGHT	NONE	NHP	2394578
			DRY	DAYLIGHT		NHP	2398865
						CCSO	2404689
						NHP	2414103
SLOW/STOPPED VEHICLE						CCSO	2404705
			DRY	DAYLIGHT	NONE	NHP	2416134
			DRY	DAYLIGHT	NONE	NHP	2416409
						CCSO	2404729
NOT REPORTED			DRY	DARK - SPOT LIGHTING	NONE	CCSO	2404748
NOT REPORTED			DRY	DAYLIGHT	NONE	CCSO	2518096
			DRY	DAYLIGHT	NONE	NHP	2520480
			WET	DARK - SPOT LIGHTING	NONE	NHP	2419983
			DRY	DARK - CONTINUOUS LIGHTING	NONE	NHP	2420641
SLOW/STOPPED VEHICLE			DRY	DAYLIGHT	NONE	NHP	2420768
NOT REPORTED			DRY	DAYLIGHT	NONE	NHP	2521416
NOT REPORTED			DRY	DAYLIGHT	WEATHER	NHP	2521915
NOT REPORTED						CCSO	2518050
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3080220
SLOW/STOPPED VEHICLE			DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3084739
HORSE			DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3087952
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3088214
SLOW/STOPPED VEHICLE			DRY	DAYLIGHT	UNKNOWN	NHP	3093618
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3101991
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3108556
MOTOR VEHICLE IN TRANSPORT			DRY	DUSK	NONE	NHP	3113017
						CCSO	3111890
MOTOR VEHICLE IN TRANSPORT			DRY	DARK - SPOT LIGHTING	BACKUP DUE TO REGULAR CONGESTION	NHP	3114073
SLOW/STOPPED VEHICLE			DRY	DAYLIGHT	NONE	NHP	3116866
MOTOR VEHICLE IN TRANSPORT			DRY	DARK - CONTINUOUS LIGHTING	NONE	NHP	3063394
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3063809
SLOW/STOPPED VEHICLE			WET	DARK - SPOT LIGHTING	NONE	NHP	3069250
SLOW/STOPPED VEHICLE			DRY	DAYLIGHT	NONE	NHP	3071445
MOTOR VEHICLE IN TRANSPORT			WET	DAYLIGHT	WEATHER: WET, ICY, SNOW, SLUSH	NHP	3118213
SLOW/STOPPED VEHICLE			DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3118434
MOTOR VEHICLE IN TRANSPORT	FAILURE TO YIELD RIGHT OF WAY		DRY	DAYLIGHT	NONE	CCSO	3122145
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3124974
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3010480
						CCSO	3014788
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3013148
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3018842
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3025029
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3059816
MOTOR VEHICLE IN TRANSPORT			DRY	DARK - CONTINUOUS LIGHTING	NONE	NHP	3152074
SLOW/STOPPED VEHICLE			DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3154766
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	NHP	3014163
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT	NONE	CCSO	3020131
MOTOR VEHICLE IN TRANSPORT			DRY	DAYLIGHT		NHP	3042501
	SLOW/STOPPED VEHICLE		DRY	DAYLIGHT	BACKUP DUE TO PRIOR CRASH	NHP	3042504

INTERSECTION DETAIL  
US50E @ AIRPORT RD  
01 JAN 16 - 01 JAN 20

COUNTY: CARSON CITY

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir
INJURY ACCIDENT	3-Nov-2017	2017	05:10 PM	US50E	500	E	AIRPORT RD	CLOUDY	1		C	REAR-END	2	VAN	W	
INJURY ACCIDENT	5-Apr-2017	2017	09:11 PM	US50E	5	E	AIRPORT RD	CLOUDY	1		C	NON-COLLISION	2	MOTORCYCLE	E	
INJURY ACCIDENT	8-Jan-2017	2017	09:25 AM	US50E		AT INT	AIRPORT RD	RAIN	2		B	ANGLE	2	SEDAN	E	
PROPERTY DAMAGE ONLY	5-May-2017	2017	04:45 PM	US50E		AT INT	AIRPORT RD	CLOUDY			PDO	REAR-END	2	SEDAN	E	
PROPERTY DAMAGE ONLY	31-Aug-2017	2017	05:55 PM	US50E	50	W	AIRPORT RD	CLOUDY			PDO	SIDESWIPE, OVERTAKING	2	CARRY-ALL	E	
PROPERTY DAMAGE ONLY	6-Jun-2017	2017	12:58 PM	US50E	100	W	AIRPORT RD	CLEAR			PDO	SIDESWIPE, MEETING	2	HATCHBACK, 4 DOOR	E	
PROPERTY DAMAGE ONLY	11-Apr-2017	2017	02:51 PM	US50E	150	W	AIRPORT RD	CLEAR			PDO	REAR-END	2	HARDTOP, 4 DOOR	W	
PROPERTY DAMAGE ONLY	20-May-2017	2017	04:51 PM	US50E	250	W	AIRPORT RD	CLEAR			PDO	NON-COLLISION	1	CARRY-ALL	E	
INJURY ACCIDENT	6-Oct-2017	2017	07:59 PM	US50E	120	W	AIRPORT RD	CLEAR	1		C	HEAD-ON	2	SEDAN, 4 DOOR	N	
PROPERTY DAMAGE ONLY	2-Feb-2017	2017	06:49 PM	AIRPORT RD		AT INT	US50E	CLEAR			PDO	REAR-END	2	SEDAN, 4 DOOR	N	
PROPERTY DAMAGE ONLY	8-Mar-2018	2018	09:10 PM	US50E	450	E	AIRPORT RD	CLOUDY			PDO	SIDESWIPE, OVERTAKING	8	PICKUP	E	
PROPERTY DAMAGE ONLY	10-Aug-2018	2018	03:00 PM	US50E	300	E	AIRPORT RD	CLEAR			PDO	REAR-END	2	PICKUP	W	
PROPERTY DAMAGE ONLY	1-Mar-2018	2018	07:54 PM	US50E	250	E	AIRPORT RD	SNOW			PDO	ANGLE	2	SEDAN	E	
PROPERTY DAMAGE ONLY	12-Nov-2018	2018	04:20 PM	US50E	80	E	AIRPORT RD	CLEAR			PDO	REAR-END	2	CARRY-ALL	W	
INJURY ACCIDENT	7-May-2018	2018	07:01 PM	US50E	30	E	AIRPORT RD	CLOUDY	4		C	REAR-END	3	UTILITY	W	
INJURY ACCIDENT	19-Dec-2018	2018	05:45 PM	US50E	5	E	AIRPORT RD	CLEAR	2		B	REAR-END	2	CARRY-ALL	W	
PROPERTY DAMAGE ONLY	1-Jul-2018	2018	09:40 AM	US50E		AT INT	AIRPORT RD	CLEAR			PDO	REAR-END	2	PICKUP	W	
PROPERTY DAMAGE ONLY	14-Sep-2018	2018	05:55 PM	US50E		AT INT	AIRPORT RD	CLEAR			PDO	REAR-END	2	SEDAN, 4 DOOR	W	
FATAL ACCIDENT	17-Nov-2018	2018	08:19 AM	US50E		AT INT	AIRPORT RD	CLEAR	1		K	NON-COLLISION	1	PICKUP	E	
PROPERTY DAMAGE ONLY	5-Oct-2018	2018	03:06 PM	US50E		AT INT	AIRPORT RD	CLEAR			PDO	REAR-END	2	PICKUP	W	
INJURY ACCIDENT	19-Nov-2018	2018	08:37 AM	US50E		AT INT	AIRPORT RD	CLEAR	1		C	ANGLE	2	PICKUP	E	
PROPERTY DAMAGE ONLY	13-May-2018	2018	12:55 PM	US50E		AT INT	AIRPORT RD	CLOUDY			PDO	REAR-END	2	SEDAN	W	
PROPERTY DAMAGE ONLY	14-Mar-2018	2018	05:57 PM	US50E		AT INT	AIRPORT RD	CLOUDY			PDO	ANGLE	2	PICKUP	E	
PROPERTY DAMAGE ONLY	23-Nov-2018	2018	12:18 AM	US50E		AT INT	AIRPORT RD	SNOW			PDO	SIDESWIPE, MEETING	2	CARRY-ALL	S	
PROPERTY DAMAGE ONLY	14-Jul-2018	2018	11:05 AM	US50E	450	W	AIRPORT RD	CLOUDY			PDO	REAR-END	3	SEDAN, 4 DOOR	W	
PROPERTY DAMAGE ONLY	17-Jun-2019	2019	08:04 AM	US50E	100	E	AIRPORT RD	CLEAR			PDO	NON-COLLISION	1	MOTORCYCLE	S	
PROPERTY DAMAGE ONLY	24-Jan-2019	2019	03:40 PM	US50E		AT INT	AIRPORT RD	CLEAR			PDO	REAR-END	1	SEDAN, 2 DOOR	N	
PROPERTY DAMAGE ONLY	5-Jun-2019	2019	12:40 PM	US50E	500	E	AIRPORT RD	CLOUDY			PDO	SIDESWIPE, OVERTAKING	2	VAN	E	
INJURY ACCIDENT	4-Jan-2019	2019	05:16 PM	US50E	300	E	AIRPORT RD	CLEAR	1		C	REAR-END	2	SEDAN	W	
PROPERTY DAMAGE ONLY	8-Nov-2019	2019	12:25 PM	US50E	300	E	AIRPORT RD	CLEAR			PDO	SIDESWIPE, MEETING	2	SEDAN	W	
PROPERTY DAMAGE ONLY	5-Mar-2019	2019	11:09 AM	US50E		AT INT	AIRPORT RD	BLOWING SNOW			PDO	SIDESWIPE, OVERTAKING	2	UTILITY	E	
PROPERTY DAMAGE ONLY	11-Apr-2019	2019	04:50 PM	US50E		AT INT	AIRPORT RD	CLEAR			PDO	NON-COLLISION	1	PICKUP	W	
PROPERTY DAMAGE ONLY	29-Oct-2019	2019	11:43 AM	US50E		AT INT	AIRPORT RD	CLEAR			PDO	BACKING	2	PICKUP	W	
PROPERTY DAMAGE ONLY	17-Aug-2019	2019	03:42 PM	US50E		AT INT	AIRPORT RD	CLEAR			PDO	ANGLE	2	SEDAN, 4 DOOR	E	
INJURY ACCIDENT	15-Aug-2019	2019	07:53 AM	US50E		AT INT	AIRPORT RD	CLEAR	2		C	ANGLE	3	UTILITY	W	
FATAL ACCIDENT	10-Sep-2019	2019	06:06 PM	US50E		AT INT	AIRPORT RD	CLEAR	1	5	K	ANGLE	3	SEDAN, 4 DOOR	E	
INJURY ACCIDENT	26-Mar-2019	2019	11:58 AM	US50E	30	W	AIRPORT RD	CLOUDY	1		B	REAR-END	2	UTILITY	E	
PROPERTY DAMAGE ONLY	24-Oct-2019	2019	10:56 AM	US50E	100	W	AIRPORT RD	CLEAR			PDO	REAR-END	2	CARRY-ALL	E	
PROPERTY DAMAGE ONLY	8-Feb-2019	2019	05:17 PM	US50E	200	W	AIRPORT RD	CLOUDY			PDO	ANGLE	2	HATCHBACK/FASTBACK	E	
INJURY ACCIDENT	16-Dec-2019	2019	05:40 PM	US50E	450	W	AIRPORT RD	CLEAR		1	C	REAR-END	3		E	
PROPERTY DAMAGE ONLY	4-Feb-2019	2019	01:17 PM	US50E	500	W	AIRPORT RD	FOG, SMOG, SMOKE			PDO	REAR-END	2	HATCHBACK, 4 DOOR	E	
PROPERTY DAMAGE ONLY	25-Oct-2019	2019	09:36 PM	AIRPORT RD		AT INT	US50E	CLEAR			PDO	ANGLE	2	HARDTOP, 4 DOOR	W	
PROPERTY DAMAGE ONLY	15-Dec-2019	2019	03:06 PM	AIRPORT RD		AT INT	US50E	CLEAR			PDO	REAR-END	2	HARDTOP, 2 DOOR	W	
PROPERTY DAMAGE ONLY	13-Apr-2019	2019	09:56 AM	AIRPORT RD		AT INT	US50E	CLEAR			PDO	REAR-END	2	VAN	S	
PROPERTY DAMAGE ONLY	30-Aug-2019	2019	09:12 PM	AIRPORT RD		AT INT	US50E	CLEAR			PDO	NON-COLLISION	1	SEDAN, 4 DOOR	S	
PROPERTY DAMAGE ONLY	5-Sep-2019	2019	04:00 PM	AIRPORT RD		AT INT	US50E	CLOUDY			PDO	SIDESWIPE, MEETING	2	SEDAN, 4 DOOR	N	

Sum: 2 Sum: 22 Count: 33

Count: 2 Count: 11

Total: 46

V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracted	V1 Vehicle Factors	V1 Most Harmful Event
34	2	GOING STRAIGHT	APPARENTLY NORMAL		OBJECT AVOIDANCE	
31		GOING STRAIGHT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	
24		GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	
54		GOING STRAIGHT	APPARENTLY NORMAL		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD: HIT AND RUN: UNSAFE LANE CHANG	
27		NOT REPORTED	OTHER IMPROPER DRIVING		FAILED TO YIELD RIGHT OF WAY	
74	1	NOT REPORTED	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	
25	1	GOING STRAIGHT	APPARENTLY NORMAL		MADE AN IMPROPER TURN	
54	1	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	
36	1	TURNING LEFT	APPARENTLY NORMAL		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD: UNSAFE LANE CHANG	
		GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	
30		GOING STRAIGHT	APPARENTLY NORMAL		MECHANICAL DEFECTS: ROAD DEFECT	
79	2	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
29	1	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	SLOW/STOPPED VEHICLE
20	1	GOING STRAIGHT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	SLOW/STOPPED VEHICLE
28	2	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
72	2	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	SLOW/STOPPED VEHICLE
26	L1	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	MOTOR VEHICLE IN TRANSPORT
	1	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	MOTOR VEHICLE IN TRANSPORT
54	1	TURNING LEFT	DRUG INVOLVEMENT		FAILED TO YIELD RIGHT OF WAY	PEDESTRIAN
45	2	GOING STRAIGHT	INATTENTION/DISTRACTED	ELECTRONIC EQUIPMENT	DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
40	1	GOING STRAIGHT	OTHER IMPROPER DRIVING		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
26	1	GOING STRAIGHT	APPARENTLY NORMAL		OTHER	SLOW/STOPPED VEHICLE
37	2	GOING STRAIGHT	APPARENTLY NORMAL		DISREGARDED TRAFFIC SIGNS, SIGNALS, ROAD MARKINGS	MOTOR VEHICLE IN TRANSPORT
	1	TURNING RIGHT	APPARENTLY NORMAL		MADE AN IMPROPER TURN	SLOW/STOPPED VEHICLE
22	2	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
47		UNKNOWN	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	CURB
71	L1	STOPPED	APPARENTLY NORMAL		UNKNOWN	MOTOR VEHICLE IN TRANSPORT
42	1	CHANGING LANES	APPARENTLY NORMAL		OTHER	SLOW/STOPPED VEHICLE
32	2	GOING STRAIGHT	APPARENTLY NORMAL		DRIVING TOO FAST FOR CONDITIONS	SLOW/STOPPED VEHICLE
63	1	TURNING RIGHT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
18	R1	UNKNOWN	OTHER IMPROPER DRIVING		FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD	SLOW/STOPPED VEHICLE
64	L1	TURNING LEFT	APPARENTLY NORMAL		OTHER	PEDAL CYCLE
37		BACKING UP	APPARENTLY NORMAL		UNSAFE BACKING	SLOW/STOPPED VEHICLE
37	1	PASSING OTHER VEHICLE	APPARENTLY NORMAL		MADE AN IMPROPER TURN	MOTOR VEHICLE IN TRANSPORT
32	1	GOING STRAIGHT	APPARENTLY NORMAL		DISREGARDED TRAFFIC SIGNS, SIGNALS, ROAD MARKINGS	MOTOR VEHICLE IN TRANSPORT
58	2	GOING STRAIGHT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
47	2	GOING STRAIGHT	OTHER IMPROPER DRIVING		OTHER IMPROPER DRIVING	SLOW/STOPPED VEHICLE
27	2	GOING STRAIGHT	APPARENTLY NORMAL		OTHER	SLOW/STOPPED VEHICLE
35	2	CHANGING LANES	APPARENTLY NORMAL		UNSAFE LANE CHANGE	MOTOR VEHICLE IN TRANSPORT
	2	GOING STRAIGHT	UNKNOWN		HIT AND RUN	SLOW/STOPPED VEHICLE
18	2	GOING STRAIGHT	APPARENTLY NORMAL		OTHER	SLOW/STOPPED VEHICLE
18	1	ENTERING LANE	APPARENTLY NORMAL		UNSAFE LANE CHANGE	MOTOR VEHICLE IN TRANSPORT
72	2	GOING STRAIGHT	APPARENTLY NORMAL		FOLLOWED TOO CLOSELY	MOTOR VEHICLE IN TRANSPORT
	2	GOING STRAIGHT	INATTENTION/DISTRACTED	UNKNOWN	FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
26	L1	STOPPED	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT
60	L1	TURNING LEFT	APPARENTLY NORMAL		FAILED TO YIELD RIGHT OF WAY	MOTOR VEHICLE IN TRANSPORT

V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	W	30	2	STOPPED	APPARENTLY NORMAL				
OVERTURN/ROLLOVER	MOTORCYCLE	E	48		GOING STRAIGHT	APPARENTLY NORMAL				SLOW/STOPPED VEHICLE
	CARRY-ALL	E	59		TURNING LEFT	APPARENTLY NORMAL				
SLOW/STOPPED VEHICLE	CARRY-ALL	E	16		GOING STRAIGHT	APPARENTLY NORMAL				SLOW/STOPPED VEHICLE
SLOW/STOPPED VEHICLE	VAN	E	51		STOPPED	APPARENTLY NORMAL				
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	E	53	1	GOING STRAIGHT	APPARENTLY NORMAL				
SLOW/STOPPED VEHICLE	PICKUP	W	27	1	STOPPED	APPARENTLY NORMAL				
OTHER MOBILE OBJECT	UTILITY	E	22	1	GOING STRAIGHT	APPARENTLY NORMAL				
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	N			STOPPED	APPARENTLY NORMAL				
NOT REPORTED	HATCHBACK, 4 DOOR				PARKED					NOT REPORTED
SLOW/STOPPED VEHICLE	UTILITY	W	23	2	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	SEDAN	N	48	1	TURNING LEFT	APPARENTLY NORMAL				
SLOW/STOPPED VEHICLE	PICKUP	W	50	1	GOING STRAIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	UTILITY	W	49	2	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	CARRY-ALL	W	50	2	GOING STRAIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	UTILITY	W	62	L1	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	VAN	W		1	STOPPED	APPARENTLY NORMAL				SLOW/STOPPED VEHICLE
PEDESTRIAN										SLOW/STOPPED VEHICLE
SLOW/STOPPED VEHICLE	UTILITY	W	42	2	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	UTILITY	S	76	1	GOING STRAIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	PICKUP	W	36	1	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
NOT REPORTED	SEDAN	N	75	2	GOING STRAIGHT	APPARENTLY NORMAL				NOT REPORTED
SLOW/STOPPED VEHICLE	PICKUP	S		R1	TURNING RIGHT	APPARENTLY NORMAL				SLOW/STOPPED VEHICLE
SLOW/STOPPED VEHICLE	UTILITY	W	31	2	STOPPED	APPARENTLY NORMAL				SLOW/STOPPED VEHICLE
CURB										
SLOW/STOPPED VEHICLE										
SLOW/STOPPED VEHICLE	SEDAN	E	65	1	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	PICKUP	W	42	2	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	SEDAN	W	58	1	GOING STRAIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	SEDAN	E	53	2	STOPPED	UNKNOWN		UNKNOWN		SLOW/STOPPED VEHICLE
PEDAL CYCLE										SLOW/STOPPED VEHICLE
SLOW/STOPPED VEHICLE	CARRY-ALL	E	21		STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	SEDAN, 4 DOOR	E	29	1	TURNING RIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	PICKUP	N	57	1	GOING STRAIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
OVERTURN/ROLLOVER	VAN	S	17	1	GOING STRAIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	PICKUP WITH MOUNTED CAMPER	E	53	1	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	E	53	2	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	PICKUP	E	46	1	GOING STRAIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	SEDAN	E	69	2	STOPPED	APPARENTLY NORMAL		OTHER		MOTOR VEHICLE IN TRANSPORT
SLOW/STOPPED VEHICLE	UTILITY	E	39	2	STOPPED	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	HARDTOP, 4 DOOR	W	26		ENTERING LANE	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT
	VAN	W	40	2	STOPPED	APPARENTLY NORMAL				CARGO/EQUIPMENT LOSS OR SHIFT
	HATCHBACK, 4 DOOR	S		2	STOPPED	APPARENTLY NORMAL		OTHER		MOTOR VEHICLE IN TRANSPORT
	SEDAN, 4 DOOR	S		R1	TURNING RIGHT	APPARENTLY NORMAL				MOTOR VEHICLE IN TRANSPORT

First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
		DRY	DAYLIGHT	OTHER HIGHWAY	NHP	2414657
		DRY	DARK - SPOT LIGHTING	NONE	NHP	2379361
		DRY	DAYLIGHT		NHP	2358121
		DRY	DAYLIGHT	NONE	NHP	2381015
		DRY	DAYLIGHT	NONE	NHP	2396912
		DRY	DAYLIGHT	NONE	CCSO	2372748
		DRY	DAYLIGHT	OTHER HIGHWAY	NHP	2379643
		DRY	DAYLIGHT	NONE	NHP	2381859
		DRY	DARK - CONTINUOUS LIGHTING	NONE	NHP	2398936
		DRY	DARK - NO LIGHTING	NONE	CCSO	2361566
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT		NHP	2521169
		DRY	DARK - NO LIGHTING	WET, ICY, SNOW, SLUSH	NHP	3095063
MOTOR VEHICLE IN TRANSPORT		ICE	DAYLIGHT	GLARE: BACKUP DUE TO REGULAR CONGESTION	NHP	2421679
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3109118
MOTOR VEHICLE IN TRANSPORT		DRY	DARK - CONTINUOUS LIGHTING	NONE	NHP	3081794
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	CCSO	3115292
PEDESTRIAN		DRY	DAYLIGHT	NONE	CCSO	3088645
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	NHP	3109262
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	NHP	3104690
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	NHP	3110337
SLOW/STOPPED VEHICLE		DRY	DAYLIGHT		NHP	3082075
		DRY	DAYLIGHT	NONE	NHP	2521547
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	CCSO	3110735
OTHER FIXED OBJECTS (BUILDING, TUNNEL, ETC.)		DRY		NONE	NHP	3091326
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	CCSO	3011048
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT		NHP	3064432
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3010500
MOTOR VEHICLE IN TRANSPORT		DRY	DUSK	BACKUP DUE TO REGULAR CONGESTION	NHP	3063509
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	BACKUP DUE TO REGULAR CONGESTION	NHP	3026284
MOTOR VEHICLE IN TRANSPORT		UNKNOWN	UNKNOWN	UNKNOWN	NHP	3118212
PEDAL CYCLE	IMPROPER CROSSING	DRY	DAYLIGHT	NONE	NHP	3124935
MOTOR VEHICLE IN TRANSPORT		DRY		NONE	NHP	3025566
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	CCSO	3060618
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	NHP	3061684
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	NHP	3152004
SLOW/STOPPED VEHICLE		DRY	DAYLIGHT	NONE	NHP	3121628
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	NHP	3016336
MOTOR VEHICLE IN TRANSPORT		DRY	DUSK	NONE	NHP	3069359
MOTOR VEHICLE IN TRANSPORT		DRY	DARK - CONTINUOUS LIGHTING	BACKUP DUE TO REGULAR CONGESTION	NHP	3042469
SLOW/STOPPED VEHICLE		SNOW	DAYLIGHT	WET, ICY, SNOW, SLUSH	NHP	3068002
MOTOR VEHICLE IN TRANSPORT		DRY	DARK - CONTINUOUS LIGHTING	NONE	CCSO	3020108
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	CCSO	3041192
MOTOR VEHICLE IN TRANSPORT		DRY			CCSO	3123986
MOTOR VEHICLE IN TRANSPORT		DRY	DARK - SPOT LIGHTING	NONE	CCSO	3072415
MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE	NHP	3151207

# **Appendix B**

## **Baseline LOS Calculations**



**Intersection Level Of Service Report**

**Intersection 1: US 50 / N. Lompa Ln**

Control Type: Signalized  
 Analysis Method: HCM 6th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 21.1  
 Level Of Service: C  
 Volume to Capacity (v/c): 0.506

**Intersection Setup**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	150.00	100.00	100.00	200.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Base Volume Input [veh/h]	164	37	20	46	35	114	35	743	118	14	1591	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	99	0	0	64	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	6	0	0	34	0	0	35	0	0	10
Total Hourly Volume [veh/h]	164	37	14	46	35	80	35	842	83	14	1655	23
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	10	4	12	9	22	9	226	22	4	445	6
Total Analysis Volume [veh/h]	176	40	15	49	38	86	38	905	89	15	1780	25
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				1			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			1	
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0	
Bicycle Volume [bicycles/h]	0				0			0			0	

**Intersection Settings**

Located in CBD	No												
Signal Coordination Group	-												
Cycle Length [s]	115												
Coordination Type	Time of Day Pattern Coordinated												
Actuation Type	Fully actuated												
Offset [s]	66.0												
Offset Reference	Lead Green - Beginning of First Green												
Permissive Mode	SingleBand												
Lost time [s]	0.00												

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0	
Auxiliary Signal Groups													
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-	
Minimum Green [s]	0	5	0	0	5	0	5	10	0	5	10	0	
Maximum Green [s]	0	25	0	0	25	0	20	40	0	20	40	0	
Amber [s]	0.0	4.4	0.0	0.0	4.4	0.0	3.9	4.8	0.0	3.9	4.8	0.0	
All red [s]	0.0	3.3	0.0	0.0	3.3	0.0	3.1	1.0	0.0	2.7	1.0	0.0	
Split [s]	0	35	0	0	35	0	26	45	0	35	54	0	
Vehicle Extension [s]	0.0	2.2	0.0	0.0	2.2	0.0	2.0	2.5	0.0	2.0	2.5	0.0	
Walk [s]	0	11	0	0	11	0	0	9	0	0	7	0	
Pedestrian Clearance [s]	0	16	0	0	16	0	0	16	0	0	12	0	
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Rest In Walk		No			No			No			No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	
I2, Clearance Lost Time [s]	0.0	5.7	0.0	0.0	5.7	0.0	5.0	3.8	0.0	4.6	3.8	0.0	
Minimum Recall		No			No		No	No		No	No		
Maximum Recall		No			No		No	Yes		No	Yes		
Pedestrian Recall		No			No		No	No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0												
Pedestrian Walk [s]	0												
Pedestrian Clearance [s]	0												

**Lane Group Calculations**

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	7.70	7.70	7.70	7.70	7.00	5.80	5.80	6.60	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	5.70	5.70	5.70	5.70	5.00	3.80	3.80	4.60	3.80	3.80
g_i, Effective Green Time [s]	27	27	27	27	4	66	66	2	64	64
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.03	0.57	0.57	0.02	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.03	0.04	0.08	0.02	0.19	0.19	0.01	0.34	0.34
s, saturation flow rate [veh/h]	1236	1741	1316	1626	1738	3475	1743	1738	3475	1812
c, Capacity [veh/h]	253	412	315	384	55	1984	995	31	1923	1003
d1, Uniform Delay [s]	47.95	34.59	38.95	36.27	55.09	13.07	13.08	55.92	17.39	17.39
k, delay calibration	0.06	0.06	0.06	0.06	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.86	0.08	0.12	0.26	5.64	0.45	0.91	4.35	1.49	2.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.70	0.13	0.16	0.32	0.69	0.33	0.33	0.49	0.62	0.62
d, Delay for Lane Group [s/veh]	49.81	34.67	39.07	36.52	60.73	13.52	13.98	60.28	18.88	20.24
Lane Group LOS	D	C	D	D	E	B	B	E	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.13	1.24	1.19	2.94	1.15	4.26	4.42	0.46	10.02	10.84
50th-Percentile Queue Length [ft/ln]	128.14	31.05	29.69	73.55	28.74	106.52	110.48	11.46	250.58	270.93
95th-Percentile Queue Length [veh/ln]	8.84	2.24	2.14	5.30	2.07	7.65	7.87	0.82	15.22	16.24
95th-Percentile Queue Length [ft/ln]	220.97	55.89	53.44	132.38	51.74	191.15	196.67	20.62	380.38	405.90

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	49.81	34.67	34.67	39.07	36.52	36.52	60.73	13.64	13.98	60.28	19.34	20.24
Movement LOS	D	C	C	D	D	D	E	B	B	E	B	C
d_A, Approach Delay [s/veh]	46.20			37.25			15.41			19.69		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]				21.14								
Intersection LOS				C								
Intersection V/C				0.506								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	13.0	11.0	15.0	15.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	7857.08	0.00	0.00
d_p, Pedestrian Delay [s]	45.22	47.01	43.46	43.46
I_p,int, Pedestrian LOS Score for Intersection	2.071	2.087	3.451	3.272
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	475	475	682	839
d_b, Bicycle Delay [s]	33.42	33.42	24.96	19.39
I_b,int, Bicycle LOS Score for Intersection	1.951	1.901	2.146	2.566
Bicycle LOS	A	A	B	B

**Sequence**

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**

**Intersection 2: US 50 / Airport Rd**

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.553

**Intersection Setup**

Name	Airport Rd			Airport Rd			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	250.00	100.00	150.00	150.00	100.00	100.00	250.00	100.00	175.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Airport Rd			Airport Rd			US 50			US 50		
Base Volume Input [veh/h]	167	84	16	44	100	98	38	616	97	16	1286	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	26	0	22	0	0	0	0	75	15	12	31	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	11	0	0	51	0	0	58	0	0	19
Total Hourly Volume [veh/h]	193	84	27	44	100	47	38	691	54	28	1317	17
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	22	7	12	27	13	10	184	14	7	350	5
Total Analysis Volume [veh/h]	205	89	29	47	106	50	40	735	57	30	1401	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			1			0	
v_di, Inbound Pedestrian Volume crossing m	0				1			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0	
Bicycle Volume [bicycles/h]	0				0			1			0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	115											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	45.0											
Offset Reference	Lead Green - Beginning of First Green											
Permissive Mode	SingleBand											
Lost time [s]	0.00											

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	20	25	0	20	25	0	20	40	0	20	40	0
Amber [s]	3.3	4.3	0.0	3.1	4.3	0.0	3.9	4.8	0.0	4.0	4.8	0.0
All red [s]	2.9	2.9	0.0	2.6	2.9	0.0	3.4	1.0	0.0	3.6	1.0	0.0
Split [s]	18	34	0	18	34	0	24	39	0	24	39	0
Vehicle Extension [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.0	2.2	0.0	1.0	2.2	0.0
Walk [s]	0	14	0	0	11	0	0	16	0	0	15	0
Pedestrian Clearance [s]	0	13	0	0	16	0	0	17	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.2	5.2	0.0	3.7	5.2	0.0	5.3	3.8	0.0	5.6	3.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

**Lane Group Calculations**

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	6.70	7.20	6.45	7.20	7.20	7.30	5.80	5.80	7.60	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.20	0.00	5.20	5.20	5.30	3.80	3.80	5.60	3.80	3.80
g_i, Effective Green Time [s]	29	13	29	13	13	4	64	64	3	63	63
g / C, Green / Cycle	0.25	0.11	0.25	0.12	0.12	0.03	0.55	0.55	0.03	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.07	0.03	0.06	0.03	0.02	0.21	0.04	0.02	0.41	0.01
s, saturation flow rate [veh/h]	1512	1735	1535	1810	1534	1724	3446	1507	1724	3446	1538
c, Capacity [veh/h]	323	199	327	210	178	55	1906	833	47	1899	848
d1, Uniform Delay [s]	42.50	48.39	40.35	47.73	46.45	55.19	14.61	11.93	55.38	19.53	11.73
k, delay calibration	0.06	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.06	1.05	0.07	0.69	0.31	6.58	0.59	0.16	5.13	2.61	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.63	0.59	0.14	0.50	0.28	0.73	0.39	0.07	0.63	0.74	0.02
d, Delay for Lane Group [s/veh]	43.56	49.44	40.42	48.43	46.76	61.77	15.20	12.09	60.51	22.14	11.78
Lane Group LOS	D	D	D	D	D	E	B	B	E	C	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.05	3.30	1.01	2.87	1.31	1.22	5.17	0.67	0.91	13.42	0.21
50th-Percentile Queue Length [ft/ln]	126.37	82.57	25.20	71.73	32.85	30.54	129.17	16.79	22.69	335.52	5.18
95th-Percentile Queue Length [veh/ln]	8.74	5.95	1.81	5.16	2.37	2.20	8.89	1.21	1.63	19.43	0.37
95th-Percentile Queue Length [ft/ln]	218.55	148.63	45.36	129.12	59.13	54.98	222.36	30.22	40.84	485.72	9.33

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	43.56	49.44	49.44	40.42	48.43	46.76	61.77	15.20	12.09	60.51	22.14	11.78
Movement LOS	D	D	D	D	D	D	E	B	B	E	C	B
d_A, Approach Delay [s/veh]	45.71			46.16			17.23			22.81		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]				25.48								
Intersection LOS				C								
Intersection V/C				0.553								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	20.0	19.0	15.0	18.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	10096.25	0.00
d_p, Pedestrian Delay [s]	39.26	40.09	43.49	40.92
I_p,int, Pedestrian LOS Score for Intersection	2.119	2.328	3.310	3.101
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	466	466	577	577
d_b, Bicycle Delay [s]	33.84	33.84	29.12	29.11
I_b,int, Bicycle LOS Score for Intersection	2.111	1.979	2.294	2.771
Bicycle LOS	B	A	B	C

**Sequence**

Ring 1	2	1	3	4	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Airport Rd / Gordonia Dr**

Control Type:	All-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.303

**Intersection Setup**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Base Volume Input [veh/h]	139	13	35	157	46	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	48	0	0	27	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	13	35	184	46	54
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	4	10	51	13	15
Total Analysis Volume [veh/h]	208	14	39	204	51	60
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	809	801	757
Degree of Utilization, x	0.27	0.30	0.15

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.12	1.28	0.51
95th-Percentile Queue Length [ft]	27.94	32.08	12.80
Approach Delay [s/veh]	9.13	9.44	8.57
Approach LOS	A	A	A
Intersection Delay [s/veh]		9.15	
Intersection LOS		A	

**Intersection Level Of Service Report**

**Intersection 4: Airport Rd / Desatoya Dr / N. Lompa Ln**

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.132

**Intersection Setup**

Name	Airport Rd		Airport Rd		Desatoya Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		Desatoya Dr	
Base Volume Input [veh/h]	119	23	15	188	54	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	48	0	0	27	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	23	15	215	54	33
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	7	5	66	17	10
Total Analysis Volume [veh/h]	206	28	19	265	67	41
Pedestrian Volume [ped/h]	0		0		1	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.13	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	7.73	0.00	13.44	10.73
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.66	0.66
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.08	0.00	16.51	16.51
d_A, Approach Delay [s/veh]	0.00		0.52		12.41	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			2.38			
Intersection LOS			B			

**Intersection Level Of Service Report**

**Intersection 6: Airport Rd / Butti Way**

Control Type: Two-way stop  
 Analysis Method: HCM 6th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 15.1  
 Level Of Service: C  
 Volume to Capacity (v/c): 0.218

**Intersection Setup**

Name	Airport Rd		Airport Rd		Butti Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		Butti Way	
Base Volume Input [veh/h]	123	10	17	225	61	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	3.00	3.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	23	4	8	19	13	25
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	14	25	244	74	44
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	5	8	81	25	15
Total Analysis Volume [veh/h]	195	19	33	325	99	59
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.22	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	7.69	0.00	15.13	9.65
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.00	0.82	0.23
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.85	0.00	20.54	5.70
d_A, Approach Delay [s/veh]	0.00		0.71		13.08	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			3.18			
Intersection LOS			C			

**Intersection Level Of Service Report**

**Intersection 7: 5th St / Airport Rd**

Control Type:	Two-way stop	Delay (sec / veh):	38.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

**Intersection Setup**

Name	Airport Rd		5th St		5th St	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	150.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

**Volumes**

Name	Airport Rd		5th St		5th St	
Base Volume Input [veh/h]	93	193	51	193	343	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	14	18	17	74	51	10
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	211	68	267	394	92
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	65	21	82	122	28
Total Analysis Volume [veh/h]	132	260	84	330	486	114
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.56	0.48	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	38.61	17.63	9.01	0.00	0.00	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.12	2.58	0.28	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	78.00	64.51	7.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]		24.70		1.83		0.00
Approach LOS		C		A		A
d_I, Intersection Delay [s/veh]				7.42		
Intersection LOS				E		

**Intersection Level Of Service Report**

**Intersection 1: US 50 / N. Lompa Ln**

Control Type: Signalized  
 Analysis Method: HCM 6th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 22.9  
 Level Of Service: C  
 Volume to Capacity (v/c): 0.499

**Intersection Setup**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	150.00	100.00	100.00	200.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Base Volume Input [veh/h]	143	25	39	61	44	84	99	1522	225	35	1343	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	100	0	0	116	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	12	0	0	25	0	0	68	0	0	21
Total Hourly Volume [veh/h]	143	25	27	61	44	59	99	1622	157	35	1459	49
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	7	7	16	12	16	27	436	42	9	392	13
Total Analysis Volume [veh/h]	154	27	29	66	47	63	106	1744	169	38	1569	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				1			1			0	
v_di, Inbound Pedestrian Volume crossing m	0				1			1			0	
v_co, Outbound Pedestrian Volume crossing	0				2			0			2	
v_ci, Inbound Pedestrian Volume crossing mi	0				2			0			2	
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0	
Bicycle Volume [bicycles/h]	0				0			1			1	

**Intersection Settings**

Located in CBD	No												
Signal Coordination Group	-												
Cycle Length [s]	130												
Coordination Type	Time of Day Pattern Coordinated												
Actuation Type	Fully actuated												
Offset [s]	14.0												
Offset Reference	Lead Green - Beginning of First Green												
Permissive Mode	SingleBand												
Lost time [s]	0.00												

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0	
Auxiliary Signal Groups													
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-	
Minimum Green [s]	0	5	0	0	5	0	5	10	0	5	10	0	
Maximum Green [s]	0	25	0	0	25	0	20	40	0	20	40	0	
Amber [s]	0.0	4.4	0.0	0.0	4.4	0.0	3.9	4.8	0.0	3.9	4.8	0.0	
All red [s]	0.0	3.3	0.0	0.0	3.3	0.0	3.1	1.0	0.0	2.7	1.0	0.0	
Split [s]	0	44	0	0	44	0	26	60	0	26	60	0	
Vehicle Extension [s]	0.0	2.2	0.0	0.0	2.2	0.0	2.0	2.5	0.0	2.0	2.5	0.0	
Walk [s]	0	11	0	0	11	0	0	9	0	0	7	0	
Pedestrian Clearance [s]	0	25	0	0	25	0	0	16	0	0	12	0	
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Rest In Walk		No			No			No			No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	
I2, Clearance Lost Time [s]	0.0	5.7	0.0	0.0	5.7	0.0	5.0	3.8	0.0	4.6	3.8	0.0	
Minimum Recall		No			No		No	No		No	No		
Maximum Recall		No			No		No	Yes		No	Yes		
Pedestrian Recall		No			No		No	No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0												
Pedestrian Walk [s]	0												
Pedestrian Clearance [s]	0												

**Lane Group Calculations**

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	7.70	7.70	7.70	7.70	7.00	5.80	5.80	6.60	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	5.70	5.70	5.70	5.70	5.00	3.80	3.80	4.60	3.80	3.80
g_i, Effective Green Time [s]	27	27	27	27	9	79	79	4	73	73
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.07	0.61	0.61	0.03	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.12	0.03	0.05	0.06	0.06	0.35	0.36	0.02	0.30	0.30
s, saturation flow rate [veh/h]	1291	1727	1358	1709	1795	3589	1790	1795	3589	1849
c, Capacity [veh/h]	228	364	276	360	130	2175	1085	52	2007	1034
d1, Uniform Delay [s]	55.35	41.85	47.95	43.28	59.43	15.63	15.74	62.62	17.98	18.00
k, delay calibration	0.06	0.06	0.06	0.06	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.87	0.10	0.24	0.26	4.67	1.16	2.38	7.28	1.02	1.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.67	0.15	0.24	0.31	0.82	0.58	0.59	0.73	0.53	0.53
d, Delay for Lane Group [s/veh]	57.23	41.96	48.19	43.54	64.10	16.78	18.11	69.90	19.00	19.98
Lane Group LOS	E	D	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.12	1.51	1.93	3.06	3.54	10.85	11.40	1.33	9.70	10.31
50th-Percentile Queue Length [ft/ln]	128.00	37.64	48.29	76.56	88.50	271.33	285.10	33.19	242.49	257.76
95th-Percentile Queue Length [veh/ln]	8.83	2.71	3.48	5.51	6.37	16.26	16.94	2.39	14.81	15.58
95th-Percentile Queue Length [ft/ln]	220.77	67.75	86.92	137.80	159.30	406.40	423.56	59.75	370.19	389.41

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	57.23	41.96	41.96	48.19	43.54	43.54	64.10	17.14	18.11	69.90	19.31	19.98
Movement LOS	E	D	D	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	53.15			45.28			19.69			20.49		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]				22.85								
Intersection LOS				C								
Intersection V/C				0.499								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	13.0	11.0	15.0	15.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	1622.98	4444.46	0.00
d_p, Pedestrian Delay [s]	52.64	54.46	50.86	50.86
I_p,int, Pedestrian LOS Score for Intersection	2.121	2.104	3.558	3.470
Crosswalk LOS	B	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	559	559	834	834
d_b, Bicycle Delay [s]	33.76	33.76	22.10	22.10
I_b,int, Bicycle LOS Score for Intersection	1.926	1.891	2.707	2.484
Bicycle LOS	A	A	B	B

**Sequence**

Ring 1	3	4	2	-	-	-	-	-	-	-	-	-	-
Ring 2	7	8	6	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**

**Intersection 2: US 50 / Airport Rd**

Control Type:	Signalized	Delay (sec / veh):	33.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

**Intersection Setup**

Name	Airport Rd			Airport Rd			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	250.00	100.00	150.00	150.00	100.00	100.00	250.00	100.00	175.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Airport Rd			Airport Rd			US 50			US 50		
Base Volume Input [veh/h]	167	126	25	95	116	127	166	1241	206	28	1043	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	31	0	25	0	0	0	0	49	44	36	81	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	15	0	0	66	0	0	75	0	0	25
Total Hourly Volume [veh/h]	198	126	35	95	116	61	166	1290	175	64	1124	24
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	33	9	25	31	16	44	339	46	17	296	6
Total Analysis Volume [veh/h]	208	133	37	100	122	64	175	1358	184	67	1183	25
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		1			1			0			1	
v_di, Inbound Pedestrian Volume crossing m		1			0			1			1	
v_co, Outbound Pedestrian Volume crossing		3			1			2			1	
v_ci, Inbound Pedestrian Volume crossing mi		2			1			3			1	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			1			0			0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	130											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	25.0											
Offset Reference	Lead Green - Beginning of First Green											
Permissive Mode	SingleBand											
Lost time [s]	0.00											

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	20	25	0	20	25	0	20	40	0	20	40	0
Amber [s]	3.3	4.3	0.0	3.1	4.3	0.0	3.9	4.8	0.0	4.0	4.8	0.0
All red [s]	2.9	2.9	0.0	2.6	2.9	0.0	3.4	1.0	0.0	3.6	1.0	0.0
Split [s]	18	33	0	18	33	0	21	58	0	21	58	0
Vehicle Extension [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.0	2.2	0.0	1.0	2.2	0.0
Walk [s]	0	14	0	0	11	0	0	16	0	0	15	0
Pedestrian Clearance [s]	0	12	0	0	15	0	0	26	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.2	5.2	0.0	3.7	5.2	0.0	5.3	3.8	0.0	5.6	3.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

**Lane Group Calculations**

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	6.70	7.20	6.45	7.20	7.20	7.30	5.80	5.80	7.60	5.80	5.80
I1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	5.20	0.00	5.20	5.20	5.30	3.80	3.80	5.60	3.80	3.80
g_i, Effective Green Time [s]	36	24	36	24	24	14	68	68	6	61	61
g / C, Green / Cycle	0.28	0.18	0.28	0.18	0.18	0.11	0.53	0.53	0.05	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.09	0.07	0.06	0.04	0.10	0.38	0.12	0.04	0.33	0.02
s, saturation flow rate [veh/h]	1442	1814	1457	1885	1578	1795	3589	1595	1795	3589	1599
c, Capacity [veh/h]	338	329	313	341	286	190	1884	837	87	1687	751
d1, Uniform Delay [s]	48.25	48.10	47.56	46.63	45.43	57.60	23.59	16.57	61.15	27.25	18.56
k, delay calibration	0.14	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.29	0.47	0.22	0.23	0.15	7.51	2.42	0.60	5.33	2.46	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.62	0.52	0.32	0.36	0.22	0.92	0.72	0.22	0.77	0.70	0.03
d, Delay for Lane Group [s/veh]	50.54	48.57	47.78	46.86	45.57	65.11	26.01	17.17	66.48	29.71	18.64
Lane Group LOS	D	D	D	D	D	E	C	B	E	C	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.74	5.09	2.44	3.47	1.78	5.97	15.45	2.96	2.27	14.31	0.41
50th-Percentile Queue Length [ft/ln]	143.59	127.23	61.12	86.83	44.38	149.20	386.34	74.03	56.83	357.73	10.31
95th-Percentile Queue Length [veh/ln]	9.67	8.79	4.40	6.25	3.20	9.97	21.90	5.33	4.09	20.51	0.74
95th-Percentile Queue Length [ft/ln]	241.85	219.72	110.01	156.29	79.88	249.36	547.52	133.25	102.29	512.83	18.56

**Movement, Approach, & Intersection Results**

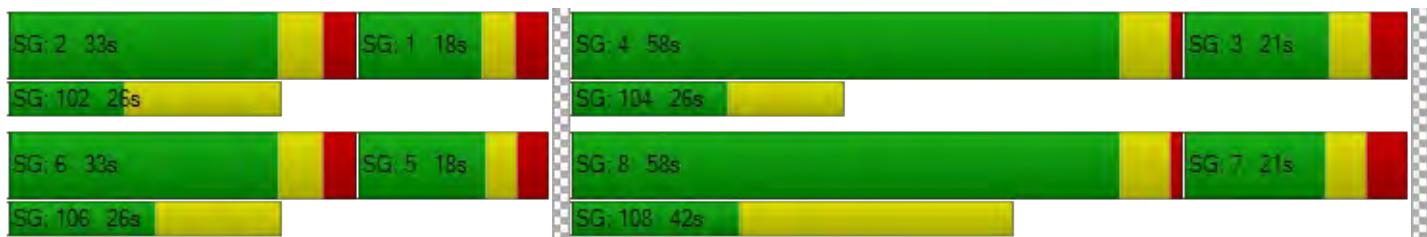
d_M, Delay for Movement [s/veh]	50.54	48.57	48.57	47.78	46.86	45.57	65.11	26.01	17.17	66.48	29.71	18.64
Movement LOS	D	D	D	D	D	D	E	C	B	E	C	B
d_A, Approach Delay [s/veh]	49.65			46.90			29.05			31.43		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]				33.40								
Intersection LOS				C								
Intersection V/C				0.527								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	20.0	19.0	15.0	18.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	1951.86	6533.68	7776.32	5844.74
d_p, Pedestrian Delay [s]	46.54	47.39	50.87	48.25
I_p,int, Pedestrian LOS Score for Intersection	2.201	2.439	3.621	3.312
Crosswalk LOS	B	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	397	397	803	803
d_b, Bicycle Delay [s]	41.76	41.78	23.28	23.28
I_b,int, Bicycle LOS Score for Intersection	2.208	2.140	3.038	2.632
Bicycle LOS	B	B	C	B

**Sequence**

Ring 1	2	1	3	4	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Airport Rd / Gordonia Dr**

Control Type:	All-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.342

**Intersection Setup**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Base Volume Input [veh/h]	169	27	28	167	3	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	56	0	0	80	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	27	28	247	3	22
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	7	7	65	1	6
Total Analysis Volume [veh/h]	237	28	29	260	3	23
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	856	845	784
Degree of Utilization, x	0.31	0.34	0.03

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.32	1.53	0.10
95th-Percentile Queue Length [ft]	33.03	38.15	2.57
Approach Delay [s/veh]	9.08	9.46	7.75
Approach LOS	A	A	A
Intersection Delay [s/veh]		9.21	
Intersection LOS		A	

**Intersection Level Of Service Report**

**Intersection 4: Airport Rd / Desatoya Dr / N. Lompa Ln**

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.047

**Intersection Setup**

Name	Airport Rd		Airport Rd		Desatoya Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		Desatoya Dr	
Base Volume Input [veh/h]	169	26	51	119	19	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	56	0	0	80	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	26	51	199	19	27
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	7	14	55	5	7
Total Analysis Volume [veh/h]	247	29	56	219	21	30
Pedestrian Volume [ped/h]	0		0		2	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.05	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.92	0.00	13.60	10.20
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.14	0.00	0.28	0.28
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.41	0.00	6.99	6.99
d_A, Approach Delay [s/veh]	0.00		1.61		11.60	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			1.72			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Airport Rd / Butti Way**

Control Type: Two-way stop      Delay (sec / veh): 13.0  
 Analysis Method: HCM 6th Edition      Level Of Service: B  
 Analysis Period: 15 minutes      Volume to Capacity (v/c): 0.082

**Intersection Setup**

Name	Airport Rd		Airport Rd		Butti Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		Butti Way	
Base Volume Input [veh/h]	158	31	6	132	27	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	40	13	26	54	8	16
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	198	44	32	186	35	53
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	13	9	53	10	15
Total Analysis Volume [veh/h]	225	50	36	211	40	60
Pedestrian Volume [ped/h]	0		0		5	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.08	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	7.78	0.00	13.03	10.00
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.00	0.27	0.25
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.08	0.00	6.66	6.23
d_A, Approach Delay [s/veh]	0.00		1.13		11.21	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			2.25			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 7: 5th St / Airport Rd**

Control Type:	Two-way stop	Delay (sec / veh):	41.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

**Intersection Setup**

Name	Airport Rd		5th St		5th St	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	150.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

**Volumes**

Name	Airport Rd		5th St		5th St	
Base Volume Input [veh/h]	54	105	146	292	183	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	5	57	45	26	32	8
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	162	191	318	215	51
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	51	60	99	67	16
Total Analysis Volume [veh/h]	74	203	239	398	269	64
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.44	0.27	0.19	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	41.58	11.71	8.64	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.98	1.12	0.72	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	49.62	27.96	18.05	0.00	0.00	0.00
d_A, Approach Delay [s/veh]		19.69		3.24		0.00
Approach LOS		C		A		A
d_I, Intersection Delay [s/veh]				6.03		
Intersection LOS				E		

# **Appendix C**

## **Baseline Plus Project**

### **LOS Calculations**



**Intersection Level Of Service Report**

**Intersection 1: US 50 / N. Lompa Ln**

Control Type: Signalized  
 Analysis Method: HCM 6th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 22.2  
 Level Of Service: C  
 Volume to Capacity (v/c): 0.538

**Intersection Setup**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	150.00	100.00	100.00	200.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Base Volume Input [veh/h]	164	37	20	46	35	114	35	743	118	14	1591	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	99	0	0	64	0
Site-Generated Trips [veh/h]	37	0	0	0	0	0	0	0	12	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	6	0	0	34	0	0	39	0	0	10
Total Hourly Volume [veh/h]	201	37	14	46	35	80	35	842	91	14	1655	23
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	10	4	12	9	22	9	226	24	4	445	6
Total Analysis Volume [veh/h]	216	40	15	49	38	86	38	905	98	15	1780	25
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				1			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			1	
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0	
Bicycle Volume [bicycles/h]	0				0			0			0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	115											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	66.0											
Offset Reference	Lead Green - Beginning of First Green											
Permissive Mode	SingleBand											
Lost time [s]	0.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	5	10	0
Maximum Green [s]	0	25	0	0	25	0	20	40	0	20	40	0
Amber [s]	0.0	4.4	0.0	0.0	4.4	0.0	3.9	4.8	0.0	3.9	4.8	0.0
All red [s]	0.0	3.3	0.0	0.0	3.3	0.0	3.1	1.0	0.0	2.7	1.0	0.0
Split [s]	0	35	0	0	35	0	26	45	0	35	54	0
Vehicle Extension [s]	0.0	2.2	0.0	0.0	2.2	0.0	2.0	2.5	0.0	2.0	2.5	0.0
Walk [s]	0	11	0	0	11	0	0	9	0	0	7	0
Pedestrian Clearance [s]	0	16	0	0	16	0	0	16	0	0	12	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	5.7	0.0	0.0	5.7	0.0	5.0	3.8	0.0	4.6	3.8	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

**Lane Group Calculations**

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	7.70	7.70	7.70	7.70	7.00	5.80	5.80	6.60	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	5.70	5.70	5.70	5.70	5.00	3.80	3.80	4.60	3.80	3.80
g_i, Effective Green Time [s]	27	27	27	27	4	66	66	2	64	64
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.03	0.57	0.57	0.02	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.17	0.03	0.04	0.08	0.02	0.19	0.19	0.01	0.34	0.34
s, saturation flow rate [veh/h]	1236	1741	1316	1626	1738	3475	1735	1738	3475	1812
c, Capacity [veh/h]	257	413	319	386	55	1980	989	31	1920	1001
d1, Uniform Delay [s]	49.36	34.51	38.69	36.18	55.09	13.16	13.17	55.92	17.46	17.47
k, delay calibration	0.15	0.06	0.06	0.06	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.04	0.08	0.12	0.26	5.64	0.46	0.93	4.35	1.50	2.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.84	0.13	0.15	0.32	0.69	0.34	0.34	0.49	0.62	0.62
d, Delay for Lane Group [s/veh]	59.40	34.59	38.81	36.43	60.73	13.62	14.10	60.28	18.97	20.33
Lane Group LOS	E	C	D	D	E	B	B	E	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.04	1.24	1.18	2.94	1.15	4.32	4.47	0.46	10.04	10.85
50th-Percentile Queue Length [ft/ln]	175.99	31.03	29.60	73.49	28.74	108.07	111.68	11.46	250.96	271.37
95th-Percentile Queue Length [veh/ln]	11.39	2.23	2.13	5.29	2.07	7.73	7.93	0.82	15.23	16.26
95th-Percentile Queue Length [ft/ln]	284.77	55.85	53.27	132.29	51.74	193.31	198.33	20.62	380.87	406.46

**Movement, Approach, & Intersection Results**

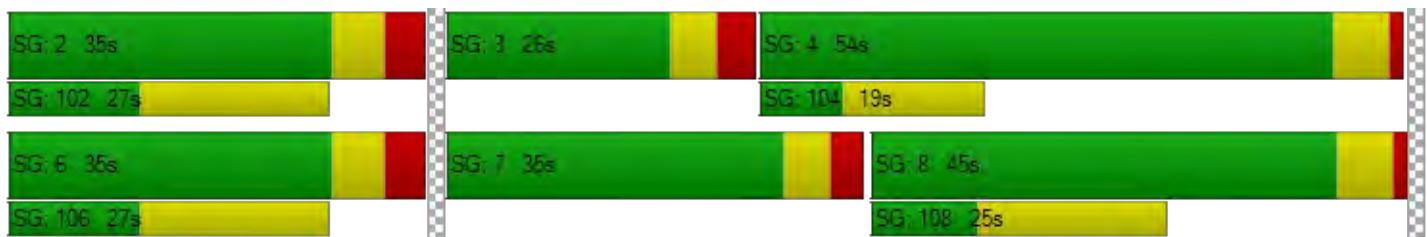
d_M, Delay for Movement [s/veh]	59.40	34.59	34.59	38.81	36.43	36.43	60.73	13.74	14.10	60.28	19.42	20.33
Movement LOS	E	C	C	D	D	D	E	B	B	E	B	C
d_A, Approach Delay [s/veh]	54.37			37.11			15.49			19.77		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]				22.17								
Intersection LOS					C							
Intersection V/C				0.538								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	13.0	11.0	15.0	15.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	7857.08	0.00	0.00
d_p, Pedestrian Delay [s]	45.22	47.01	43.46	43.46
I_p,int, Pedestrian LOS Score for Intersection	2.085	2.087	3.519	3.272
Crosswalk LOS	B	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	475	475	682	839
d_b, Bicycle Delay [s]	33.42	33.42	24.96	19.39
I_b,int, Bicycle LOS Score for Intersection	2.017	1.901	2.154	2.566
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: US 50 / Airport Rd**

Control Type: Signalized Delay (sec / veh): 26.0  
Analysis Method: HCM 6th Edition Level Of Service: C  
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.544

**Intersection Setup**

Name	Airport Rd			Airport Rd			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	250.00	100.00	150.00	150.00	100.00	100.00	250.00	100.00	175.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Airport Rd			Airport Rd			US 50			US 50		
Base Volume Input [veh/h]	167	84	16	44	100	98	38	616	97	16	1286	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	26	0	22	0	0	0	0	75	15	12	31	0
Site-Generated Trips [veh/h]	0	5	19	0	1	0	0	0	0	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	17	0	0	51	0	0	58	0	0	19
Total Hourly Volume [veh/h]	193	89	40	44	101	47	38	691	54	34	1317	17
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	24	11	12	27	13	10	184	14	9	350	5
Total Analysis Volume [veh/h]	205	95	43	47	107	50	40	735	57	36	1401	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			1			0	
v_di, Inbound Pedestrian Volume crossing m	0				1			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0	
Bicycle Volume [bicycles/h]	0				0			1			0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	115											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	45.0											
Offset Reference	Lead Green - Beginning of First Green											
Permissive Mode	SingleBand											
Lost time [s]	0.00											

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	20	25	0	20	25	0	20	40	0	20	40	0
Amber [s]	3.3	4.3	0.0	3.1	4.3	0.0	3.9	4.8	0.0	4.0	4.8	0.0
All red [s]	2.9	2.9	0.0	2.6	2.9	0.0	3.4	1.0	0.0	3.6	1.0	0.0
Split [s]	18	34	0	18	34	0	24	39	0	24	39	0
Vehicle Extension [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.0	2.2	0.0	1.0	2.2	0.0
Walk [s]	0	14	0	0	11	0	0	16	0	0	15	0
Pedestrian Clearance [s]	0	13	0	0	16	0	0	17	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.2	5.2	0.0	3.7	5.2	0.0	5.3	3.8	0.0	5.6	3.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

**Lane Group Calculations**

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	6.70	7.20	6.45	7.20	7.20	7.30	5.80	5.80	7.60	5.80	5.80
I1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	5.20	0.00	5.20	5.20	5.30	3.80	3.80	5.60	3.80	3.80
g_i, Effective Green Time [s]	29	15	30	15	15	4	63	63	3	63	63
g / C, Green / Cycle	0.25	0.13	0.26	0.13	0.13	0.03	0.55	0.55	0.03	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.08	0.03	0.06	0.03	0.02	0.21	0.04	0.02	0.41	0.01
s, saturation flow rate [veh/h]	1488	1716	1502	1810	1535	1724	3446	1507	1724	3446	1538
c, Capacity [veh/h]	323	221	316	234	199	56	1880	822	53	1883	841
d1, Uniform Delay [s]	42.76	47.54	40.99	46.38	45.10	55.16	15.11	12.35	55.22	19.95	11.98
k, delay calibration	0.06	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.22	1.08	0.08	0.52	0.24	6.09	0.61	0.16	5.43	2.71	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.63	0.63	0.15	0.46	0.25	0.71	0.39	0.07	0.68	0.74	0.02
d, Delay for Lane Group [s/veh]	43.97	48.63	41.07	46.90	45.35	61.25	15.72	12.51	60.64	22.66	12.02
Lane Group LOS	D	D	D	D	D	E	B	B	E	C	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.04	3.85	1.00	2.84	1.29	1.22	5.29	0.69	1.09	13.62	0.21
50th-Percentile Queue Length [ft/ln]	125.94	96.14	25.05	71.07	32.25	30.40	132.13	17.17	27.22	340.58	5.25
95th-Percentile Queue Length [veh/ln]	8.72	6.92	1.80	5.12	2.32	2.19	9.06	1.24	1.96	19.68	0.38
95th-Percentile Queue Length [ft/ln]	217.96	173.06	45.08	127.93	58.06	54.72	226.39	30.90	49.00	491.91	9.46

**Movement, Approach, & Intersection Results**

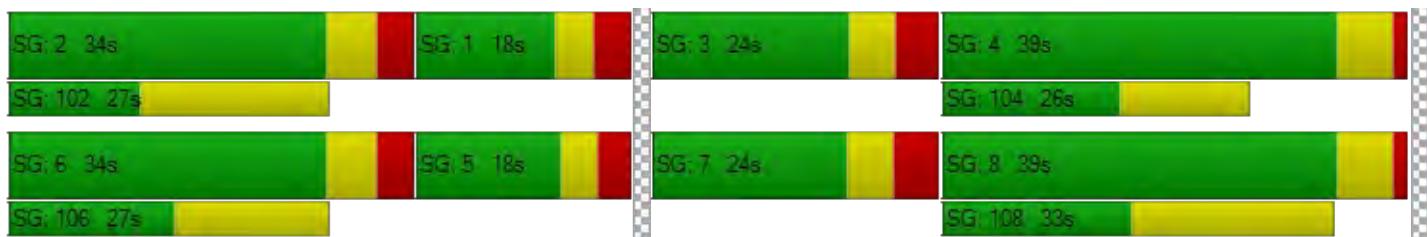
d_M, Delay for Movement [s/veh]	43.97	48.63	48.63	41.07	46.90	45.35	61.25	15.72	12.51	60.64	22.66	12.02
Movement LOS	D	D	D	D	D	D	E	B	B	E	C	B
d_A, Approach Delay [s/veh]	45.84			45.17			17.69			23.47		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]				26.04								
Intersection LOS					C							
Intersection V/C				0.544								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	20.0	19.0	15.0	18.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	9921.03	0.00
d_p, Pedestrian Delay [s]	39.27	40.10	43.51	40.94
I_p,int, Pedestrian LOS Score for Intersection	2.136	2.330	3.332	3.108
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	466	466	577	577
d_b, Bicycle Delay [s]	33.85	33.85	29.14	29.12
I_b,int, Bicycle LOS Score for Intersection	2.154	1.980	2.294	2.776
Bicycle LOS	B	A	B	C

**Sequence**

Ring 1	2	1	3	4	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Airport Rd / Gordonia Dr**

Control Type:	All-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.316

**Intersection Setup**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Base Volume Input [veh/h]	139	13	35	157	46	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	48	0	0	27	0	0
Site-Generated Trips [veh/h]	24	0	0	7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	13	35	191	46	54
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	4	10	53	13	15
Total Analysis Volume [veh/h]	234	14	39	212	51	60
Pedestrian Volume [ped/h]	0		0		0	

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**Intersection Settings**

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**Lanes**

Capacity per Entry Lane [veh/h]	806	795	745
Degree of Utilization, x	0.31	0.32	0.15

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.31	1.36	0.52
95th-Percentile Queue Length [ft]	32.76	33.93	13.04
Approach Delay [s/veh]	9.45	9.60	8.67
Approach LOS	A	A	A
Intersection Delay [s/veh]		9.37	
Intersection LOS		A	

**Intersection Level Of Service Report**

**Intersection 4: Airport Rd / Desatoya Dr / N. Lompa Ln**

Control Type: Two-way stop Delay (sec / veh): 15.8  
 Analysis Method: HCM 6th Edition Level Of Service: C  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.164

**Intersection Setup**

Name	Airport Rd			Airport Rd			N. Lompa Ln			Desatoya Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	50.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

**Volumes**

Name	Airport Rd			Airport Rd			N. Lompa Ln			Desatoya Dr		
Base Volume Input [veh/h]	0	119	23	15	188	0	0	0	0	54	0	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	48	0	0	27	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	5	0	0	2	5	19	0	25	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	172	23	15	217	5	19	0	25	54	0	33
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	53	7	5	67	2	6	0	8	17	0	10
Total Analysis Volume [veh/h]	10	212	28	19	268	6	23	0	31	67	0	41
Pedestrian Volume [ped/h]	0			0			0			1		

**Intersection Settings**

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.04	0.16	0.00	0.05									
d_M, Delay for Movement [s/veh]	7.80	0.00	0.00	7.75	0.00	0.00	14.52	13.72	9.87	15.78	15.35	11.37									
Movement LOS	A	A	A	A	A	A	B	B	A	C	C	B									
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.04	0.00	0.00	0.18	0.13	0.13	0.81	0.81	0.81									
95th-Percentile Queue Length [ft/ln]	0.58	0.58	0.58	1.09	0.00	0.00	4.54	3.14	3.14	20.18	20.18	20.18									
d_A, Approach Delay [s/veh]	0.31			0.50			11.85			14.10											
Approach LOS	A			A			B			B											
d_I, Intersection Delay [s/veh]	3.39																				
Intersection LOS	C																				

**Intersection Level Of Service Report**  
**Intersection 5: Airport Rd / South Project Access**

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

**Intersection Setup**

Name	Airport Rd		Airport Rd		South Project Access	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		South Project Access	
Base Volume Input [veh/h]	0	142	242	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	48	27	0	0	0
Site-Generated Trips [veh/h]	2	8	25	2	5	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	198	294	2	5	7
Peak Hour Factor	0.7800	0.7800	0.7800	0.7800	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	63	94	1	2	2
Total Analysis Volume [veh/h]	3	254	377	3	6	9
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	8.06	0.00	0.00	0.00	13.38	10.57
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.00	0.00	2.09	2.09
d_A, Approach Delay [s/veh]	0.09		0.00		11.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			0.31			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Airport Rd / Butti Way**

Control Type: Two-way stop Delay (sec / veh): 16.2  
Analysis Method: HCM 6th Edition Level Of Service: C  
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.235

**Intersection Setup**

Name	Airport Rd		Airport Rd		Butti Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		Butti Way	
Base Volume Input [veh/h]	123	10	17	225	61	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	3.00	3.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	23	4	8	19	13	25
Site-Generated Trips [veh/h]	10	0	0	32	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	156	14	25	276	74	44
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	5	8	92	25	15
Total Analysis Volume [veh/h]	208	19	33	368	99	59
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.24	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	7.72	0.00	16.17	9.73
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.00	0.90	0.23
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.87	0.00	22.57	5.80
d_A, Approach Delay [s/veh]	0.00		0.64		13.76	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			3.09			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 7: 5th St / Airport Rd**

Control Type: Two-way stop      Delay (sec / veh): 45.1  
 Analysis Method: HCM 6th Edition      Level Of Service: E  
 Analysis Period: 15 minutes      Volume to Capacity (v/c): 0.634

**Intersection Setup**

Name	Airport Rd		5th St		5th St	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	150.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

**Volumes**

Name	Airport Rd		5th St		5th St	
Base Volume Input [veh/h]	93	193	51	193	343	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	14	18	17	74	51	10
Site-Generated Trips [veh/h]	9	23	7	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	234	75	267	394	95
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	72	23	82	122	29
Total Analysis Volume [veh/h]	143	289	93	330	486	117
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.63	0.53	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	45.12	19.05	9.06	0.00	0.00	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.80	3.13	0.31	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	95.04	78.35	7.85	0.00	0.00	0.00
d_A, Approach Delay [s/veh]		27.68		1.99		0.00
Approach LOS		D		A		A
d_I, Intersection Delay [s/veh]				8.78		
Intersection LOS				E		

**Intersection Level Of Service Report**

**Intersection 1: US 50 / N. Lompa Ln**

Control Type: Signalized  
 Analysis Method: HCM 6th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 24.3  
 Level Of Service: C  
 Volume to Capacity (v/c): 0.524

**Intersection Setup**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	150.00	100.00	100.00	200.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	N. Lompa Ln			N. Lompa Ln			US 50			US 50		
Base Volume Input [veh/h]	143	25	39	61	44	84	99	1522	225	35	1343	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	100	0	0	116	0
Site-Generated Trips [veh/h]	22	0	0	0	0	0	0	0	39	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	12	0	0	25	0	0	79	0	0	21
Total Hourly Volume [veh/h]	165	25	27	61	44	59	99	1622	185	35	1459	49
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	7	7	16	12	16	27	436	50	9	392	13
Total Analysis Volume [veh/h]	177	27	29	66	47	63	106	1744	199	38	1569	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				1			1			0	
v_di, Inbound Pedestrian Volume crossing m	0				1			1			0	
v_co, Outbound Pedestrian Volume crossing	0				2			0			2	
v_ci, Inbound Pedestrian Volume crossing mi	0				2			0			2	
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0	
Bicycle Volume [bicycles/h]	0				0			1			1	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	130											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	14.0											
Offset Reference	Lead Green - Beginning of First Green											
Permissive Mode	SingleBand											
Lost time [s]	0.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	5	10	0
Maximum Green [s]	0	25	0	0	25	0	20	40	0	20	40	0
Amber [s]	0.0	4.4	0.0	0.0	4.4	0.0	3.9	4.8	0.0	3.9	4.8	0.0
All red [s]	0.0	3.3	0.0	0.0	3.3	0.0	3.1	1.0	0.0	2.7	1.0	0.0
Split [s]	0	44	0	0	44	0	26	60	0	26	60	0
Vehicle Extension [s]	0.0	2.2	0.0	0.0	2.2	0.0	2.0	2.5	0.0	2.0	2.5	0.0
Walk [s]	0	11	0	0	11	0	0	9	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	25	0	0	16	0	0	12	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	5.7	0.0	0.0	5.7	0.0	5.0	3.8	0.0	4.6	3.8	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

**Lane Group Calculations**

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	7.70	7.70	7.70	7.70	7.00	5.80	5.80	6.60	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	5.70	5.70	5.70	5.70	5.00	3.80	3.80	4.60	3.80	3.80
g_i, Effective Green Time [s]	30	30	30	30	9	77	77	4	71	71
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.07	0.59	0.59	0.03	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.14	0.03	0.05	0.06	0.06	0.36	0.37	0.02	0.30	0.30
s, saturation flow rate [veh/h]	1291	1727	1358	1709	1795	3589	1776	1795	3589	1849
c, Capacity [veh/h]	253	393	301	389	130	2113	1045	52	1946	1002
d1, Uniform Delay [s]	53.99	40.06	45.83	41.42	59.43	17.18	17.33	62.62	19.40	19.43
k, delay calibration	0.06	0.06	0.06	0.06	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.89	0.09	0.19	0.21	4.67	1.33	2.78	7.28	1.12	2.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.70	0.14	0.22	0.28	0.82	0.61	0.62	0.73	0.55	0.55
d, Delay for Lane Group [s/veh]	55.88	40.14	46.03	41.64	64.10	18.51	20.11	69.90	20.53	21.61
Lane Group LOS	E	D	D	D	E	B	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.86	1.47	1.89	2.99	3.54	11.77	12.35	1.33	10.16	10.81
50th-Percentile Queue Length [ft/ln]	146.56	36.77	47.13	74.77	88.50	294.32	308.71	33.19	254.11	270.25
95th-Percentile Queue Length [veh/ln]	9.83	2.65	3.39	5.38	6.37	17.40	18.11	2.39	15.39	16.20
95th-Percentile Queue Length [ft/ln]	245.83	66.19	84.83	134.59	159.30	435.00	452.78	59.75	384.82	405.05

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	55.88	40.14	40.14	46.03	41.64	41.64	64.10	18.93	20.11	69.90	20.87	21.61
Movement LOS	E	D	D	D	D	D	E	B	C	E	C	C
d_A, Approach Delay [s/veh]	52.09			43.28			21.38			22.02		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]				24.31								
Intersection LOS					C							
Intersection V/C				0.524								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	13.0	11.0	15.0	15.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	1622.98	4349.92	0.00
d_p, Pedestrian Delay [s]	52.64	54.46	50.86	50.86
I_p,int, Pedestrian LOS Score for Intersection	2.138	2.104	3.613	3.470
Crosswalk LOS	B	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	559	559	834	834
d_b, Bicycle Delay [s]	33.76	33.76	22.10	22.10
I_b,int, Bicycle LOS Score for Intersection	1.964	1.891	2.730	2.484
Bicycle LOS	A	A	B	B

**Sequence**

Ring 1	3	4	2	-	-	-	-	-	-	-	-	-	-
Ring 2	7	8	6	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: US 50 / Airport Rd**

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.534

**Intersection Setup**

Name	Airport Rd			Airport Rd			US 50			US 50		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	250.00	100.00	150.00	150.00	100.00	100.00	250.00	100.00	175.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Airport Rd			Airport Rd			US 50			US 50		
Base Volume Input [veh/h]	167	126	25	95	116	127	166	1241	206	28	1043	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	31	0	25	0	0	0	0	49	44	36	81	0
Site-Generated Trips [veh/h]	0	3	12	0	5	0	0	0	0	20	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	19	0	0	66	0	0	75	0	0	25
Total Hourly Volume [veh/h]	198	129	43	95	121	61	166	1290	175	84	1124	24
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	34	11	25	32	16	44	339	46	22	296	6
Total Analysis Volume [veh/h]	208	136	45	100	127	64	175	1358	184	88	1183	25
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		1			1			0			1	
v_di, Inbound Pedestrian Volume crossing m		1			0			1			1	
v_co, Outbound Pedestrian Volume crossing		3			1			2			1	
v_ci, Inbound Pedestrian Volume crossing mi		2			1			3			1	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			1			0			0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	130											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	25.0											
Offset Reference	Lead Green - Beginning of First Green											
Permissive Mode	SingleBand											
Lost time [s]	0.00											

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	20	25	0	20	25	0	20	40	0	20	40	0
Amber [s]	3.3	4.3	0.0	3.1	4.3	0.0	3.9	4.8	0.0	4.0	4.8	0.0
All red [s]	2.9	2.9	0.0	2.6	2.9	0.0	3.4	1.0	0.0	3.6	1.0	0.0
Split [s]	18	33	0	18	33	0	21	58	0	21	58	0
Vehicle Extension [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.0	2.2	0.0	1.0	2.2	0.0
Walk [s]	0	14	0	0	11	0	0	16	0	0	15	0
Pedestrian Clearance [s]	0	12	0	0	15	0	0	26	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.2	5.2	0.0	3.7	5.2	0.0	5.3	3.8	0.0	5.6	3.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

**Lane Group Calculations**

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	6.70	7.20	6.45	7.20	7.20	7.30	5.80	5.80	7.60	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.20	0.00	5.20	5.20	5.30	3.80	3.80	5.60	3.80	3.80
g_i, Effective Green Time [s]	36	24	37	24	24	14	66	66	8	61	61
g / C, Green / Cycle	0.28	0.19	0.28	0.19	0.19	0.11	0.51	0.51	0.06	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.10	0.07	0.07	0.04	0.10	0.38	0.12	0.05	0.33	0.02
s, saturation flow rate [veh/h]	1435	1804	1446	1885	1579	1795	3589	1594	1795	3589	1599
c, Capacity [veh/h]	341	336	311	350	293	190	1819	808	111	1669	744
d1, Uniform Delay [s]	48.05	47.88	47.76	46.21	44.89	57.60	25.43	17.86	60.18	27.74	18.89
k, delay calibration	0.14	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.27	0.50	0.22	0.23	0.14	7.51	2.84	0.66	4.77	2.57	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.61	0.54	0.32	0.36	0.22	0.92	0.75	0.23	0.79	0.71	0.03
d, Delay for Lane Group [s/veh]	50.33	48.38	47.98	46.44	45.02	65.11	28.27	18.52	64.96	30.32	18.98
Lane Group LOS	D	D	D	D	D	E	C	B	E	C	B
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.70	5.42	2.43	3.60	1.76	5.97	16.26	3.10	2.95	14.48	0.42
50th-Percentile Queue Length [ft/ln]	142.59	135.60	60.67	90.04	44.08	149.20	406.40	77.60	73.84	362.02	10.43
95th-Percentile Queue Length [veh/ln]	9.62	9.24	4.37	6.48	3.17	9.97	22.87	5.59	5.32	20.72	0.75
95th-Percentile Queue Length [ft/ln]	240.50	231.09	109.20	162.08	79.34	249.36	571.71	139.68	132.91	518.04	18.77

**Movement, Approach, & Intersection Results**

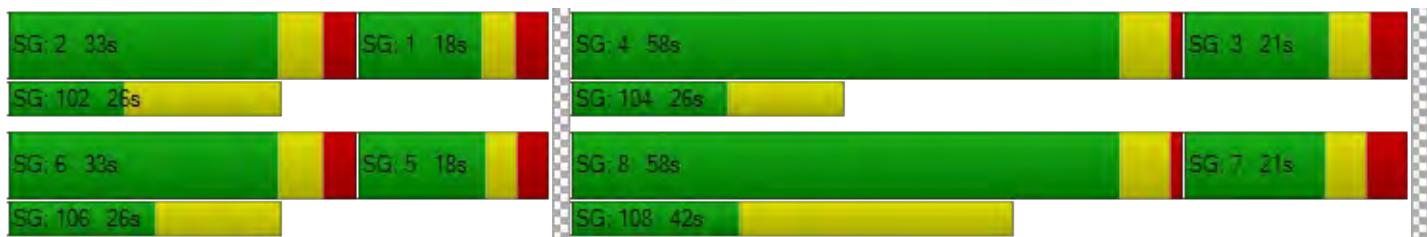
d_M, Delay for Movement [s/veh]	50.33	48.38	48.38	47.98	46.44	45.02	65.11	28.27	18.52	64.96	30.32	18.98
Movement LOS	D	D	D	D	D	D	E	C	B	E	C	B
d_A, Approach Delay [s/veh]	49.42			46.66			30.98			32.45		
Approach LOS		D			D		C			C		
d_I, Intersection Delay [s/veh]					34.67							
Intersection LOS							C					
Intersection V/C					0.534							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	20.0	19.0	15.0	18.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	1951.86	6533.68	7744.38	5810.59
d_p, Pedestrian Delay [s]	46.54	47.39	50.87	48.25
I_p,int, Pedestrian LOS Score for Intersection	2.217	2.441	3.625	3.320
Crosswalk LOS	B	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	397	397	803	803
d_b, Bicycle Delay [s]	41.76	41.78	23.28	23.28
I_b,int, Bicycle LOS Score for Intersection	2.233	2.149	3.038	2.649
Bicycle LOS	B	B	C	B

**Sequence**

Ring 1	2	1	3	4	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Airport Rd / Gordonia Dr**

Control Type:	All-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.374

**Intersection Setup**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Airport Rd		Airport Rd		Gordonia Dr	
Base Volume Input [veh/h]	169	27	28	167	3	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	56	0	0	80	0	0
Site-Generated Trips [veh/h]	15	0	0	25	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	240	27	28	272	3	22
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	7	7	72	1	6
Total Analysis Volume [veh/h]	253	28	29	286	3	23
Pedestrian Volume [ped/h]	0		0		0	

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**Intersection Settings**

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**Lanes**

Capacity per Entry Lane [veh/h]	850	842	770
Degree of Utilization, x	0.33	0.37	0.03

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.45	1.75	0.10
95th-Percentile Queue Length [ft]	36.31	43.71	2.62
Approach Delay [s/veh]	9.31	9.82	7.84
Approach LOS	A	A	A
Intersection Delay [s/veh]		9.51	
Intersection LOS		A	

**Intersection Level Of Service Report**

**Intersection 4: Airport Rd / Desatoya Dr / N. Lompa Ln**

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

**Intersection Setup**

Name	Airport Rd			Airport Rd			N. Lompa Ln			Desatoya Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	50.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

**Volumes**

Name	Airport Rd			Airport Rd			N. Lompa Ln			Desatoya Dr		
Base Volume Input [veh/h]	0	169	26	51	119	0	0	0	0	19	0	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	56	0	0	80	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	3	0	0	6	19	12	0	16	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	228	26	51	205	19	12	0	16	19	0	27
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	63	7	14	56	5	3	0	4	5	0	7
Total Analysis Volume [veh/h]	30	251	29	56	225	21	13	0	18	21	0	30
Pedestrian Volume [ped/h]	0			0			0			2		

**Intersection Settings**

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.04	0.00	0.00	0.04	0.00	0.02	0.06	0.00	0.04									
d_M, Delay for Movement [s/veh]	7.78	0.00	0.00	7.93	0.00	0.00	16.38	15.58	9.57	16.50	16.23	10.47									
Movement LOS	A	A	A	A	A	A	C	C	A	C	C	B									
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.07	0.14	0.00	0.00	0.12	0.07	0.07	0.34	0.34	0.34									
95th-Percentile Queue Length [ft/ln]	1.74	1.74	1.74	3.42	0.00	0.00	3.07	1.71	1.71	8.40	8.40	8.40									
d_A, Approach Delay [s/veh]	0.75			1.47			12.42			12.95											
Approach LOS	A			A			B			B											
d_I, Intersection Delay [s/veh]	2.48																				
Intersection LOS	C																				

**Intersection Level Of Service Report**  
**Intersection 5: Airport Rd / South Project Access**

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

**Intersection Setup**

Name	Airport Rd		Airport Rd		South Project Access	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		South Project Access	
Base Volume Input [veh/h]	0	195	138	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	56	80	0	0	0
Site-Generated Trips [veh/h]	7	27	16	6	3	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	278	234	6	3	5
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	77	65	2	1	1
Total Analysis Volume [veh/h]	8	309	260	7	3	6
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.79	0.00	0.00	0.00	12.78	9.73
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.47	0.47	0.00	0.00	1.08	1.08
d_A, Approach Delay [s/veh]	0.20		0.00		10.74	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			0.27			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Airport Rd / Butti Way**

Control Type:	Two-way stop	Delay (sec / veh):	13.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

**Intersection Setup**

Name	Airport Rd		Airport Rd		Butti Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Airport Rd		Airport Rd		Butti Way	
Base Volume Input [veh/h]	158	31	6	132	27	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	40	13	26	54	8	16
Site-Generated Trips [veh/h]	34	0	0	21	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	232	44	32	207	35	53
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	13	9	59	10	15
Total Analysis Volume [veh/h]	264	50	36	235	40	60
Pedestrian Volume [ped/h]	0		0		5	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.09	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	7.87	0.00	13.82	10.28
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.09	0.00	0.29	0.26
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.15	0.00	7.31	6.58
d_A, Approach Delay [s/veh]	0.00		1.05		11.70	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]			2.12			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 7: 5th St / Airport Rd**

Control Type: Two-way stop Delay (sec / veh): 54.2  
Analysis Method: HCM 6th Edition Level Of Service: F  
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.540

**Intersection Setup**

Name	Airport Rd		5th St		5th St	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	150.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

**Volumes**

Name	Airport Rd		5th St		5th St	
Base Volume Input [veh/h]	54	105	146	292	183	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	5	57	45	26	32	8
Site-Generated Trips [veh/h]	6	15	24	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	177	215	318	215	61
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	55	67	99	67	19
Total Analysis Volume [veh/h]	81	221	269	398	269	76
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.54	0.30	0.22	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	54.16	12.02	8.81	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.69	1.27	0.85	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	67.18	31.75	21.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]		23.32		3.55		0.00
Approach LOS		C		A		A
d_I, Intersection Delay [s/veh]				7.16		
Intersection LOS				F		